Subterranean Exploration

Gazette 11-29-36

Following One of the Numerous Underground Streams of the Arkansas Ozarks Has Many Interesting Features, as Well as an Eerie Aspect, Mr. Shiras Found on a Recent Trip.

By TOM SHIRAS

Most residents of Arkansas, and others, would say "Baloney!" if told there are dozens of unexplored rivers in the Arkansas Ozarks, and that their combined length would probably be as great as that of the explored streams. Some of them are large rivers, some are creeks and some so small that they might be best designated as spring branches. A lot of folks would put you down as a first-class liar if you told them they cross a lot of these unexplored rivers every time they make a trip through the Arkansas Ozarks. But anyone driving from Little Rock to the Missouri line, north of Harrison, crosses many of them. The same is true in a drive over Highway 62, from Hardy to Rogers, or over any other route that runs through the limestone section of the north part of the state.

They are beauiful, clear water streams. Some dashing, like mountain torrents, others that flow along gently like peaceful brooks. The scenery along their banks is every bit as wonderful as you will find along the explored streams in the spring.

They are streams that flow through the limestone catacombs of the mountains, many of them several hundred feet below the surface, others not so deep. But they are there, flowing all the time, like the surface streams. They have most of the characteristics of the surface streams. In flood time they have their overflows, and in dry weather fall to a low stage. The beds of these streams are about the same as the beds of the surface streams—solid rock and gravel—and in some places clay. The big difference between the underground streams and the surface streams is the aquatic life. The underground streams have no fish, not even blind fish, so don't take your rod and reel or gig along when you go to explore one of them. You might snag a blind crayfish, or a salamander, but that would be poor sport.

Curiosity was what brought Floyd Collins to death in a cave in Kentucky. It was the same kind of curiosity that prompted the writer to get the material for this article. Contemplating Floyd Collins' fate, when one is three miles underground, make one shiver. You just can't help feel that way. If you want to know how fine the sun can look, just make a trip like that.

As far as the average tourist is concerned, the end of the board walk in the Hurricane cavern near Pindall, in Searcy county, is the end of the cave. Flash a light to the left, however, and you see an eerie grotto in the gloom, through which flows a stream some 15 or 20 feet wide.

"Where does it go, Harley?" the writer asked as he looked into the darkness.

Harley Myles and his brother Harry and the writer were standing there looking into the darkness, the same thought in all our minds.

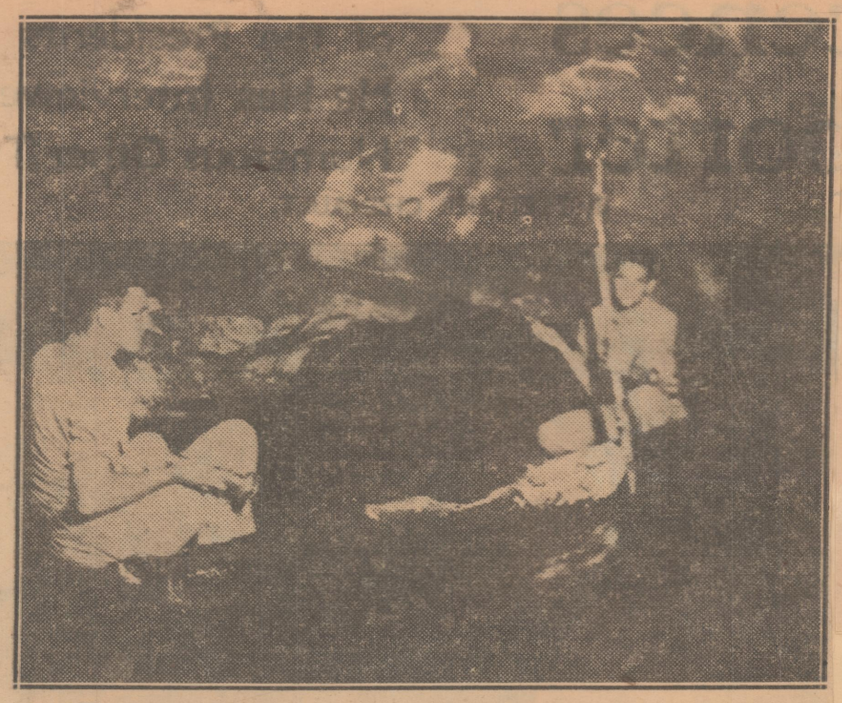
"Blamed if I know. It just goes off somewhere under the mountain."

There was an eight-foot canoe in the pool, which they used to paddle around in, also a pole. The boys looked at the canoe, then at the writer with challenging eyes.

"Let's go up the creek a mile or two and try and find a perch hole. What say?"

The two boys smiled, looked at each other and nodded their assent. The crew elected Harley pilot, and he made his way to the prow of the canoe with the light. The writer took his place in the center of the craft as the observer of the expedition, and Harry furnished the motive power with the pole, at the bow.

If you have ever floated any of the mountain streams in the Arkansas Ozarks, you know the woods sounds that greet your ear. You are regaled with the songs of birds, squirrels bark at you, saucily protesting the intrusion on their domain, and occasionally a bullfrog entertains you with a bass solo. You miss these sounds on an underground river float. No movement except the motion of the gliding boat. No noise except the swish of water along its sides. The pilot unwittingly snaps off the switch on the flashlight. Darkness—the blackest of black veils enshrouds you, and you sit with your heart in your mouth.



The Myles brothers, Harrry and Harley, in the canoe in which the underground stream was explored.

You think of Floyd Collins. Then you are cheered by the light again.

There are no leaves moving on the trees on the banks, for they are rock trees, grotesque stalactites, reaching from the roof, some fan-shape, others resembling huge spears, still others looking like small velvet drapes. Yonder a lone column of onyx that looks like the lower half of a storm-wrecked tree. The canoe turns a sharp bend. Cunningly hidden under an over-hanging ledge sprouts a garden of stalagmites, thick as lettuce, a devil's garden under the flashing rays of the light.

A weaving in and out with the stream, around acute angles, some curves being almost too narrow and sharp for the craft to navigate. At other places the stream widens into large pools with gravel beaches. At one of these places the navigators get out to stretch their legs and to get a little circulation back into their veins and arteries.

Off to another start and into another pool. "Be careful here, it's mighty deep," the pilot warns, throwing his light down on the surface. It doesn't stop at the surface. The water is limpid and 30 feet deep.

Every small pebble is as visible as if buried in glass. Bats hang in clusters from the roof. You think again of Floyd Collins and shiver.

Harry now is using the pole as a paddle and the boat is moving slowly across the hole. You can see the bed of the stream coming up, up, up and begin to breathe easier when you realize that you are in shallow water.

The banks begin to squeeze in until they make up in solid limestone walls about four feet apart. The current here is swifter, and you help propel the canoe along, with your hands on both walls. You drift through this narrow tunnel into another pool, and the pilot gives a warning yell and shouts through the tube to the engineer room to reverse the engines. "Danger ahead." You peer ahead, and observe that the ceiling has taken a notion to come down toward the surface of the water. Where it had been from 10 to 60 feet high, it is now only three feet high.

The engines are given the go-ahead signal again and the crew ducks, heads scraping the dripping roof. Hours seem to pass before you get through and the roof lifts again. You look around. The stream still is narrow, but you can see it widening in the gloom. Another shout comes from the pilot, and you hear a splashing murmur and the echoes. "Waterfalls," he shouts. Sure enough, a small falls, about a foot and a half high, blocks the passage of the canoe. The first portage. Everyone steps out into clear, cold water about knee deep and heaves. The good craft responds and is out on the left-hand bank.

Harley flashes the light around to get his bearings. "You know, Mr. Observer, all good explorers name the places that they discover. The river and these falls, now?"

The crew agrees on the name of the river: "The River of Doubt." And the falls: "Ebony Falls."

Righto, heave to, my hearty! And the expedition proceeds on the way up "the River of Doubt."

Around more narrow bends and through other limpid, lifeless pools and the pilot shouts another warning. "Low bridge, low bridge, reverse engines," and the good craft comes to a stop.

Everyone leans over, eyes following the rays of the flashlight straight ahead. The river has narrowed to about five feet across and a natural onyx bridge spans the water about four feet above the surface. Nature performs many miracles on the surface of the earth, but stranger ones below. This was a natural miniature bridge that any engineer would have been proud of having designed.

The crew and observer spent 15 minutes in conference over the naming of this bridge and finally decided to christen it the "Nocturnal Natural Bridge." Everyone ducked in a salute as the canoe glided under it, and into a broadening pool.

The canoe moved slowly up the stream, rockbound walls on both sides, the drops of water beaded on them, flashing like a billion diamonds in the rays of the light. Through wider pools that flowed through dome-shaped grottos, the walls in some instances reaching up 50 feet into the solid rock. Then another warning shout from the pilot. Another waterfall, a little higher than the first one, and another portage. "Heave ho my hearties," and the little craft was around it and moving again. "Ethiopian Falls," was the name we tagged it.

The observer thought of Floyd Collins again and looked at his watch. Two hours and still going up "the River of Doubt." Better call it a day and get out into the blessed sunshine again. Another warning shout from the pilot and the canoe came to a stop. The expedition was blocked this time by another natural bridge and it was marvelous. This was a single span bridge about eight feet across, with no center piers. But it had one support at the top, a solid column of onyx about eight inches in diameter, reaching from the floor of the bridge to the ceiling, holding it fast in position, as fast as solid rock could hold it. No engineer ever designed a bridge like it, for he would have had to run a column to the sky.

It was too close to the surface of the water for the canoe to pass under, and too high to lift it over. In a conference that last about 10 seconds, it was decided to end the exploring expedition at that place and reurn to the base, for a breath of dry air and a little sunshine. Going back, the crew and observer decided that a good name for it would be the "Termination Natural Bridge," and this name was bestowed upon it with the blessings of all, and a hope that we would go out twice as rapidly as we had come in.

Europe travels to Switzerland to climb the Alps, for sport. In climbing one of these snow-clad peaks one gets a lot of exercise, sees some wonderful scenery, and in places gets some thrills that make the hair raise and the stomach feel weak.

Arkansas has no Alps, but one can get the same physical reactions by making an exploration trip up any of the unexplored underground rivers in the Arkansas Ozarks.

Sale of Tax-Forfeited Lands' Mineral Rights Alone Banned.

11-25-36

Aubrey McCasland, Miller county deputy clerk, was advised yesterday by the attorney general's office that mineral rights to tax forfeited land cannot be purchased separately unless such rights were assessed and sold to the state separately from the overlying land. In that event, the tax, penalty and cost due when the property was forfeited to the state and two years' subsequent taxes must be paid to the state land commissioner before he can deliver title.

Mineralogist Predicts Mining Boom in State

Democrat 12-1-36

Hot Springs—A revival of mining activity in Arkansas in the near future was forecast today by Richard Buhlis, secretary-treasurer of the Arkansas Mineralogical Society, here making plans for the annual convention of the group at the Majestic hotel January 8 and 9.

"There has been considerable new development going on in mining sections of Arkansas the past year, and it is predicted by authoritive mining men that this state is on the verge of a noticeable revival of real mining development," Buhlis said.

Mineralogical Society Meets At Hot Springs January 8-9.

12-1-36

Special to the Gazette.

Hot Springs, Nov. 30.—Mining activities in Arkansas during 1937 will be outlined at the annual convention of the Arkansas mining interests here January 8 and 9, Richard Buhlis, secretary-treasurer of the Arkansas Mineralogical Society, announced today.

There has been considerable new development in the state during the past year.

J. H. Hand, Yellville, chairman of the Arrangement Committee, said that several well known engineers would be on the program.

Funds Allocated for Hydro-Electric Surveys

12-2-36

Washington (AP)—The war department announced today allocation of $34,000 for supplementary investigations of potential hydro-electric projects on the White river in Arkansas and the Missouri and Grand rivers in Oklahoma.

Secretary of War Woodring said the additional probes were advisable due to changes which have occurred since submission of the last reports on the two streams.

Various hydro-electric developments on the Grand and White rivers, particularly at Table Rock, Mo., long have been advocated. Efforts to obtain federal funds for the Table Rock project failed in the last two sessions of Congress.

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Dr. Branner Urges More Survey Work

Gazette 1-10-36

Makes Recommendation in Report of State Geologic Survey.

Plans for carrying forward a broad program of geologic, topographic and stream gauging work by the Arkansas Geologic Survey in cooperation with several Federal agencies are urged and recommended in a report by Dr. George C. Branner, state geologist, to Governor Futrell. The report, announced yesterday, covers administrative work of the state geologist for the year from December 1, 1935, to November 30, 1936, and includes accomplishments of the 12 months.

The Arkansas Geologic Survey issued eight publications during the year, six on geology and mineral resources and two on topography, the latter consisting of descriptions of 14,421 elevations in Arkansas and a complete set of county maps. Much of the work was done through two WPA projects.

Seven projects are under way now to list and classify water wells, springs, lakes, caves and caverns, commercial minerals of Magnet Cove and oil shales of northern Arkansas, while several new projects will be started if funds are available. These will include information on limestone quarrying, mineral resources data by counties, sand, gravel and stone deposits, and other mineral resource information.

Maps Prepared.

Included in the topographic projects were preparation of a complete set of county maps, co-operation with the Arkansas Forestry Commission and the Arkansas State Highway Commission to complete a series of county base maps, and to compute and run level and traverse lines. Co-operation with the United States Geological Survey has resulted in maintaining 17 stream gauging stations in the state while the recommendation has been made by the Federal survey that 28 additional stations be installed and maintained.

The office of the state geologist has directed two WPA projects and persons in the office have co-operated with numerous agencies in preparing information and providing information.

One of the important activities of the office was that of the severance tax agent, the report said, who was added to the staff following the 1935 legislature. Five-year audits of several firms were made and nearly $32,000 in back severance taxes were collected and claims are pending for $19,000 more.

Plans for the geological survey for the coming year include completion and publication of several reports, continuation of field studies on mineral resources, completion of a topographic survey of the state and co-operation in a stream gauging program.

The report also includes a list of severance tax payers, a list of mineral producers in the state and a directory of mineral producers for general information.

Quicksilver Is Found on Solon's Farm

1-20-37- Democrat

Senator

Sen. Alfred Featherston of Murfreesboro is seriously considering going into the quicksilver business.

Yesterday, he proudly displayed a small vial of quicksilver to fellow senators.

"That came off my farm," he explained.

It seems that Senator Featherston owns a farm about eight miles north of Murfreesboro. Three-fourths of his property is located directly on a cinnabar lead, traced recently by the federal government.

So Senator Featherston had his own survey made. A. D. Bradley, who conducted the tests, said they showed most favorable results. The vial of quicksilver was sent along so the senator could see the results of the test.

The reports said that test No. 1 showed 10 1-4 pounds of quicksilver per ton at a depth of six feet; six pounds of quicksilver per ton at the surface and three and a half pounds of quicksilver at a depth of three feet.

In concluding his report, Mr. Bradley said climatic conditions are favorable, labor plentiful and not expensive, timber and supplies easily had and the average production is around 15 pounds per ton to date.

"At that, poor management is the only thing that will cause failure," he wrote Senator Featherston.

As the senator explained the discovery of quicksilver on his property, one person chimed in: "Well, Senator, maybe you can resign from the Senate now."

"Well, you never know," the senator replied. 'Maybe I'll be resigned."

Fuel Minerals Chief Value Of State

Gazette 1-24-37

That Arkansas's rating as a mineral producing state is based primarily on its production of fuel minerals is reflected in Information Circular No. 9 of the Arkansas Geological Survey, just issued by George C. Branner, state geologist. The circular, compiled by Mary L. Gibson, presents "Mineral Production Statistics of Arkansas for the Period, 1880-1935."

Mr. Branner pointed out in his letter of transmittal to Governor Bailey that only three times from 1880 to 1934 did the value of fuel minerals drop below 50 per cent of the total annual value of minerals produced in the state. That occurred in 1915-17, when the World war was creating a huge demand for other kinds of minerals.

"During the same 55-year period," Mr. Branner wrote, "the value of nonmetallic minerals ($94,115,655) was 159.9 per cent greater than that of the metallic minerals ($36,213,639). During only two years of this period did the value of metallic minerals produced exceed that of nonmetallic minerals. These were the war years of 1916 and 1917 during which exceptionally high prices for aluminum, manganese, zinc and lead prevailed."

Growth Slow.

Arkansas's mineral production from 1880 to 1921 was a matter of slow growth from a total annual value of $33,535 to $22,515,412. Discovery of oil in south Arkansas caused a great jump to $87,185,532 in 1925. That was the peak year. In 1933 the aggregate value had dropped to $12,710,203, but there was a rally at that point. It rose to $16,081,642 in 1934.

Those figures were taken from reports of the United States Bureau of Mines. None were available for 1935, but it was known that there was a further increase.

Petroleum appeared in the annual reports for the first time in 1921, when production totaled 10,473,000 barrels and was valued at $12,746,000. In 1925 production was 77,398,000 barrels, valued at $68,880,000.

In 1933 only 11,686,000 barrels were produced and the next year the total dropped to 11,182,000, but the value in 1934 was $8,000,000 as compared with $4,850,000 in 1933.

State Mineral Production on Upgrade Again

Democrat 1-24-37

Report by Branner Shows Value Climbing After Decline.

Arkansas's mineral production again is on the increase after a marked slump following the decline of the oil industry in the state, it is shown in an information circular just released by Dr. George C. Branner, state geologist.

The circular was compiled by Mary L. Gibson with the assistant of Works Progress Administration personnel and is entitled "Mineral Production Statistics of Arkansas for the Period 1880-1935."

In a letter of transmittal to Gov. Carl E. Bailey, Dr. Branner pointed out that the compilation reveals that from 1880 to 1921 Arkansas's mineral production was a story of slow growth from a value of $33,535 to $22,515,412.

From 1921 to 1925, due almost entirely to the discovery of oil in southern Arkansas, the value rose to $87,185,532. Following 1925, however, due chiefly to the depletion of the oil fields, the value dropped to only $12,710,203. Production and value then started an upward swing and in 1934, the last year for which figures are given, the value was $16,081,642.

Covers 14 Months.

Compilation of the material in the circular extended over a period of approximately 14 months and is said by Dr. Branner to represent the first complete and detailed compilation of statistics on mineral production in Arkansas which ever has been made. It involved examination of published and unpublished statistics of the U. S. Geological Survey and the U. S. Bureau of Mines, and all state severance tax and sand and gravel sales records.

"It is interesting to note," Dr. Branner wrote the governor, "that, in the 48 states the rank of Arkansas in the aggregate value of mineral production rose from thirty-eighth in 1905 to seventeenth in 1925, and declined to twenty-seventh in 1933. This variation was due almost entirely to the rise and decline in oil production.

"The figures clearly indicate that Arkansas has been and is primarily a producer of fuel minerals. During only three of the 55-year period from 1880 to 1934 has the value of fuel minerals (coal and natural gas in this case) dropped below 50 per cent of the total annual value of minerals produced."

The compilation is replete with graphs, charts and tables. Production of the many minerals in the state by kind, and by counties is shown, as well as figures on severance taxes collected in the years since the tax was established.

An interesting table is one which shows the comparative value of agricultural, timber, mineral and manufactured products. In 1935, the last year shown in this table, the value of agricultural products was 71.05 per cent of the total, manufactured products were valued at 15.84 per cent, mineral produced 7.42 per cent and timber 5.6 per cent. The aggregate value of the four classes of products was $171,162,402. This compares with a record value for the four classes of products, set in 1919, of $619,988,836.

Highways

Safe Driving Discussed By Engineers

Gazette 1-24-37

The hows and whys of safe driving and principal causes of fatal accidents on highways and streets were discussed by H. D. Booth, traffic supervisor for the state Highway Department, at a meeting of the Engineers Club at the Freiderica hotel yesterday.

"It was argued once that, left to their own advices, highway fools eventually would kill themselves and each other," he said. "It has since been discovered that they kill off safe drivers more frequently than themselves."

Asked what is now officially considered the "maximum safe driving speed," Mr. Booth replied that it all depended upon too many things: road conditions, volume of traffic, conditions and type of vehicle and whatnot, to say, but that from 50 to 55 miles per hour was considered a maximum safe driving speed by many highway officials.

W. W. Zass, president of the club and chief engineer for the state Highway Department, said that present day highways are designed for speeds around 60 miles per hour, and would, in cases of extreme emergency, be able to handle speeds up to 80 miles per hour.

Code Needed.

Mr. Booth emphasized need for use of a uniform traffic code, especially in hand signals for drivers. He said that statistics indicate that a large portion of automobile accidents are caused by a comparatively small group of drivers.

C. H. Ray reported on his communication with officials of the State Federation of Labor and the state Chamber of Commerce about proposed workmen's compensation legislation for Arkansas, and said that he would invite representatives of both organizations to the next meeting of the club to discuss such legislation.

The club also discussed plans for the Arkansas Engineers Club annual meeting here next month.

Industrial

ARKANSAS HAS WIDE VARIETY OF OFFERINGS

Manufactured Products Could Build and Furnish Modern Home.

Democrat 1-31-37

Inspired by the old saw that "a fence can be built around Arkansas and it could live in luxury," a Little Rock manufacturer recently started some figuring and discovered that Arkansas manufactured products could be used exclusively to build a house and furnish it.

Briefly, his computations amounted to this:

Brick and tile for the exterior and roof could be obtained for a very modern dwelling from the industry at Malvern or from any of several other Arkansas manufacturers.

Almost any variety of wood from the type used for framework to the finest hardwood flooring can be purchased from mills within the state who obtain their raw materials from Arkansas forests.

Cement and material companies operating in almost every large community in Arkansas can be depended upon for plaster, mortar and concrete. Cement for the concrete mixture is also manufactured here.

Many fine metal works within the state can furnish anything from the stock metals needed for construction work to the art metal which is being used extensively in modern building.

Upon completion the house can be furnished with furniture which is manufactured in Arkansas of wood from Arkansas foretss.

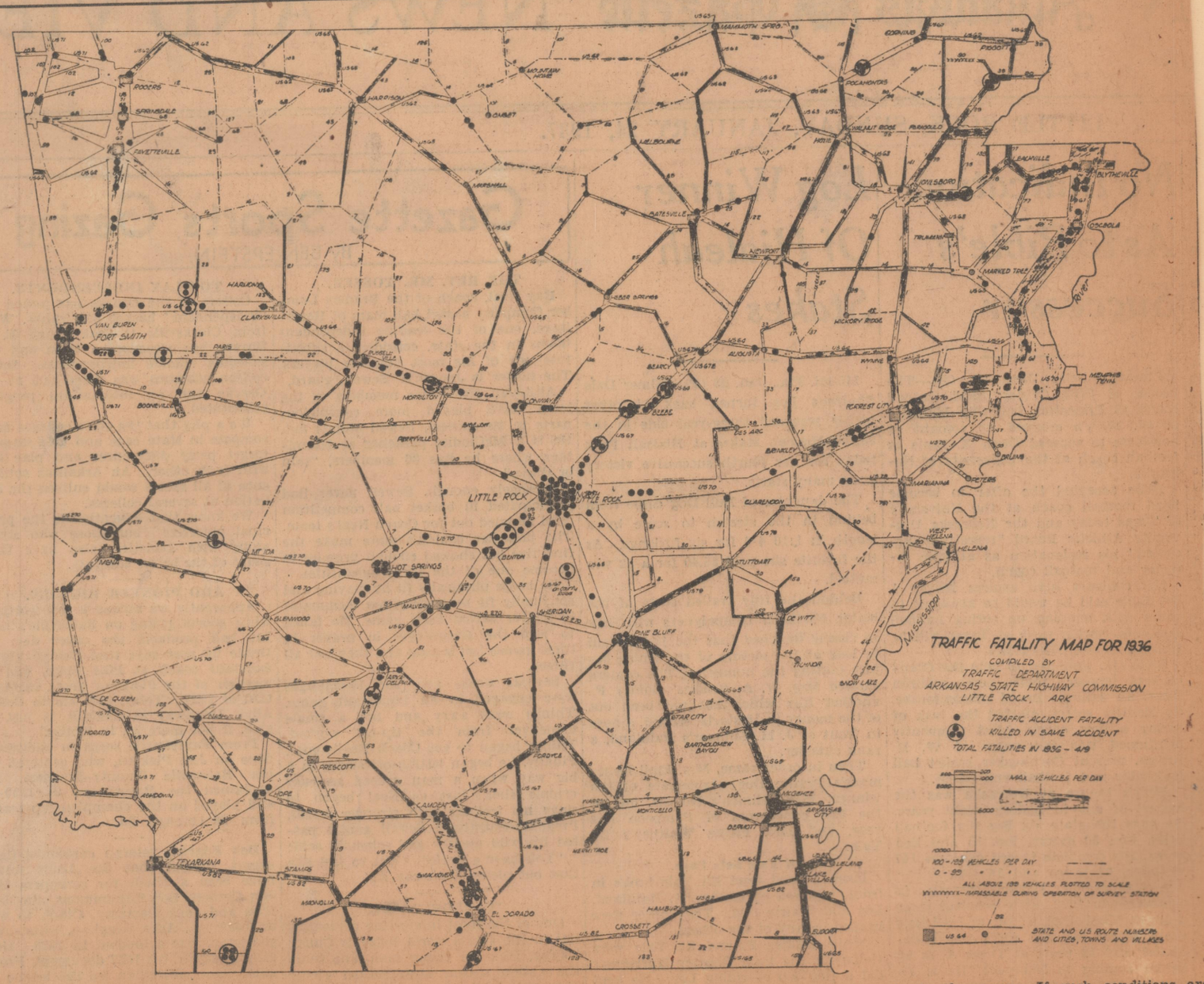
Pottery, brooms, rugs, cotton textiles, paints and many other items necessary to the modern home can be purchased in local stores. They, too, have been manufactured in the state.

Going a step further, light can be furnished with electricity furnished by hydro-electric dams powered by the reserve waters of Arkansas streams. And the new home can be heated with gas from Arkansas' large gas wells.

As for food . . . everyone knows that Arkansas can produce a "square meal."

WHERE 419 PERSONS DIED

Gazette 1-24-37



This traffic fatality map, prepared by the state Highway Department, shows where the 419 fatal highway accidents occurred in 1936.

The varying widths of highways indicate traffic density. The distribution of fatal accidents shows that a greater part of them occurred on highly improved highways carrying heavy traffic.

Highway officials attribute this largely to increased hazards in heavy traffic, but believe that part of the fatal accidents on the state's best highways were due to relaxation of watchfulness when drivers get on a good road.

The 419 fatal accidents in 1936 exceeded fatalities in 1935 by 28, and those of 1934 by 72.

Multiple fatalities in the same accident are indicated by dots within a circle. There were about 20 such accidents in the state. The worst occurred near Benton Christmas Eve when five persons were killed or burned fatally when a car crashed into a gasoline station pump.

Copies of the map have been sent to all district highway engineers, who will check locations of the accidents to determine if physical hazards contributed to the causes. If such conditions are found, they will be removed or remedied.

The department plans to increase its program of installing reflector signs at dangerous curves and on bridge abutments. Engineers said that considerable difficulty has been experienced in keeping reflectors on bridge abutments. Thoughtless persons have removed or broken scores.

VAST STORES OF RAW MATERIAL OFFER ARKANSAS "OPPORTUNITY OF FUTURE" IN MANUFACTURING

Democrat 2-6-37

Despite full realization by her leaders that industrial development in Arkansas is her economic opportunity of the future, comparatively few of the hundreds of natural resources offered by this state have been utilized.

Endowed with a supply of minerals and other raw material equalled by only a few of the other states, Arkansas has yet to take full advantage of her natural advantages.

One well-known Arkansas economist explained the state's slow industrial growth in the past as due to "several adverse factors."

"The main explanation of the slowing down of growth is that, as our timber supply waned, we did not shift fast enough to other kinds of manufacture," he said. "Now we are sending vast sums out of the state for many things we might make from our own raw materials with our own labor."

Many of the familiar and obvious industrial opportunities in Arkansas have been listed by the State Planning Board.

With one of the largest cotton-producing areas in the world within its own borders, Arkansas could develop a great cotton textile industry. Naturally there are several adverse factors to be overcome, such as certain taxes now in effect and rail rates to the Eastern and Northern markets. But the vast reserves of power, fuel and raw materials near at hand are sufficient to overcome this handicap.

Within the state there is already one community where cotton is taken from the stalks in the fields, to the gin and compress, through the various phases of manufacture and turned out as a cotton textile . . . all within a radius of five miles. This is exemplary of what might be done with the cotton industry in Arkansas.

Arkansas furniture is rapidly finding its way onto the preferred list in American markets. There is still much room for further development and progress. With a huge supply of soft and hardwoods at hand, furniture manufacturing in this state has every chance of becoming one of the greatest in the United States.

Southern industrialists have long looked at Arkansas as one of the great potential paper manufacturers of the South. Forests of rapid-growth pine furnish sufficient raw material to enable Arkansas to become a leader in the manufacture of many kinds of commercial paper. At the present time two large paper mills have been built in the state, but both manufacture only one of the many kinds of paper demanded commercially.

Clay products from Arkansas have found their ways into all parts of the world. Growing steadily during the past decade, the state's pottery and other clay products industry has become a major industry.

Depending for years on ancient methods of manufacture, Arkansas's pottery factories suddenly began modern research. Designs and methods of manufacture were changed and modernized. There was an immediate new demand in world markets for the new and beautiful product. Now most of the pottery manufacturers are working at full blast to supply the demand.

One of the greatest demands in America is for wooden toys and novelties. Refuse timber from many of the lumber mills in Arkansas could furnish the raw material for a development and manufacture of wooden trinkets to supply a part of the annual winter demand for toys.

Led by a rapid growth in the tomato canning industry in northern and eastern Arkansas, people in many portions of the state are looking with favor toward canning for shipment and sale in the North and East of many of the state's vegetable and fruit products.

Arkansas's manufacturers must take full advantage of the opportunities offered to keep abreast of the new demands. If they had grown as fast from 1910 to 1929 as they did from 1890 to 1910, they would have employed that year 135,000 workers instead of the actual 44,121 they did employ.

Many Minerals Found in Arkansas

Dem. 1-10-37

This map prepared by the State Planning Board, shows the variety of minerals found in Arkansas.

$87,000,000 Value Placed On Resources

Production Brings Big Tax Income Annually to Government.

Survey Is Favored

Dem. 1-10-37

Planning Board Urges Fund to Continue Exploration.

Arkansas's mineral products increased in value from $1,500,000 in 1880 to $87,000,000 in 1935, and these products paid $19,000,000 in taxes to state, counties and cities during the 10-year period 1922 to 1931, inclusive, according to facts revealed in the annual report of the State Planning Board.

This income to the tax units, amounting to about $1,900,000 annually, was approximately one-tenth of the state's annual income. More than 8,000 people were given employment in the mineral industries during the last year, receiving $8,210,000 in salaries.

The state has been and will probably continue to be primarily a producer of fuel mineral, the production of which amounted to $372,042,000 in the 14-year period between 1921 and 1934 inclusive. However, the value of metallic minerals amounted to $36,213,639 for the 35-year period between 1880 and 1934. Of this sum bauxite used in the manufacture of metallic aluminum represents 72.2 per cent of the total; zinc, 14.6 per cent; manganese and magneferous ore 8.9 per cent; lead, 0.6 per cent, and quicksilver, antimony, iron and silver ores 3.7 per cent.

The report continues:

Variety of Minerals.

"Since the character of minerals found in any given area is dependent on the types of the rocks from which the minerals are derived, Arkansas is particularly fortunate in possessing the broad diversity of rock types which have been described, as it is this diversity which is responsible for the variety of minerals found.

"In the lowland (Gulf Coastal Plain) portion of the state are found the fuel minerals: oil, natural gas, and lignite; and the non-metallic minerals: clay, marl, chalk, fuller's earth, sand and gravel. No metallic minerals are present in important amounts.

"In the highland (Paloozoic) region of Arkansas are found the fuel minerals: coal and natural gas; the metallic minerals, the more important of which are: quicksilver, zinc, lead, manganese and antimony; and the non-metallic minerals: limestone, marble, dolomite, glass sand, sand and gravel, whetstone rock, shale, and slate.

"The crystalline or igneous rocks, although of small areal extent, have been and are the source of important minerals. These are bauxite, syenite, or "granite," titanium and diamonds."

The report suggests that the minerals most promising for exploration and development at the present demand and prices are petroleum, especially in the southern part of the state, quicksilver, bauxite, bentonite, and fuller's earth. Minerals that bid fair to yield profits, but development of which at the present demand and price is dependent on the character and location of the deposits, are: coal, lignite, antimony, titanium, asphalt, clay, diamonds, gypsum, limestone, phosphate, tripoli, barite, slate, lead, silver, manganese, bentonite, and fuller's earth.

Favor Survey.

"A state geological survey may render great assistance to industry by leading the way in basic research to the development of new mineral industries. Although it is true that the development of many of our mineral preserves is at present marginal as to profits, the fact remains that the profits in the mineral industry are determined by present methods of extraction, preparation, and use. If researches are made into the character of our various clay, bentonite, and fuller's earth deposits, it is not improbable that certain new and unknown qualities in these earths will be discovered which may, in turn, increase the value of the raw material and the profits to be realized from its production. This also applies to research in the shales and slates, limestones and dolomites. Researches in Illinois on the siliceous limestones resulted in the development of a rock wool industry there. Coal researches as to the chemical character of Arkansas coals may be of substantial value to the coal producers. Researches into petroleum production, the study of such items as flowage through oil sands, sub-surface structure, and the chemical and paleontological character of well cuttings, will be of unquestionable value."

The report makes the following recommendations relative to the development of the mineral resources of the state.

1. The legislature should provide sufficient funds for the state geological survey to carry out its program of exploration and inventory of the mineral resources of the state. This has not been done heretofore, but is very necessary in view of the need "for the development of all wealth-creating resources within the state."

2. Especial study of the state's petroleum resources because of their importance as a source of revenue, employment and wealth.

3. Investigations should be accompanied by technological research which has for its purpose the fullest co-operation with industry in working out the technical problems in developing the mineral resources.

Arkansas Remains Producer of Fuel Minerals Primarily

Dem. 1-10-37

Arkansas has been, and probably will continue to be for a long period, primarily a producer of fuel minerals, according to recently compiled statistics.

"During only three years of a 55-year period has the value of the fuel minerals (the aggregate of coal and natural gas in this case) dropped below 50 per cent of the total annual value of minerals produced. This was from 1915 to 1917, inclusive, during the period of abnormal prices for metallic minerals which was caused by the demands during the World war.

Breakdown of Arkansas's Mineral Values Proves Fuels Are Predominant

Democrat 2-28-37

A major consideration of those interested in Arkansas industry pertains to the profitable development of the state's mineral resources which has taken place within our economic system.

A perspective of the development which has taken place and an understanding of its trend may be obtained from a study of the 55-year production record from 1880 to 1934, inclusive, according to George C. Branner, state geologist.

The following conclusions, which appear to be outstanding, are based on a study of the figures set forth in a recent comprehensive survey by Dr. Branner:

"The relative values of the fuel, non-metallic, and metallic minerals produced during a 55-year period are expressed comparatively as percentages by the figures 82.2, 12.8 and 5.0," according to Dr. Branner's report. The respective values are $600,827,466, $94,155,655 and $36,213,639, a total of $731,156,760.

Arkansas has been and probably will continue to be for a long period to come, primarily a producer of fuel minerals. During only three years of the 55-year period has the value of the fuel minerals (the aggregate of coal and natural gas in this case) dropped below 50 per cent of the total annual value of minerals produced. This was from 1915 to 1917, inclusive, during the period of abnormal prices for metallic minerals which was caused by the demands during the World war.

The importance of petroleum is demonstrated by the fact that, during the 14-year period from 1921 to 1934, inclusive, following the discovery of petroleum in Arkansas, the value of its production totaled $372,042,000, or 50.8 per cent of the vlue of all minerals ($731,156,760) produced since 1880. The remarkable rise in the value of fuel minerals has been due almost entirely to the discovery of petroleum in 1921 and the subsequent development of some 14 oil fields.

During the 55-year period, the value of non-metallic minerals ($94,115,655) was 159.9 per cent greater than that of the metallic minerals ($36,213,639). During only two years of this period did the value of metallic minerals produced exceed that of the non-metallic minerals. These were the war years of 1916 and 1917, during which exceptionally high prices for alumnium, manganese, zinc and lead prevailed.

The value of non-metallic minerals has increased at a slow and fairly steady rate since 1889, the value of the 1929 production ($5,992,799) being the maximum for the entire period.

Of the value of metallic minerals ($36,213,639) reproduced in Arkansas during the 55-year period, bauxite, used in the manufacture of emtallic aluminum, has represented 72.2 per cent of the total; zinc, 14.6 per cent; manganese and manganiferous ore, 8.9 per cent; and lead, 0.6 per cent. The remaining 3.7 per cent is made up of quicksilver, antimony, iron, and silver ores. The production of metallic minerals was strongly influenced by the high prices of metals during the war, the maximum all-time production of zinc ore occurring in 1916, lead and manganese ores in 1917, and bauxite in 1918. The maximum production of manganiferous ore, however, occurred in 1929.

In order to form a perspective as to the importance of the mineral production in the state with reference to the production of other basic commodities, the following information is vital. The value of minerals produced has risen from one and one half million dollars in 1880 to more than 87 million dollars in 1925, which was the year of maximum oil production. This figure for 1925 represented more than an eighth of the aggregate value of all the basic commodities in the state, which include mineral, agricultural, timber and manufactured products. Or, comparing the rise of mineral values to agricultural values exclusively, we find that, in 1899, the mineral values were a little more than one-fiftieth of the agricultural values, while in 1925, this proportion had risen to about one-third.

Let us consider for a moment the importance of the mineral industries to state, county, and city governments. Tax income immediately traceable to this source are the severance tax, the sand and gravel tax, the oil and gas well permit fee, the corporation tax on mineral industries, and real and personal property taxes applied to such industries. It is estimated that, during the 10-year period from 1922 to 1931, inclusive, the mineral industries paid to state, county, and city governments approximately 19 million dollars. This is an average of about $1,900,000 per year, or roughly, a sum equivalent to about 10 per cent of the total state income. This is a remarkable record for an agricultural state. It should be remembered, however, that about 90 per cent of the above amounts was paid by the oil industry.

The number of persons employed by the mineral industries in 1935 was 8,025. The wages paid them was about $8,210,000, and this furnished support for about 40,000 persons.

It is probably fair to assume that at least one half of the total income received from the sale of mineral products in the state is expended within its borders. It is, therefore, evident that mineral production within the state is beneficial to the state, county, and city governments, to employment, railroading, merchandising and banking.

Greater Oil Research Seen As State Need

Democrat 2-28-37

Report Outlines Territory for Intensive Exploration Efforts.

The petroleum industry is the giant of all the Arkansas mineral industries. It has paid more to the state in taxes, has brought more people into the state, and has caused the expenditure of more money within its borders, than has any other single mineral industry.

"It is obvious, therefore, that no stone should be left unturned to encourage systematic and legitimate prospecting for new oil fields, to make up for the progressive depletion of the present producing areas," according to recent recommendations released by the state Geological Department. "It is to be noted that over 372 million dollars' worth of petroleum has been taken from the state from 1921 to 1934, inclusive. This is about two and one-third times the value of its nearest competitor, coal, which has been produced continuously since 1880.

"The use of new prospecting methods (principally geophysical methods) and uses of new types of drilling equipment, will probably play an important part in the discovery of new fields in southern and possibly eastern Arkansas.

"The recent discovery of commercial quantities of 43 gravity oil, together with a daily flow of about 40 million cubic feet of gas near Snow Hill, in southeast Ouachita county, in the Phillips' Petroleum Company's Reynolds No. 1 well, is a matter of greatest interest, and the new producing horizon may prove to have very important bearing on the future oil and gas production in southern Arkansas.

"It is, to some degree, possible that oil may be discovered in the northern portion of the Arkansas river valley, in addition to the gas already found there, and deep prospecting is to be encouraged in that area."

Lion Company Plans Pipeline To Ouachita River.

Gazette 3-4-37

El Dorado, Ark., March 3 (AP).—The Lion Oil Refining Company announced today that it had started construction of a four-inch pipeline to the Ouachita river for barging of gasoline.

The 12-mile line will extend from the refinery here to a point near Calion where storage tanks will be erected. It is scheduled to be completed between April 15 and May 1.

Gasoline will be shipped by barge down the Ouachita and then up the Mississippi river to Greenville and Memphis.

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RAW MATERIAL SUPPLY TERMED VITAL U. S. NEED

Building Up Stocks Urged.

Lafayette 3-9-37

Washington, March 8 (AP).—The Army and Navy Munitions Board has advised that precautionary production and control measures be taken to guarantee any adequate supply of 23 vitally necessary raw materials in any emergency. In addition to the "essential" war munitions, the army-navy board's survey has found, conservation measures will "probably be necessary" to insure a continued flow of 52 "critical" materials vital to both the nation's armed forces and civilian population. Several years of study preceded the recommendations.

The survey has revealed the United States is dependent in whole or in part on foreign nations for the following "strategic" or most important materials:

Aluminum, antimony, chorium, coconut shells (used in making charcoal for gas masks), coffee, hides, iodine, jute, ferrograde manganese, Manila fiber, sheet mica, nickel, nux vomica, opium, optical glass, quicksilver, quinine, rubber, silk, sisal, tin, tungsten and wool.

"Critical" Materials.

Next in importance on the army-navy board's list have just been placed the following "critical" materials:

Abrasives, ethyl and methyl alcohol, ammonia, arsenic, asbestos, asphalt, cadmium, camphor, castor oil, chlorine, copper, copra, cork, cotton linters, cryolite, flaxseed, fluorspar, graphite, helium, hemp, iron and steel, kapok, lead, lumber, machine tools, magnesium, molybdenum, nitric acid.

Oakum, palm oil, paper and pulp, phenol, petroleum, phosphate, platinum, potash, refractories, scientific glass, shellac, sugar, sulphur and pyrites, tanning materials, titanium, toluol, turpentine, uranium, vanadium, wheat, wood chemicals, zinc and zirconium.

While all these basic materials are as important in their way as men and money in war, authorities said the United States has done little to guarantee adequate supplies in an emergency.

U. S. Doing Nothing.

Congress did, however, last year enact a law giving the president discretionary power to embargo export of tin scrap after large purchases by Japan had threatened American reserves.

The government has not assisted actively in accumulating stocks of materials for wartime use.

While acknowledging that political and economic difficulties stand in the way, military authorities contend that adoption of a peacetime program to insure adequate raw materials in wartime would go a long way toward making the United States self-sufficient.

That policy, in the expert's opinion, should embody:

Accumulation of war stocks by direct purchase, by tariff concessions, by accepting them in partial payment of war debts or by stimulation of domestic mining. The experts also would like to see the government encourage the development of substitutes.

The National Resources Board's survey revealed that other world powers are taking similar precautionary measures to protect their position. The board's report says:

"France requires importers of nitrates to keep a three month's supply in stock and has forced erection of petroleum refineries through her oil import regulations. There is reason to believe that Great Britain, Russia, Japan, Germany and France have all imported raw materials for making ferro-alloys [of vital importance in war munitions] in quantities beyond the normal requirements. The United States has taken no direct precautionary steps to assure itself in a similar way."

State Geologist Studies Minerals for U. S. Army

Dem 2-15-37

Dr. George C. Branner, state geologist, who also is a major in the Quartermaster Reserves of the United States Army, has been asked by the assistant secretary of war to make a study of the antimony deposits in the state as an inactive duty assignment in the organized reserves of the army. Dr. Branner was given his choice of several minerals on which the army officials seek data relative to both military and civilian uses for the mineral. He selected antimony because of the deposits of this mineral in Arkansas.

Mining Engineers Survey Mineral Deposits of State

Marshall—Allan Robinson and S. C. Wilson, mining geologists from Memphis, are in Searcy county investigating and testing the ore being found in this section. They are making tests at the Excelsior, Roaring Hollow, David Crockett, Lucky Dog and San Juan mines, which are all promising zinc properties near St. Joe. Democrat 4-4-37

Farm Worker Makes Find

Fordyce Democrat 4-8-37

Plow Hits "Rock" That Turns Out to Be Petrified Tree.

Fordyce—A curious object found on the Oscar Estes farm, eight miles east of Fordyce recently, turned out to be the stump of a petrified tree.

Otis Ensley, hired worker on the farm, struck something flinty with his plow as he was working in an old, sandy field that has been in cultivation for at least a hundred years, and where trees or rocks are not found.

He believed at first that some one had buried a big stone with money underneath it, so proceeded to dig frantically to dislodge it. After digging for several feet with no success, he hitched his team to the top of it. The team could not budge the object. He then decided to do some excavating, and with the help of neighbors dug down 15 feet and the end of the thing is not yet in sight.

It is a huge petrified tree, three feet in diameter of uniform size from top to bottom.

Dr. George F. Branner, state geologist, cleared the mystery as to what it is by saying that chips from it are fragments of petrified, or silicafied, wood, but the mystery of how it got where it is, and why it is in an upright position, buried about 12 inches from the surface are questions not cleared up.

A number of persons have visited the Estes farm to see the strange tree. Petrified pieces of wood are not uncommon in this part of the state, but a log or tree of this size and position has never been seen before.

"Crosswise slices of the stone would make beautiful table tops," said a bystander when asked what use it might have.

If it is ever dislodged it probably will remain on the farm as a curiosity for sightseers.

Farmer Unable to Budge This 'Rock'

PETRIFIED STUMP.

Several Opinions Rendered By Attorney General's Office.

Gazette 4-10-37

Mineral rights should be confirmed in Chancery Court in the same manner as tax-forfeited land and city or town lots, the attorney general's office notified Land Commissioner Otis Page yesterday.

Assistant Attorney General T. Hadden Humphreys wrote Mr. Page:

"It is our opinion that mineral, oil and gas rights are subject to confirmation the same as the fee in lands certifited to the state land commissioner. In view of the fact that Section 6596c of Castles' 1931 Supplement provides that the commissioner shall sell such rights at the price thereafter provided in Section 6596b for the sale of town and city lots, the attorney's fee should be based on town lots rather than acreage description."

Unique Indust

Products Include Titani and Phonog

Democrat 4-18-37

Output of State's Labor and Energy Used by People in Far Corners of Earth

By WILLIAM JOHNSON.

"If I got so I knew that much," said Mark Twain when he was told the duties of a river pilot, "I'd be able to raise the dead, and wouldn't have to steer a boat for a living." That idea fits other situations, too, as, for instance, picturing the industries of Arkansas. To set forth all the things our people do for a living, you would need more information than anybody has, and probably more than anybody should be allowed to possess. From cotton to corn-cob pipes; from pine lumber to pearls; from bauxite to cunningly woven baskets; from paper and melons and window glass and barrel staves to pottery and mercury and wine and ginsing and bedsteads; runs the fascinating range of products turned out by our workers and shipped to markets near and far. There is hardly an inhabited nook of creation where you wouldn't find the people using something that came from Arkansas. In the roaring factories of the East; in the steaming jungles of Africa; in the tents of Sahara-desert nomads and the palm-thatched huts of South Sea islanders; you would see cotton or minerals or axe-handles or oil or buttons or some other article that originated in your home state.

With many of the products Arkansas contributes to the world-circling streams of trade, you are familiar, at least in a general way.

You know that our cotton travels through American and foreign mills into dwellings reaching from Little Rock to the frozen edges of Little America and the Arctic ocean; that our timber is built into homes across the continent, into ships that sail the seven seas, and cars that zip through all the streets of the globe and are cussed by pedestrians in every Christian and heathen tongue; and that our petroleum and bauxite in their various commercial forms, are exchanged up and down the earth for dollars, francs, kroners,, florine, roubles, rupees, yens or whatever kind of cash the customer may use.

And you doubtless could dredge up from your memory important facts about other products, such as cotseed oil, rice, fruit and coal, that go from Arkansas to satisfy far-flung demands.

But scattered about the state are many small industries that you may not have much information on.

Mined at Magnet Cove.

Take, as a random shot, titanium. Do yu know what it is, and where it's produced in Arkansas, and the uses made of it?

Well, neither did the scrivener of this piece till he talked with Dr. George Branner, state geologist, who is a living encyclopedia on such subjects—but a lot pleasanter to consult than any encyclopedia is. Titanium is a mineral, and a moderately rare one. There are only a few places in the world where it is found in quantities that pay to mine it, and one of these places is Magnet Cove.

At Magnet Cove the Titanium Corporation of America has a plant in which titanium is washed out of "rutile," a kind of broken down rock. The mineral looks like course gun-powder, but is much heavier. A good deal of it goes to steel mills in the East, where it serves this valuable purpose; a small amount of it melted in with steel prevents gas bubbles from forming in the metal. That improves the quality of the steel, enables manufacturers to get higher prices for it, and ought to make them grateful to Arkansas for the profit our titanium clinks into their coffers.

Titanium also appears on the market in tip-top paint. A curious thing in this employment of the mineral is that while it comes from the Magnet Cove plant as shiny black crystals, it makes a paint which is snow white. Here the scientist has unriddled another of the wonders that Mother Nature hid in so much of her handiwork. He discovered that when the black titanium crystals are broken down into a non-crystalline form, the mineral is a pure, silvery white.

May Strenghen Your Car.

So, the tough steel frame of your car, or the gleaming whiteness the painter gives your house, may be due in part to this odd mineral at Magnet Cove, which was deposited in the rocks there aeons ago by the action of melting heat deep in the earth. And in other ways, too, you may be indebted to Magnet Cove titanium. For the mineral is used in dyes, in coloring pottery and in making artificial teeth.

Another interesting small mineral industry is operated at Rogers. It is the manufacture of tripoli, by the Corona Products Company, Inc. This material is a powder, which looks like wheat flour, made by grinding up what the scientific books haul off and stun the reader by calling "a silaceous deposit occurring in friable masses." In simpler speech, tripoli is a kind of decayed stone smashed into dust-like fineness. It is used in polishing, and as a "filler" it enters into the manufactures of paint, insecticides, phonograph records and a lot of other things.

One more mineral industry, now an infant, but which may become an enterprise of robust dimensions, is he recently established mercury, or quick silver, mining in the Pike county region of southwest Arkansas.

Mercury was discovered there, near Cowhide creek, in 1931. For half a century prospectors had been searching the state for cinnabar, the rock ore from which mercury is obtained. While they hunted for it, Pike county farmers were building fences of cinnabar. Doubtless a good many of them had examined the ruby-red crystals in the rocks they piled up, and wondered what it was. A boy in the hills of Pike county decided to find out. He took a piece of the rock to a prospector, who sent it to a chemist. The red streaks in the rock proved to be mercury.

Mercury Must Be Hoed.

Now, on the Little Missouri river, north of Murphreesboro, and on Antoine creek, south of Amity, operators are extracting the mercury, and of late have been getting handsome prices for it. They break the rock ore and heat it in huge retorts, which hold up to 20 tons of the red-streaked stone. The mercury passes off as a vapor that goes into condensers, where it cools into a mass of tiny drops. These drops are mixed with water, and the mixture comes from the condensers as "sludge," a gray, soft mass that looks like plaster ready for applying to a wall. But it's a whale of a lot heavier than plaster. If you were to try to pick up a bucket of sludge, you would think it had been spiked to the floor.

The sludge is hoed over with lime, which absorbs the water. Then the droplets of mercury run together in a silvery, liquid-like form, as you see it in the tube of a thermometer—which you'll be peering at plenty before long, with a corrugated brow and a disapproving expression. Mercury goes to market from the producing plants in flasks weighing 76 pounds, and now brings around $90 a flask. It doesn't take much mercury to weigh 76 pounds, for it is 13 and one-half times heavier than water.

Mercury has almost as many uses as a farmer can find for hay-wire, which, somebody has said, holds the Western states together. It is put in thermometers and barometers, to tell us how sizzlesome or frigid the temperatures are and to indicate tomorrow's weather. Mercury also enters into medicine, notably as calomel. Years ago in this country, calomel and quinine and prayer were the chief resorts in time of trouble, serving our granddads pretty much as the WPA, AAA and other federal alphabetical agencies do now.

For Mirrors and Rifles.

Mercury is employed in gold mining, too. It has an affinity for gold, and will mix with it at the slightest chance, as eagerly as a politician sidles into a flock of voters. A little mercury is shaken into the gold ore, and it seizes onto the gold and holds it with a miserly clutch until it is driven off with heat, to be used in the same way again.

Mercury is put on one surface of glass to make mirrors of it, and is a necessary ingredient in the exploding "primers" in gun and cannon cartridges. Thus it helps to build up human vanity and makes possible the wholesale slaughter of modern warfare. Some of the fierce fighting in Spain of late has been for possession of an important mercury mine.

A new utility for mercury, which some of the experts think will open a big demand for it, is to replace water in steam boilers. It is serving that purpose in the huge plant of the General Electric Company in Schenectady, N. Y. They have two boilers, each driving a turbine engine, hitched together with a condenser, and sealed air-tight. The mercury—155 tons of it, valued at $200,000—circles from one boiler to the other, then through the condenser back to the first boiler.

To boil mercury a temperature of 677 degrees is required, or about five and one-half times the temperature of Main street on the average August afternoon. The vapor from the mercury heated in the first boiler, drives one of the turbines, then flows to the next boiler, where it heats water and creates steam for the second turbine, and after that passes into the condenser which returns it to the first boiler to repeat the cycle.

A look into the varied industries of Arkansas gives you a feeling of pride in your state. You swell up a little, as you have reason to, over its richly diverse resources. You feel a glow that is inspired by the ingenuity many of our people are showing in developing the opportunities nature lavished on us so opulently.

Export Workers, Too.

But you also have a sobering thought. You see that we are sending away too much of our raw material to be manufactured in other states. Getting out this material doesn't bring us very gilded rewards or create the largest amount of work. The big returns and the heavy payrolls are found in the far-flung industries that work up our raw materials. And because we don't ourselves create enough finished goods from our ores and timber and farmstuffs, we lack jobs for a large number of our young men and women, and have to export them as well as raw materials. We have to send them away to find jobs elsewhere, perhaps in manufacturing the very products we sell to other states and then buy back in the form of industrial goods.

One small example of this situation is afforded by our sales of novaculite, a stone found in Garland county and adjacent territory. It is used for whetstones, making the finest ones to be had anywhere. Long ago, before Arkansas was a state, this stone was mined and floated down to New Orleans, to provide whetstones for the artisans of that era and to sharpen the useful hunting knives of pioneer times. Today it still provides whetstones for putting a keen edge on modern cutting tools.

But the whetstones aren't made in Arkansas. The stone is made in blocks of suitable size, and shipped to factories in other sections, where it is fashioned into the completed article. That plan provides comparatively little labor here, and far more somewhere else.

Makes Eastern Jobs.

As an example, one company employs only a handful of men near Hot Springs in mining the stone, but gives work to around 70 in its Eastern plant. This instance, not so very important in itself, illustrates, nevertheless, the disadvantage Arkansas is under in selling chiefly raw materials.

Timber, up and down the state, is the basis of a lot of fascinating manufactures. Some are small, yet uniquely interesting. One of this kind is the production of duck callers, by a man in Jonesboro. His business isn't so small, either—probably is a sizeable one, as the duck-caller industry goes, for he turns out thousands of these aids to the hunter every year. He ships them widely over the United States.

An Arkansas wood-working industry that looms on the eye and captures the imagination when you look into it, is handle turning. The state has several such plants. Consider, as handsomely representing the business, the Sallee brothers' handle factory at Pocahontas. They carve out more than 100 kinds of handles, for axes, hatchets, picks, shovels, hammers, and other tools. The handles drop in carloads from the snarling saws and buzzing lathes, and are sent all over the country and to foreign lands.

Northern lumberjacks swing their axes into tall spruces with these or perhaps other Arkansas hickory handles. In the sunless forests along the Amazon, similar handles drive axes into towering mahogany trees. In the darkness of English coal mines and Singapore tin mines, our hickory handles guide the picks of sweating laborers. On the roads of Russia and Australia, earth and gravel are flung with Arkansas-handled shovels. Watch repairers on New York's Broadway use for their tiny hammers handles turned in the Pocahontas plant, and the Philippine toiler in the sugar-cane fields may wield his machete with a handle from the same source.

Hickory Trees Go Far.

Think of the hickory trees that grow in Arkansas being sent to so many far-separated destinations for such diverse uses, and don't let any pessimist tell you there's no romance in modern business. It's running over with more romance than any six fiction writers could cook up in lives as long as Methuselah's.

The few cases sketched in this story hardly open the absorbing subject of all the varied and often novel industries to be found in Arkansas, and the profusion of goods we contribute to the markets of the world. A book two inches thick could be written on just the odd ways in which the things we send hither and thither come together in far, foreign places. Here is one such instance:

Cotton, grown, we'll say, on a Mississippi county plantation, is shipped across the Atlantic ocean to Liverpool. There it is woven into cloth, and very likely the shuttles in the mill are made from dogwood cut in northwest Arkansas. This wood, light and pliant, is much sought after for that purpose.

And maybe some of the woven cloth, shipped to South America, is worn by a Chilean guano worker who uses a shovel toughened with Arkansas titanium and handled with Arkansas hickory, to shovel up guano which comes back to the Mississippi cotton plantation in fertilizer. But, though that could easily enough happen, it's a guess. The cotton and dogwood meeting in Liverpool is within known facts.

The NEWS

Now that you know "who's who" in the old town, (see the Social Directory) you're going to have to be mighty careful to whom you speak when you greet your old friends downtown.

Lend an ear to this:*

First Young Business Man (Who is a 400-er): "I see you're not in the Social Directory. From now on I guess I'll have to speak to you only in a business manner."

Second Young Business Man (Not a 400-er): "So you're in it eh? Well

To the Bitter End?

According to Mr. Arthur Krock, who has had good facilities for learning the president's views, Mr. Roosevelt will not make any "compromise" on the judiciary bill which does not give him the power to appoint enough judges to insure a decisive majority for Federal wages-and-hour legislation and for crop control.

As regards crop control it might be said, I suppose, that the bill would surely provide a favorable court. In the AAA case there were three faborable judges; the six new ones would overrule the earlier decision

Sevier County Antimony Mines To Be Reopened.

4-19-37

Special to the Gazette.

De Queen, April 18.—The Arkansas Development Company, headed by Edward Poerschke and associates of Moline, Ill., has leased a large block of acreage in the Antimony producing section in the north part of Sevier county, three miles east of Gillham, and moved machinery to the location preparatory to reopening the old shaft known as the "New Discovery" mine.

The company has moved a hoisting machine to the location and has begun construction of an office building and living quarters for officers.

William Fischer of Haysville, N. C., geologist and technical engineer, is in charge of operations at the mine. Headquarters are maintained in De Queen.

Fifty Years Ago 4-19-37

(Arkansas Gazette, April 19, 1887.)

Trading in real estate yesterday was quite active, there being more demand from outside speculators than for several days past. The transactions for the day were about $75,000, the deeds recorded being $17,149. It is more noticeable from day to day that manufacturing is receiving more attention, and new enterprises are springing into existence. Among yesterday's sales was the Dotter property on the corner of Fifth and Main streets, which was sold to James K. Riffel of Kansas City and T. T. Terry of Girard, Kan., for $25,000. Both of these gentlemen are investing largely in Little Rock property. Mr. Perry, who is one of the most extensive operators n the West, is the gentleman who settled up the Jay Gould land trouble in eastern Kansas. He already owns upward of 30,000 acres of coal land in this state.

Mr. Nesmith of the Missouri Pacific system, with a full corps, is now surveying and locating the line from Fort Smith to some point on the Iron Mountain, possibly Hope. One hundred hands are now at work in Tomlinson Gap, 12 miles north of this place, while the same number is at work at Mill Creek Gap 14 miles south on this line toward Hope, and men are to be put to work at Ross mountain, four miles south of here next week.

Yesterday samples of potters' clay were received at the Real Estate Exchange from S. H. Whitthorne of Benton. It was found by Capt. O. C. Atchison one and one-half miles southeast of Benton, and is superior to any that has been seen here.

Petrified Tree Is Broken in Removal

Democrat 4-20-37

Fordyce—The huge petrified tree on the Oscar Estes farm, eight miles east of here, was recently broken off six feet from the top in an effort to get it out of the ground with a tractor.

It is three feet in diameter, of uniform size from top to bottom, and 15 feet long, and was found standing in an upright position 12 inches under the surface of the ground by a worker on the Estes farm, a sandy low field, where trees do not grow.

It attracted considerable attention, and many people visited the farm to see it.

Relics Found at Murfreesboro Sold to Collector.

Special to the Gazette. 4-23-37

Murfreesboro, April 22.—A large collection of Indian relics found by K. W. Harris, farmer, near here, while he was plowing Monday, was sold to a relic dealer of Glenwood today. A collector, who saw the pieces after th sale, said that they were worth about $20 each.

Start On Mineral Survey Sought

WPA

Gazette 4-25-37

Sponsored by the state Geology Department with approval of the state Planning Board and Governor Bailey, plans for a state-wide WPA mineral survey—potentially one of the most ambitious undertakings ever proposed to determine Arkansas' natural resources possibilities—will be submitted to state WPA officials this week.

Confident that a small "proving ground" project will demonstrate the merit of the proposed mineral inventory, thus making less difficult eventual approval of the entire undertaking sponsors at the first submission will concentrate on gaining approval only for a miniature project in the Pulaski district.

Floyd Sharp, state WPA administrator, said yesterday that he will recommend approval by Washington authorities of the "proving ground" project "if I can be convinced it can be worked out satisfactory according to new WPA requirements, which are that 95 per cent of the personnel must be selected from existing relief labor rolls."

Great Possibilities Seen.

Dr. George C. Branner, state geologist, was elated over prospects for realizing the proposal he has advocated for several months.

"From a study of a similar project just completed in Oklahoma, I am convinced that relief labor can be trained by the five per cent of technically-trained men permitted by WPA," he said.

"This is potentially one of the greatest programs the state Geology Department has undertaken. We hope that approval of the small project will pave the way for similar work in the entire state. If this eventually can be obtained and the work carried to successful conclusion, it will provide the state with a vast amount of valuable information and may disclose unsuspected sources of natural wealth."

The survey will include selection and testing of samples from deposits of metallic and non-metallic minerals, agricultural lime, limestone, gravel, sand, rocks, clays and similar substances.

WPA Rules Come First.

Mr. Sharp and Dr. D. Palmer Patterson, assistant WPA state administrator, were "sold" on the mineral survey idea by results from the Oklahoma WPA Mineral Survey.

"It will be a valuable project if it can be worked out to conform to regulations," Mr. Sharp said. "However, the primary purpose of approving a project is to give employment to persons on our WPA rolls.

"If the project will require more than five per cent engineers, geologists and technically trained men, then, regardless of its potential value to the state, WPA regulations would not permit us to approve it.

"If our requirements can be met, however, I intend to recommend the approval of a test survey, probably in Pulaski county."

It is said that a mineral inventory covering the 52,525 square miles of land area in the state would cost more than $200,000.

First approval probably will be for a mere fraction of this amount, since the survey would cover only a small district. It is considered possible that a force of 20 or 25 men could carry on a valuable "proving ground" project.

To Revise Application.

R. C. Beckstrom of Tulsa, director of Oklahoma's project, will be in Little Rock tomorrow and Tuesday to revise the proposed project application to conform to new WPA regulations. Prior to April 15, requirements were for only 90 per cent of workers on a project to be selected from the relief rolls. The original proposal was drawn under those regulations.

Governor Bailey has endorsed the project as in line with his program for a more progressive Arkansas.

L. A. Henry, state Planning Board engineer, said the survey has been sanctioned by the board as in keeping with its efforts to assemble all possible data on the state's resources for long-time planning.

State Will Seek Mineral Survey

Democrat 4-26-37

R. C. Beckstrom, Tulsa, Okla., was scheduled to arrive in Little Rock today to aid state officials complete application for a WPA mineral survey.

Beckstrom directed a similar project in Oklahoma. Dr. George C. Branner, state geologist, said Arkansas would ask for a "proving ground" survey confined to Pulaski county at first. If it proved successful, he said the state would ask that it be enlarged to include all 75 counties.

The survey would include selection and testing of samples from deposits of metallic and non-metallic minerals, agricultural lime, limestone, gravel, sand, rocks, clays and similar substances.

Departments Ready to Aid In Mineral Survey

Gazette 4-29-37

The state Highway and Heath Departments will co-operate with the Geology Department if a proposed statewide WPA mineral survey project, sponsored by the latter department, is approved, Dr. George C. Branner, state geologist, said yesterday.

R. C. Beckstrom of Tulsa, Okla., director of an Oklahoma mineral survey completed recently, is in Little Rock making a final draft of the Arkansas project, which will be submitted to state WPA officials this week.

The survey will include the taking and testing of samples of clays, rocks, sand, gravel, agricultural lime, limestone and metallic and nonmetallic minerals from all sections of the state, as well as the accumulating of data on water supply in every county.

"The Highway Department will lend valuable assistance, if we gain approval of the project, in the testing of various types of road building and maintenance materials," said Dr. Branner. "The Health Department will assist in the collecting of data on drinking water supply."

With The State Geologist

State Capital News May 1, 1937

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Survey of Mineral Wealth Finds Favor.

Gazette 5-2-37

A proposal by the state Geology Department that a state-wide mineral resources survey be made as a WPA project has met with widespread approval. Dr. George C. Branner, state geologist, received a letter from a Pike county resident last week in which the writer said that the original idea of such a survey was his own and had been advanced more than a year ago.

Well, that's rather recent for an "original" idea on the subject, when files of the Arkansas Historical Commission reveal that almost exactly 100 years ago the Arkansas Gazette published an editorial pointing out the need for a mineral inventory of the state.

A similar survey had been completed in a small Eastern state. The editorial said that if such an undertaking was justifiable in that state, certainly it would be worth while for Arkansas to have one.

Surveys to determine natural resources are nothing new—at least, the idea is not. R. C. Beckstrom of Tulas, director of a WPA mineral survey completed recently in Oklahoma and who is assisting in drawing up the Arkansas project, said ancient Babylon, which was quite a city some 2,225 years B. C., recognized the value of a survey to determine its natural wealth.

Incidentally, the WPA report on the Oklahoma project cites findings in that state which, if duplicated or even approached in Arkansas, would make the spending of the $232,000 total estimated cost seem like paying $1 an acre for tax-forfeited oil lands.

Location of a certain type of rock and gravel by the survey saved one county $95,000 on a single road project.

At present, more than half the cement used in Oklahoma is shipped into the state. The survey disclosed that the state has sufficient limestone for cement to pave every north-south and east-west section line.

Limestone of 98.5 per cent purity was found in quantities sufficient to treat every acre of ground in Oklahoma needing such treatment. Another type of limestone was located suitable for the manufacture of rock wool and available in such quantities as to be sufficient to insulate every home in Oklahoma. the report said.

The data obtained by the survey is available to anyone and is being supplied large industrial concerns in the hope that a new manufacturing era may be started in the neighboring state.

Information was collected on water supply and potential water supply in nearly every section of the state. Complete records were made of 79,000 wells

The report says that one of the principal values of the survey, was determination of locations and availability of sand, gravel and rock suitable for use in highway construction. With this information in hand, Oklahoma hopes to obtain cheaper materials as well as effect a savings in the expensive cost of transporting them from distant points.

A lot of folks who have spent a lifetime wondering "what's in them thar hills" in Arkansas may have their answer if the proposed project is put through.

State WPA Will Ask Funds for MineralSurvey

Democrat 5-20-37

Application for $380,000 Project to Be Sent to Washington.

Attaches in the office of Floyd Sharp, state WPA administrator, today prepared to forward to Washington an application for a statewide minerals and underground water supply surveys, it was announced from Mr. Sharp's office.

The survey will cost about $380,000 and will provide employment for more than 500 persons for one year, should the project receive approval by the WPA in Washington.

Details of the project were worked up by Dr. George C. Branner, state geologist, and Robert A. Beckstrom, who assisted in a similar survey for Oklahoma. It is expected that Mr. Beckstrom will be assigned as supervisor of the Arkansas project, should it be approved by the federal authorities.

Under the plans approved by the state WPA administrator, data will be assembled from each of the 75 counties of the state pertaining to road building materials and also other building materials, a general mineral survey, a survey of underground water resources, and the placing of all data assembled on maps.

The federal government through the WPA is asked to contribute $315,003.60 to finance the project while the state will put up $67,128 to be taken from appropriations for the state highway department, the health department and the geologist's office.

It is proposed that the highway department make an analysis of the road building materials and other building materials, that the health department will analyze the water samples taken from each well in the state, and that the geologist's office will provide transportation and otherwise assist with the project.

Much of the personnel for the project would be from the group of skilled workers, 196 of the 542 called for in the project to come from this classification. The work would be handled by 28 supervisors and the state divided into two sections.

Dr. Branner said that when the work in one-half of the state is completed, which will require about six months, a new group will be selected to complete the project, except that the same supervisors will be retained. Special training will be given to the workers before they are sent into each county in the state to assemble the data.

In addition to the minerals survey, a study will be made of caves and other natural phenomena of general interest. The water survey will include springs as well as wells and also calls for the compiling of data pertaining to rural electrification.

Project for Mineral Survey Sent To Washington.

Gazette 5-21-37

State WPA Administrator Floyd Sharp approved and submitted to Washington for final approval yesterday a $382,131 project for a state-wide WPA mineral inventory survey of Arkansas.

Explaining that the project must pass through the hands of Washington WPA officials, the Bureau of the Budget, the president and the comptroller general, Mr. Sharp said it would be at least six weeks before the project can be started, if it meets with final approval. It calls for the state to provide $67,128, or 17.6 per cent of the total cost, and the federal government, through WPA, to provide $315,003, or 82.4 per cent.

It would employ 514 relief workers and 28 non-relief workers for one year. Wages and salaries would account for $307,335, or 80.4 per cent of the total cost. the remaining $74,796, or 19.6 per cent, going for materials, equipment and other costs. The state's entire contribution would be spent for materials, equipment and other costs, only $7,668 of federal funds being used for these purposes.

Cost of superintending the project—$57,000, would be borne by WPA, as would the following amounts for the type of labor specified: Unskilled, $22,488; intermediate, $65,925; skilled, $109,257; professional or technical, $52,665.

Joint Sponsorship.

The project is sponsored by the state Geology Department, with the Highway Department, the Health Department and the state Planning Board participating. The state's share of the expense would be obtained from appropriations for the three departments.

R. R. Beckstrom, who directed a similar survey in Oklahoma on which the Arkansas project is based, is expected to direct the survey. Dr. George C. Branner, state geologist, would be state supervisor.

Purposes of the survey will be to determine the location and extent of road and building construction materials, mineral and other accessible natural resources, including location of state water tables, available quantities of mineral deposits and their adaptability to commercial uses.

Holland's Vol. 56, No. 5, May, 1937

Up in Arkansas

By ARTHUR COLEMAN

DECORATED BY JERRY BYWATERS

THE way some folks talk, you'd think Arkansas had only one industry, owned and operated by a six-foot-something Van Buren boy named Robert Burns. And this is all right with Van Buren, too, what with the widespread distribution of the product, the high price, the low overhead, and the crop of tourists wanting to see the industry's home site. Of course, this industry is pretty well decentralized; but Van Buren is not worrying.

Nor Arkansas. Because Arkansas, as any interested party will soon discover, not only has other industries and other resources—Nature has positively lavished wealth on the Bear State, wealth of every conceivable kind, in such dazzling profusion that there are even people living in the state who do not know *all* its resources. So the stranger going into the state to locate the Burns place and have a chat with Grandpa Snazzy and thirty or forty of the relatives will be pardoned his surprise when he bumps his nose on the furniture center that operates so solidly and and successfully in Fort Smith, not far from Van Buren. Or on the rich mineral-water-bath business in Hot Springs. Or the richer—far richer!—petroleum and natural-gas operations in the southern part of the state. Or the coal mining in the western area. Or the bauxite—

But I'm getting ahead of myself, and the first thing you know I'll be mentioning diamonds or zinc or pottery; and I don't want to do that yet. I want to take this kind of easy. Because there are so many things you'll find in this state when you come looking around. Things that will bring new light to your eyes and new snap to your step, and may bring you to Arkansas to live. And I'm not talking about mineral waters, either.

No, it's the atmosphere. Arkansas is alive today with a sparkling interest in industry. Industry preferably using Arkansas resources; industry preferably financed by Arkansas money and operated by Arkansas citizens—but industry. Because industry creates a healthier balance between the factory and the farm. And this interest extends from the plain citizen in the small town to the governor of the state.

NATURALLY, that includes many people and many agencies that today are working to bring about this industrial development: the governor's newly appointed industrial committee, the State Geological Survey, the State Planning Board, the State Chamber of Commerce, the local chambers of commerce, and the Arkansas Power and Light Company. Quite a healthy and effective array of organized energy, from which a state couldn't help getting results.

"All right," you say. "How are they doing? Are they getting those results?"

Well, listen to Charles T. Evans, executive of the Arkansas Power and Light Company, and judge for yourself. "We find industries literally sprouting on every hand," he said. "Take just Little Rock for a second. Fifteen years ago there probably was not a needle-trades employe anywhere around the city. Today there are approximately two thousand people employed in that industry in Little Rock, and more are coming in.

"Who employs them? Well, companies like the one that grew out of a tent-and-awning business. About eight or nine years ago, the owner of this business decided there was opportunity in the then little-developed needle trades here in Arkansas. So he installed equipment and began making work and sports clothes, and now he keeps five hundred machines busy supplying a national demand for his products.

"Or like the firm that set up in the wholesale business to job women's wear. Shortly thereafter they discovered that Little Rock buyers do the major part of their buying in New York. So, being ingenious, they became manufacturers, began turning out an excellent line of cotton dresses for sports and street wear, and today sell their products to Little Rock buyers in New York.

"Another Arkansas man saw a good opportunity in the oil fields. He found that much of the oil produced there contained an asphaltic element that made it excellent for roofing. He opened a small plant to make this roofing from this oil, and today he sells his product from coast to coast, and his plant is the largest in the state.

"Then there are the fellows who had an idea Arkansas clays ought to make just as good pottery and art objects as come from other states' clays. So they prospected around, tested clays here and there until they found what they wanted; and now they have potteries that ship and sell all over the country. Much capital? No, I don't think they had, to start with. That's the beauty of so many, in fact most, of these industrial opportunities. Most people have the idea it takes a lot of money and a big factory to start and operate an industry. They're wrong, of course. About four-fifths of this nation's industries are capitalized at fifty thousand dollars or less.

"Take Arkansas' timber. You know already about the furniture business in Fort Smith, and the fact that only two other Southern states produce more furniture than Arkansas. Well, seven or eight years ago a few men over in another part of the state decided they could make furniture, too. So they got busy and secured a nominal amount of capital—somewhere low in the five-figure range—and started business with ten or twelve employes. Today they have a hundred, and business is booming.

"Then there's the case of an undertaker who started a casket business with even less capital. He took his money, got together half a dozen unemployed woodworkers, and began making wooden caskets. Business was good, and continued so. He acquired an old woodworking plant. Now he has sixty employes making not only cypress caskets, but also walnut chairs and living-room furniture.

"And I know an even better case than that. Seven years ago a young salesman lost his job. It happened his hobby was archery. So he began making bows and arrows. The demand for his products grew until now he ships them all over this country and abroad.

"I could go on indefinitely like this. About Arkansas people who have established and are successfully operating small industries of their own. Like the concern that cuts blanks from white and red oak, and ships them to Chicago, where they are shaped into baseball bats—though, of course, there's no reason why they shouldn't be made into bats here. Like the man who makes pipes from hickory and sells them over the state. Like the young man up in the fruit belt who makes wine from grapes and cedar oil from trees. Like the men who gather mussel shells from Arkansas rivers and make them into blanks for buttons, and ship them to the Middle West to be finished—though there's no reason why they can't be finished here in Arkansas.

"Yes, I know I'm straying into more opportunities. Arkansas is alive with them. We're mining a million tons of coal a year in the western part of the state, and not processing a lump. We're producing eleven million barrels of oil a year, and not processing a drop. I mean really processing—utilizing them in the countless ways chemistry affords: plastics, paints, perfumes, varnishes, lacquers, cosmetics, and all the horde of other products that can come out of coal and oil.

"And think of the fruit we produce in the northern part of the state, not to mention the other edibles that come from our farms. We already have a solid body of canning plants up there. Wouldn't you say there's a fine chance there for more? And for that matter, the furniture field is not overcrowded, and it is just one aspect of timber utilization. Why don't you go talk to the State Forestry Commission?"

I did—and found myself *(Continued on page 44)*

The South Continues to Lead

Holland's Vol. 56, No. 5, May '1937

FROM every side come evidence and reports of the South's astonishing rise in almost every field of commerce and industry—so much evidence, so many reports, in fact, that business men in other regions are beginning to complain that all they hear about is "the South"! But while they complain, it is all good news to the South, and news to which there appears so far no end. Every index points to a steady continuance, in increasing degree, of Southern growth.

For instance, Roger Babson, famed statistician, recently said of the South: "The region is going ahead faster than most other localities. During the past five years or more it has led the entire nation in growth of population and manufacturing activity. Its speed of progress has been about double that of the country as a whole. Moreover, this forward movement does not show the symptoms of a boom. Rather, it seems to be the start of sound and lasting expansion." And even sounder is the fact that the South's speed of progress has led the nation's since 1900.

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Up in Arkansas

(Continued from page 9)

in the midst of one of the South's most efficient forest-conserving agencies: a forestry commission that since 1933 has increased forest protection on private lands from no acres to six million acres. More, a forestry commission that has done its educational work so well that of the five million acres now being cut, a million and a half are being handled intelligently—that is, cut in such a way that the oncoming growth will steadily replace that which is cut—and more and more acres will be so handled in the future.

"Arkansas timber?" asked Charles A. Gillett, the state forester. "I suppose you already know that only one other Southern state exceeds Arkansas in board feet of either total timber or saw timber. But the beautiful thing about Arkansas' timber, from the viewpoint of industry, is that the saw timber is almost equally divided between soft-wood and hardwood. That in itself is a situation that's unusual in the South.

"That means that Arkansas offers in commercial quantities such varied woods as pine, red and white oak, ash, elm, cypress, cedar, red and black gum, basswood, walnut, yellow or tulip poplar, persimmon (which, by the way, makes fine rolling pins), dogwood (for shuttles and golf-club heads), beech, cottonwood, and maple.

THE possibilities for industrial use are almost unlimited. Pulp and paper, of course, are obvious. But besides those, there are the by-products to be obtained by distillation: cellophane, rayon, celluloid for films, acetone for linoleum and solvents and perfumes and plastics and cement, formaldehyde, pyroligneus acid for explosives and tar, pyrolignite of iron for explosives, charcoal, wood creosote, acetylene, chloroform, iodoform, sausage casings, gasoline, lubricants, and even possibly sugar.

"Already we have in Arkansas a lumber company—possibly the world's largest—that is setting the South a fast pace for complete utilization of every particle of the wood it cuts. The Forestry Commission is doing everything it can to promote such efficiency. And in addition, it is making a survey of the entire state, by counties, to determine both the supply and drain of timber by species, operators by classes, and products. This survey will be kept up-to-date from year to year."

It does begin to look as if the wood-working businesses might be good shots in Arkansas, doesn't it? Along with the minerals of Arkansas. Now, speaking of minerals, it really looks as if they've got something there. I mean, judging from all I've been told, Arkansas is about as complete a mosaic of minerals as you'll find in any other like area, and most of these minerals are in commercial quantities. There are even diamonds.

WHY? What minerals? In what quantities? For what uses? Such curiosity! I wanted to know the answers, too; and I've found that the men who can give them to me, without fail, are those genial gentlemen of science, the geologists. So I called on Dr. George C. Branner, Arkansas' state geologist.

"Well, as to why," he said, "perhaps the answer is that Arkansas is a geological conglomerate of old marine deposits across the southern and up the eastern parts of the state; the wrinkled edge of a dome formation, which we call the Ozarks, in the northern portion; and a bit of several things, including volcanic plugs, from the center west to Oklahoma.

"What minerals and in what quantities? The simplest way to get at that is to divide all the Arkansas minerals into three groups: those present in unlimited quantities, those not unlimited but in sufficient quantities for normal demand, and those whose quantity and quality are problematical.

"The first group is made up of non-metallic minerals, mainly those laid down when the sea covered the southern and eastern parts of Arkansas—the same sea that stretched across Mississippi, Louisiana, Texas, and part of Alabama. The marine clays are distributed widely; they lie along the railroad from Little Rock to Texarkana, offering fine opportunities for brick plants and potteries. There are even some primary kaolins in Saline County.

PIKE COUNTY has high-grade kaolins, and while the transportation situation is bad, it can be remedied. These clays need careful and complete analysis, and that's one thing the Geological Survey hopes to bring about.

"And there's a good opportunity for cement plants here, using our deposits of cement limestone that are comparable in quality to the Straits of Dover limestones in England. Our chalk and marl deposits in the southwestern part of the state offer excellent lime for Portland cement, quicklime or hydrate, and agricultural lime. Only two cement plants are utilizing these materials now.

"There's no reason why Arkansas shouldn't have a number of prosperous glass producers. Only two concerns are using our glass or silica sands, which occur in high purity in northern Arkansas, close to the fruit-growing region. And the glass could very profitably be blown into bottles and jars to contain the incalculable amount of fine mineral waters Arkansas produces, and that need only bottling and marketing.

"Arkansas buildings can be economically constructed of the limestone and black marble (crystallized limestone) found in northern Arkansas. This black marble, by the way, is unique in this country, is unusually beautiful, and is considerably cheaper than imported black marbles. And along with it we have attractive varicolored slates.

AND besides all this, we have tremendous reserves of tripoli, which only one plant is now processing into abrasives, absorbents, fillers, and the like; and of whetstone rock in central and western Arkansas.

"In the second group fall petroleum, gas, coal, bauxite, zinc and lead, and manganese. Petroleum is reasonably well developed, of course, but deep-test prospecting in the northern reaches of the Arkansas River valley may quite possibly open up new supplies. Arkansas now imports about two-thirds of its gas from a neighboring state, not because of shortage of Arkansas reserves, but because of price. With this price problem worked out, Arkansas would be fine for thermal industries.

"Coal offers wide possibilities. Arkansas has a reserve of a half billion tons, and is producing only a million tons a year, mostly of high grade.

"Arkansas is famous for bauxite, of course, since it supplies more than nine-tenths of the country's production. Heretofore the use of bauxite primarily in metallic products has been marginal, controlled by imports from the British and Dutch Guianas. But in recent years the increasing use of bauxite in chemicals and abrasives has opened the doors for independent producers and helped greatly to stabilize the production. Arkansas' reserve of bauxite are very probably larger than most of us think, and the increase of the chemical industries will mean more and more opportunity for bauxite producers.

"Zinc and lead production is marginal and at present slight, though the reserves are very ample. New highways and hydroelectric-power developments on the White River will help make these minerals more accessible and profitable. And you perhaps know that only one other Southern state produces more manganese and manganiferous ore than does Arkansas, despite the fact that only two producers are operating here.

"In the third group, where we know little of the quality or quantity of the minerals, are lignite, antimony, cinnabar (from which comes quicksilver), titanium, asphaltic sands, bedded barite, diamonds, rock phosphate, bentonite and other fuller's earths, brines, and gypsum. Arkansas has sixty square miles of lignite, which it does not need for fuel just now. We must find more antimony. More than twelve hundred flasks of quicksilver have been produced from the cinnabar deposits since 1931; and these deposits, covering a district twenty-five miles long, are little developed. Titanium warrants development. There are enough asphaltic sands, bedded barite, and gypsum to support a small industry each.

THE famous Arkansas diamonds—the only ones ever found in place in North America—occur in volcanic plugs that have not been adequately tested. Estimates of the number of diamonds so far recovered range from ten to fifty thousand, and probably ten per cent of these have been gems while the rest have been industrial diamonds.

"There are four hundred and twenty miles of outcropping phosphate-bearing rocks in northern Arkansas that need testing, as do our brines. And our other bleaching minerals are of high quality and promise large reserves.

"Summing it all up, I should say that the Arkansas minerals most promising for exploration and immediate development are oil, gas, quicksilver, bauxite, and bentonite and other fuller's earths; while the minerals worth exploring but of problematical value include coal, lignite, titanium, asphalt, clay, diamonds, gypsum, central Arkansas limestone, phosphate, tripoli, barite, slate, lead, silver, and manganese.

"Does this answer your questions?"

It answered them so completely and precisely that my head was more or less swimming; and it didn't entirely clear until L. A. Henry, of the State Planning Board, took me figuratively into the breath-taking scenic regions of Arkansas and began telling me of this other enormous resource of Arkansas.

FROM him came the casual statement that Arkansas is working to enlarge the tourist industry that at present brings fifty million dollars to it each year. In other words, Arkansas is starting with a tourist supply that many states are planning to work up to!

But the real fruit of the whole business—the increasing utilization of farm and forest and minerals and scenic beauty—according to Governor Bailey's way of thinking, will be more and more jobs for Arkansas people. He and others have looked at the record and decided that every possible effort will be expended to assure the continued and even faster industrial development that Arkansas' vast resources justify.

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Editors' Note—This is the sixth of a series of articles by Mr. Coleman on industrial opportunity in the South. The seventh will appear in HOLLAND'S for Jnue.

Rail Shipments Show Big Hike Over Last Year

Democrat 5-30-37

Missouri and Arkansas Line Attributes Increase ot Region Served.

Loadings Doubled

Canning Plants Along Line Show Record Operation.

St. Joe—An increase of 18½ per cent in the business of the Missouri & Arkansas Railway for the first five months of 1937, over a similar period for 1936, is due mainly to the increase of shipments originating on the system, according to L. A. Watkins, vice president of the company.

Mr. Watkins has directed a strenuous campaign through the officials of the road and its employes to stimulate local industries and develop local resources with the result that loadings on the line this year have doubled those of last year.

Development of mineral resources has aided materially. The formation of the Manda Industrial Corporation early in the year was an encouragement to the pick and shovel miners. Ore docks were built at Marshall and Harrison and at the stations between and one day each week a buyer visits each station to buy ore offered in any quantity. So while the larger mining companes have not yet resumed extensive operations, the smaller operators and the prospectors in the new "diggings" are sending a steady stream of ore to the buyers. This week one car of ore has been shipped from Harrison, two from St. Joe, and one from Stark City, Mo.; mostly zinc ore but some lead.

The increase in the output of Silica Sand Company at Everton is also resulting in a large number of car-load shipments monthly, while stone and lime from other points are aiding the total. The recently installed planing mill of the Bullock Company at Bellefonte is furnishing large shipments of finished lumber, while the stave mills at Leslie, Harrison and other points are pouring out a steady stream of loaded freight cars.

Secure Oak Tie Market.

A boon not only to the railroad but to the farmers who are seeking to rehabilitate themselves by their own efforts has been the securing of a market for red oak ties to be shipped to one of the trunk line railroads. Almost every farmer in the hill section has timber on his farm in which he can labor in the off-season. Red oak is now the most plentiful and if treated at creosoting plants before being laid under the tracks, red oak ties will last as well and are as desirable as any of the more enduring woods, such as white oak. The large railroad system with which Mr. Watkins has found a market has several creosoting plants to which these ties are shipped. The tie yards at all the railway sidings in this territory are now stacked with red oak ties and buyers are daily increasing the piles. Many farmers are financing their own farm operations this year by hacking ties when the ground it too wet for the plow.

The tomato crop this year promises to again bring substantial returns to north Arkansas farmers and hundreds of car load shipments to the railroad. A recent check-up shows that there are 79 canning plants on the M. & A. railway north of Marshall. These are all operating this year. While the acreage contracted is only about 60 per cent of the highest acreage of former years the prospects for a good crop are bright and the canneries are already contracting for car lots of tin cans in anticipation of a good run. Some of the canneries will can berries, fruits and other vegetables such as beans and spinach.

Vice President Watkins is constantly working to develop new resources and has recently investigated deposits of rich limestone, phosphates, black marble and manganese with a view to their development. H. L. Ecoff, the railroad's agricultural agent, is also promoting agricultural projects with a view to creating larger shipments of dairy products and livestock.

Mr. Watkins states that after years of "ups and downs" the railroad is now earning its way, is keeping well out of the "red," its rolling stock is in the best shape in many years with the prospect that more locomotives will be needed for the fall traffic, and a constant improvement is being made in the roadbed, track and bridges.

Aid to State's [illegible]

Would Give Mile-by-Mile F[illegible] Curiosities, With S[illegible]

Viewed as Practical Way to Speed Up Development of Related Manufactures

Democrat 6-637

By WILLIAM JOHNSON.

Imagine yourself running a store. It is a huge establishment that you fell heir to, let us say, and for one reason or another you've never taken a complete inventory of the contents. Unlikely? Well, let's continue the supposition and see if it is. You have only a vague idea of all the goods piled up in dark corners of your vast emporium, and tucked away on remote shelves. So, when customers asked for certain things, you'd have to put them off with hazy replies. "Yeah, sure, we've got it," you'd stall. "Hmmm. Let's see. How'd you like to rummage around over in that northwest corner, or maybe the southwest one, or . . . . How much have we got, and what kind? To tell the truth, brother, I don't know. Just you hunt around. There's plenty—I know that—and tip-top, too." The average customer would edge out of your place, and over to a rival store. Pretty soon there'd be a trail worn past your establishment to other places of business.

The point of that fanciful picture is that Arkansas is a store, a vast mart of trade, where we sell to the country and the world a huge annual total of goods. In a multitude of forms, from cotton to cob pipes, from building material to beeswax, from petroleum to pearls, we merchandise to buyers from far and wide the products of the immense stock of resources we have inherited in Arkansas from the generations who carved out the state.

Our income, our wealth and standard of living depend on how skillfully we sell our rich endowment of soil fertility, forests, minerals and scenery. And particularly in minerals, we are handicapped in selling, because we do not know in detail what we possess. We are, as regards many of our minerals, under exactly the disadvantage depicted in the opening paragraph. We can give a miner or manufacturer of these minerals only general information, and invite him to look around.

Investor Demands Facts.

That isn't enough. The man who is going to put money into a mine or a mineral industry of some kind wants certain definite facts. He wants to know the quality of the mineral he is interested in, how deep it lies, if under-ground, how near it is to transportation facilities, and the amount he will probably find in a given place. When you can't answer his questions to the point and fully, he is likely to go where he will get answers. He won't gamble his money on any more chances than he must accept in the normal course of his business.

Take, for instance a man who may be seeking a location to manufacture roofing tile. Just any clay at all isn't going to serve his purpose. He has in mind a particular kind of tile in texture, and in natural color, if it isn't to be painted. This calls for clay of a certain composition, and enough of it for lasting operation of the plant.

Maybe, too, the tile this man intends to make will call for sand and lime. If so, he will want to know whether they can be had in satisfactory quality, convenient to his factory.

These questions, and often more complicated ones, come up in the manufacture of all minerals. For a good many of them, the State Geological Survey has the answers. But for a considerable number, there are gaps in the survey's well compiled information. It hasn't had enough money to enable it to study out and map the entire mineral prospect of the state.

But now that defect may be corrected. A mineral survey of Arkansas, a mile-by-mile appraisal of its visible mineral resources, has been planned by the State Geological Survey as a federal employment project. Locally approved, it is now in Washington for the final verdict. And since it fits into announced government intentions of spending relief money on wages rather than materials, briht pose are held of the survey getting Uncle Sam's go-ahead signal.

"The p[illegible] minerals [illegible] emphasiz[illegible] [illegible]ude of them, past and present, would be recorded, and new uses would be suggested wherever any are indicated. Good sites for the location of industries would be noted."

Oklahoma has just completed such a survey, and various agencies of that state are finding the data accumulated to be of much help. It is aiding the highway department there, the soil conservation service, the geological survey, the conservation commission, the school land department, and other branches of the governmental service.

"But," does someone ask, "can relief workers, with no training in geology, do this sort of thing in a way that will have any value?"

Done in Oklahoma.

Well, they did it in Oklahoma, and the man who was in charge of that survey, Robert A. Beckstrom, has made several trips to Arkansas to assist in organizing the projected survey here.

There would be trained engineers in charge of the survey, you see, and the workers would get a preliminary schooling in what they were to look for, and how to go about it.

"Largely," Dr. Branner said, "the workers would be country boys, and a country life sharpens the power of observation. Country boys usually grow up with good memories, too, which would be another essential in the work, since there would be a good deal of instruction, briefly given, to carry in mind."

It was a country lad, Dr. Branner pointed out, who discovered mercury in southwest Arkansas. Scientific searchers had previously hunted around in the state for this mineral without finding it. Then a farm lad became curious about a red-flecked stone that had long been built into fences. His effort to learn what it was resulted in a chemical analysis—and Arkansas got another industry.

Workers in the survey would be sent out in pairs, under the oversight of engineers. Their state pride would be enlisted—the value of the work, if well done, impressed on them.

Each two men would go over two or three sections of land a day. They would have maps, and they would mark in roads, wells, springs, ponds, streams, cliffs and the like, together with the location of every observed mineral deposit.

The men would collect data on the flow of wells and springs, and take samples of the water. These would go to the state health department. Samples of earths, gravel and rocks would also be collected, and sent to the highway department and the geological survey for analysis. The maps would be turned over to the geological survey.

Samples to Be Analyzed.

Tests of earth and rock samples by the highway department laboratory and the geological survey would reveal their value, if any. All of this data would be sifted and recorded, and the field maps would be redrawn into county maps, and then a state map, picturing the information disclosed.

Such, in brief, omitting many details, is the project. It has a flavor of excitement. Out of such a study, there might easily come new knowledge of the state's resources that would give a strong impulse to our development. Even if nothing very vivid resulted, the survey would certainly have many values in ways previously noted.

Minerals now contribute heftily to our payrolls and state income. In 1930 Arkansas had 9,074 workers engaged in the extraction of minerals, which was more than our forests employed. Then in the manufacture of minerals, the state had another considerable amount of wage-earning. Our clay, glass and stone industries, for instance, provided 1,656 jobs.

Even in the depths of the depression, in 1932, the mineral output of Arkansas totaled a value of $15,540,000.

Now the state's mineral income is climbing. Recovery is on, the country and the world over. Conditions favor pushing the development of our mineral resources to the utmost.

The projected survey would aid much to that end, in Dr. Branner's informed opinion. So the hopeful outlook for getting it is another gleam of cheer on the state's economic horizon.

Broad Study Contemplated.

Besides taking an inventory of minerals, this project would include locating, describing and mapping caves and other such natural curiosities that are of general interest.

Underground water resources would be surveyed, too. This would be done by locating on maps all wells and springs, with data as to their depth, the volume of flow and the quality of the water.

Facts useful in flood and drouth control, such as surface run-off and erosion, would likewise be tabulated, together with information needful in terracing and putting in rural electrification.

The results of such a survey would obviously be of great value in helping along the development of the state's natural resources. A few of the practical ends it would serve were noted by Dr. George C. Branner, state geologist, as follows:

Important mineral discoveries migh be made, as, for instance, the location of reserves of barite, tripoli and fuller's earth.

Further light would be thrown on the extent and quality of our stores of clay, sand and other earths useful in manufactures.

"Clay industries," Dr. Branner pointed out, "are having a big development. A study of our clays would very probably show that we have ample supplies adapted to brick, tile and pottery production."

In the same way, the geologist said, larger knowledge of our limestone would reveal definitely its chemical nature in different localities. We would know exactly where to refer an industrialist who wanted this stone for chemical lime, cement, rock wool, burned lime products, or any other specific purpose.

The most convenient and best supplies of material for road construction would be located. Also for building purposes.

Help for Health Work.

Public health work would be advanced by the increased information on the sources and character of our water supplies.

This information would further enable the geological survey to give valuable and money - saving advice to towns and to individuals drilling for water. Quite often now wells drilled blindly are failures, or perhaps have to be driven deeper than might be necessary if there was more knowledge of ground water conditions. This is especially true in northern and western Arkansas, Dr. Branner said. Southern and eastern Arkansas have an abundance of ground water, he explained.

Location of caves and other natural oddities would be of service to the state in attracting tourists.

The projected survey would have numerous other values, but these are enough to indicate its solid worth.

"We would be sending out eyes to look at things the state over, and see what is actually there," Dr. Branner summed up.

"Our surveys made thus far necessarily have been of definite mineral resources in specific areas. This survey, covering all of the state from a broad, general point of view, would enormously expand our working knowledge of what we possess.

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TELEPHONE ALL DEPARTMENTS 4-0321

A "JOKER" IN THE WAGE-HO[illegible] BILL.

A joint congressional labor committee holding public hearings on President Roosevelt's measure to establish minimum wages and maximum hours. Consid[illegible] so far, has

The NEW[illegible]

A story is going the rounds of [illegible] litical circles that plans are afoot [illegible] the hand-picking of a new Uni[illegible] States senator, in case Sen. Joe [illegible] Robinson resigns to become an as[illegible] ciate justice of the United States [illegible] preme court.

The plan, according to the sto[illegible] is for the Democratic State Co[illegible] mittee to meet and call a prima[illegible] fixing, of course, a time limit for [illegible] ing by candidates. The joker is t[illegible] the committee would estimate t[illegible]

Industrial

258

South Has Both Brains and Money to Support Locally-Owned Industries Which, as a Rule, Are Well Managed, Writer Says

Democrat 6-6-37

(Editor's Note: Arthur Coleman, associate editor of Holland's Magazine, has traveled e[illegible]ively in the South during the pas[illegible]e years, studying the region's resources, developments and potentialities. Since last July he has been engaged in gathering for, and writing a series of articles in his magazine on the South's industrial development and opportunity. Mr. Coleman is widely known, not only for his work on Holland's, but for his contributions to a score of national magazines, periodicals and newspapers.)

ARTHUR COLEMAN.

In discussions of present and future industry in the South, almost everyone proceeds on a few common premises. Chief among these is the assumption that the South is too poor and inexperienced to do much toward developing industry on its own hook. Even those who have given a great deal of time and thought to the problem—more than their conclusions would indicate—have repeatedly expressed this belief.

Dr. Howard Odum, for instance, has said that of the five essentials, of a great civilization, we have two—natural and human resources—and lag behind in three: Science, skills, technology; sufficient available capital, and institutions. He says that before we can properly develop our natural resources we must train our people. And he is dubious about our success in this task because of the burden he feels our large youthful population imposes on the South's educational facilities.

Theoretically his reasoning is sound, his logic beautiful. Practically, no. I want to examine here some of his conclusions, because I believe he has arrived at them too purely on the basis of old statistics and other data not valid now. I want to challenge his decisions that education of the people must precede industrial development, and that we lack at present sufficient science, skills and technology—which I take to include, importantly, management—and sufficient available free capital to develop a sound structure of indigenous Southern industry.

Underlying most statistical analysis of industry in the South is the assumption that Southern industry is largely absentee-owned and managed; that home-owned Southern industry is negligible; and that this is so because we presumably have in the South no industrial talent or experience. The fact is that the greater part of industry, in the South and elsewhere, is owned by citizens of the region. But industries of this type grow quietly, without fanfare. Chambers of commerce pay little or no attention to them except when there is need for money with which to attract an industry from outside. The home-owned industry receives no public bonuses, no free buildings, no relief from taxation, and little or no assistance from the local bankers.

Good Management the Rule.

However talented and able its owners and managers may be, however substantial their enterprises, they are still home folk. Their sales may cover several states or the nation; but no one at home knows or learns that except accidentally. They are the plain John Joneses, not to be compared with magicial "eastern industrialists."

These locally-owned industries are, as a rule, well managed. The census reports that in 1933 the South's proportion of industrial failure to plants in operation was one-third that in the rest of the country. Furthermore, the locally-owned industries get their management talent at home, and train and are trained by it. Examples are myriad; the North Carolina furniture industry; the young man who turned a nearly defunct tannery into a successful leathergoods concern traveling two dozen men; the small local company that in three years has developed a nationally selling line of sporting goods; the chemist who turned $12,-500 into $8,000,000; the several canners who have established their brands throughout whole regions and the nation; and innumerable others.

These Southern managers and industries are not exceptional. Moreover, all the while they are training others to succeed them. Nor are they financed by "outside" capital; they are the products of men and ideas and money here at home. And this brings me to Dr. Odum's contention that we have not sufficient capital in the South for industry.

This depends on our conception of industry. If our eyes are filled with images of huge rayon and paper mills, chemical plants and steel furnaces, we are right in saying the South lacks capital for many such enterprises. But even here we should keep in mind the textile chains, the great cotton-oil products concerns, the shoe businesses, the huge soft-drink companies, the tobacco empires and other tremendous achievements of southern capital, together with the $5,000,000 newsprint mill, which, it has been announced is to be financed by Texas capital.

South Has Capital.

But more to the point is the fact that four-fifths of all this country's industries are capitalized for $50,000 or less, and naturally by far the greater part of these are capitalized for much less. When we have adjusted our eyes to this obvious situation, and to the existing great body of small indigenous southern industries, it becomes unnecessary to state that the South has ample capital to develop its resources in all save a very few fields—and perhaps to some extent in those.

It seems obvious, at least to me, that the South has all the elements for its own salvation right at its finger tips. It has the natural and human resources. It evidences sufficient skill at industrial development in its present functioning industries. These industries further testify by their presence, size and scope that the creation of more like them is well within the reach of southern capital. And they make for a sounder economy; I have found no one who disputes the fact that, everything else being equal, sixty industries capitalized at, say, $50,000 each, and distributed in 40 or 50 suitable locations, operate with more economic and social profits and greater satisfaction to themselves and to the region than does one $3,000,00 industry. Too, the smaller industries cost less to establish, and—most important—their capital profits stay in the South.

Furthermore, the South today is demonstrating a buying power and will that establish it as the nation's fastest growing market—a vital consideration in developing industry, and one which indicates the soundness of the industries from which so large a number of the South's people receive income. In 1935 many Southern states were already nearing their 1929 peaks in manufacturing output; and at the present time the South leads, as for several years it has led, all other regions in rate of increase in every important index of economic growth.

Needs Industrial Growth.

For all that, for all its extraordinary advancement since 1900, and particularly since 1933, the South does still lack certain assets. Statistically, it had in 1933 a third of the country's population, two-fifths of the mineral production and two-fifths of the agricultural output; but it could show only one-fifth of the nation's wealth and the same ratio of manufacturing volumes. So, obviously, it is in need of everything it can get to pull itself up to its rightful industrial position in proportion to population alone.

Probably the most vital thing the South needs is a rebirth of self-confidence, a willingness for industrial and other adventure, the lack of which is so evident in the very attitudes and beliefs I have been assailing. Bluntly, we are ridden by a regionary inferiority complex. Too many of our moneyed people have come by whatever wealth they have through inheritance, and the vigor and gameness of their fortune-making sires seems not to be in them; they prefer keeping money to using it.

This applies also to the South's bankers. Conditioned by and in an agrarian economy, they seem able to think of investment only in terms of land. And their refusal to assist industry, particularly local industry, coupled with their and others' weighty words of warning, has the cumulative result of effectively dampening the ardor and ambition of countless potential southern industrialists.

A long step toward reviving the spirit of pioneering in the South would be the setting up of an industrial assistance fund in every community. The sums of money that are too constantly raised by southern towns to provide free inducements to outside industries are proof positive that such a fund is not only possible, but not too burdensome for even the smaller municipalities. A considerable number of small towns have, we know, raised sums as high as $200,000 and even more, for the purpose of helping outside industries to locate in their environs. And even half or less of that larger amount would be invaluable in extending aid to worthy local industries.

With this fund should go community industrial council, made up of the town's experienced industrialists, business men and bankers, which would stand ready to guide embryo industries through their first steps, inform them of commercial pitfalls and see them safely established.

Planning Agency Valuable.

Another asset the South sorely needs is a functioning planning agency in each state. I do not have in mind Dr. Odum's organizations. Mine would perform only a part of the functions of his, plus other activities he does not include. Such a planning agency would familiarize itself thoroughly with all its state's resources and every industrial product that can be derived from them. And it would stand ready to tell any seriously interested individual or group exactly what the state has, and to assist actively in the predevelopmental steps in creating industries.

The South needs, as Dr. Odum has pointed out, intelligent handling of its forests and soils. We have nearly half the nation's forest area, but we had in 1933 less than a seventh of the country's board feet of standing saw timber. Good programs have been started in a few Southern states, looking to better cutting methods. But progress is slow, and it will not speed up noticeably until our lumber companies, the pulp and paper mills, the agricultural commissions through their county agents, and every other agency and individual coming in contact with timber join in preaching and practicing intelligent handling of our forests.

Where our soils are concerned, the picture is complicated by contradictory advice, one government agency bidding us clear and plant our uplands, while another asks us to reforest them. But unless we do restock our watersheds and unfit farm lands, not only will our expensive dams be useless, but our remaining fertile lands will be covered with sterile silt. And a prosperous farm population is vital to prosperous industry.

Higher Wages Favored.

Along with this must come remuneration for the Southern wage earner more commensurate with his worth. There is no legitimate reason why the Southern worker should continue in his 1933 status, when he received fom 20 to 40 per cent less than workers elsewhere. The experience of industries from other regions is that the Southerner is far more easily trained than are workers in other parts of the nation. Yet, heretofore, we either have used "cheap labor" as an inducement, have actually argued for low wages because they "are more than these people have ever earned," or have decried them without doing anything about the situation.

Fortunately, we are awaking to our error. We are learning that industries choose Southern locations for many reasons besides cheap labor—genial climate, better operating conditions (absence of nuisance laws and regulations), longer operating periods, lower heating costs, lower fuel costs, lower taxes, lower rents, intelligent labor, a growing market. And wages in the South, outside the automobile industry, are increasing faster than in other regions.

Finally, the South needs the ducation in science and technology for which Dr. Odum calls. But this does not have to wait on industry, nor industry on education. We are beginning to provide this education through industrial scholarships, technical courses in our colleges, and such agencies as the industrial experiment station begun at Georgia Tech. In th meantime, our industrialists are learning that they can hire technical experience from other regions instead of forfeiting our industrial birthright for pay roll.

Judge W. F. Hill returned yesterday from Antimony City and is delighted with the prospects there . . . He says that the furnaces are running and that 80 men are engaged in taking the mineral from the earth; that soon a large paint works will be established there. When the railroad, which is under a $50,000 bond to be built from Texarkana to that place, is completed, about January 1, Antimony City should attract as much attention as Leadvile, Colo. The projected large paint works will give employment to 2,000 men.

Miss Addie Lennox of Pendleton, Ark., arrived yesterday and is the guest of Col. and Mrs. Gilbert Knapp.

Mr. F. O. Robertson of Monticello is among the late arrivals in the city and is registering att he Deming hotel.

Gazette 6-12-37

MINERAL RIGHTS RULED PART OF REAL PROPERTY

June 15, 1937

Reservation Must Be Noted.

Conveyance of title to a fee simple estate in the granting clause of a deed nullifies any reservation made in the habendum clause as to gas, oil and mineral rights, the Supreme Court held yesterday.

The ruling was given in a decision affirming a Nevada Chancery Court decree holding that Leodes Jackson and others were entitled to cancellation of an oil lease made by Mrs. Lillian Mason under authority presumed from a gas, oil and mineral rights reservation in the deed by which she conveyed title to the lands to the Masons.

The sale was made in 1919, and in the granting clause or the premises of the deed, conveyance of the fee simple estate was made. In the habendum clause, however, the reservation was noted. The court's attitude was that gas, oil and minerals are part of the real property, and that any reservation as to their conveyance must be noted in the granting clause of a deed. The Masons did not execute the oil lease until last July.

Money Received From Estate Must Be Paid Back.

The court also affirmed a decree of the Pope Chancery Court which required George S. Neal and his sister, Mrs. Sarah Neal Rogers, each to pay back $8,910 received from the estate of their mother, Mrs. Mary J. Neal, so that the estate may be distributed according to law.

The suit was brought by Mrs. William G. Neal as next friend of Betty Lou Brandon, a minor, and Gladys Neal Brandon. Before her death, Mrs. [illegible] Neal deeded to George S. Neal,

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NEW MINERALS TO INCREASE INDUSTRIES ALONG M. AND A.

Gazette 6-13-37

By TOM SHIRAS.

Harrison, June 12.—Louie Watkins, general manager of the Missouri and Arkansas railroad, who has been prospecting for new raw materials along his line since January, has found four deposits of new mineral during the last few weeks, which constitute the basis of four new industries.

For many years, people adjoining the road in Searcy county have been aware of a gray looking soft rock, but thought it of no consequence, and never had it analyzed. Mr. Watkins investigated this deposit recently and found it to be aluminum silicate, which is used as a filler for cement, and for abrasive purposes. He has several people interested in the deposit and in a few months it probably will be giving his road additional tonnage.

Near St. Joe, in Searcy county, he has located a big deposit of phosphate which is used in the manufacture of fertilizer, and in the same locality has found material running high in magnesium sulphate, more commonly termed epsom salts.

Prospecting around Edgemont, 12 miles below Shirley, has shown up a large quantity of manganiferous ore, which is rather conclusive evidence that the manganese deposits in Independence, Stone and Izard counties run clear through from the White to the Red river. Manganiferous ore is an ore that contains both manganese and iron, and is used to make spieglessen, a metal used in making castings where more strength is required than in cast iron. The ore at Edgemont runs about 30 per cent manganese and carries a large per cent of iron.

Zinc and lead mining along the road continues to show an increase every month and shipments are running from three to five cars each week. Mr. Watkins estimates that about 150 men are now engaged in the industry within hauling distance of the road. The heavy shipping points for this ore are Harrison and St. Joe. Ore shipped from Harrison is mined in Newton county, and other points adjacent to Harrison. Ore shipped from St. Joe comes from Searcy, Newton and Marion counties, some of it being hauled as far as 30 miles.

Work will start next week on the Big Hurricane zinc mine, near Pindall, and a large milling plant will be constructed there. The L. & A. Royalty Company and the Big Hurricane Mining Corporation have taken over the property on a lease and have started active work. C. M. Huddleston of Yellville is resident agent of the concern. The first work that will be to sink a shaft into the ore body, and as soon as enough ground is opened up to supply a mill, the mill will be built. The Big Hurricane was formerly owned and operated by J. C. Shepherd, who was the largest producer of zinc ore in Arkansas during the World war. The ore body lies along a fault line that runs through the 640 acres that constitutes the property. During Mr. Shepherd's ownership of the mine he shipped thousands of tons of ore from it. The shipping point for this property will be Pindall on the M. and A.

Mr. Watkins has located a body of iron pyrites near Berryville, in Carroll county, and prospecting is in progress on the deposit. A shaft was down six feet in the ore body the first of this week and it appears to be of commercial extent. Iron pyrites is mined for its sulphur content, and is used extensively in the manufacture of sulphuric acid. Markets for this ore in Arkansas would be the paper mills and fertilizing manufacturing plants.

The Bullock Lumber Company of Eureka Springs is putting in a big planing mill and drying kiln at Bellfonte on the M. and A. railroad and will finish lumber there from several mills. The Pierce Lumber Company has also located a sawmill at Pindall and has started production.

Fifty Years Ago.

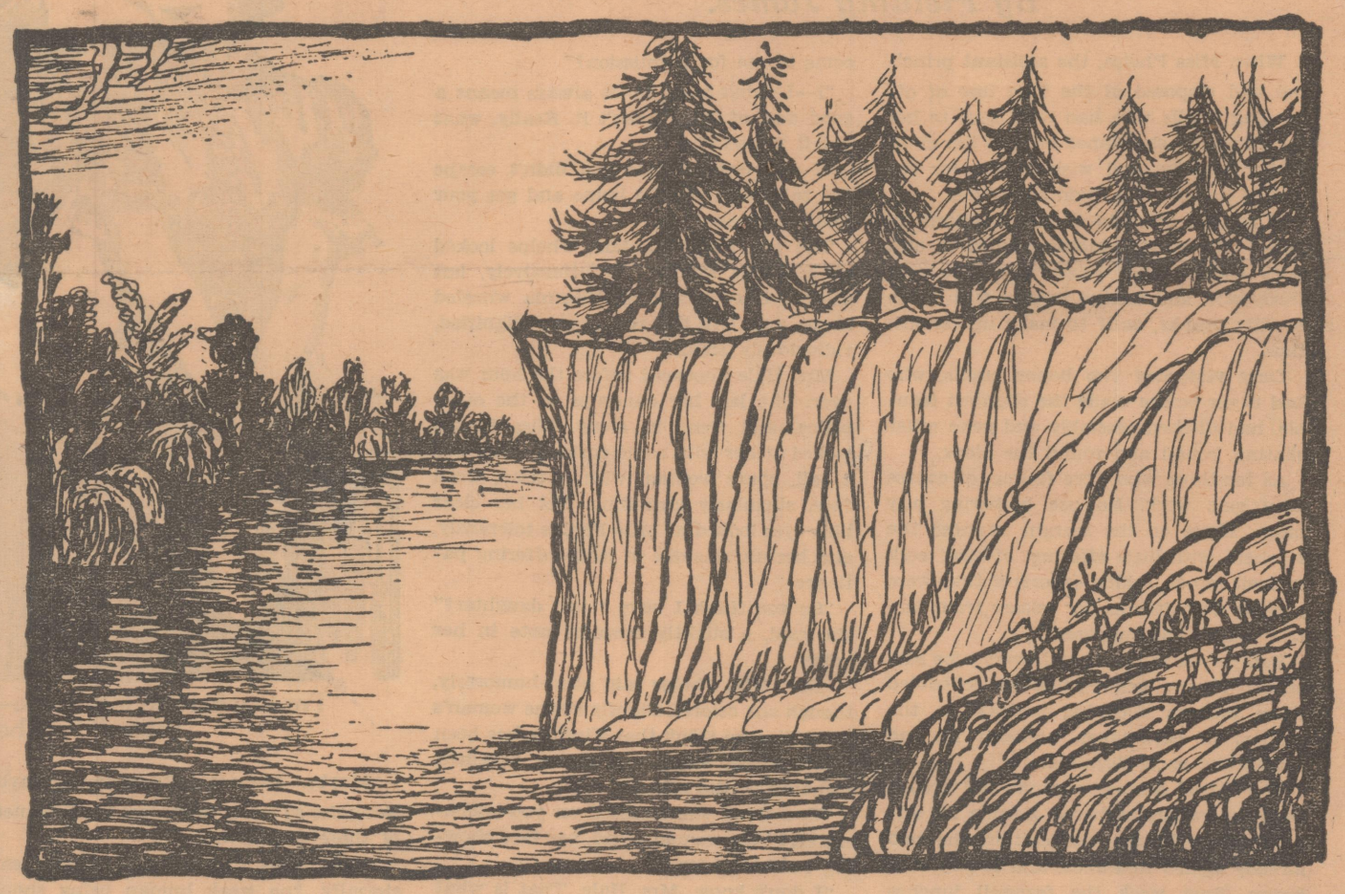
(Arkansas Gazette, June 12, 1887.)

Col. Logan H. Roots and family have left the city for the summer. On the 25th they will sail on the Etruria from New York for a tour of Europe. A host of admiring friends wish them a pleasant journey and a safe return, And, as the colonel always has a good word to say for Arkansas wherever he is, it is not unreasonable to expect that good will come to the state in some way from his association with the men controlling large capital in countries where interest rates are low. A number of friends, some beautiful bouquets, handsome basket of fruit and other tokens were at the depot to give Colonel and Mrs. Roots assurances of good wishes when they started for their summer jaunt in foreign places.

The Place Names Of Arkansas

Romance and History, European Nomenclature, the Bible and Clergy, and Pioneers Are Perpetuated in Titles Given to Cities and Towns of State.

By Fred W. Allsopp.



—Sketch by Vivian Williams Utley.

Pine Bluff was named for the huge bluff on the Arkansas river, lined with pines, found by the first settlers of the town.

There are many legends about Arkansas towns; and the origin of the names of places, as of individuals, is interesting, especially to the antiquary. Few states can compare with Arkansas in the singularity or picturesqueness of its place names. Many of them have been derived from queer sources. Some of them have been supplied by "savage, saint and sage." Sometimes they have historical and even romantic significance. Indeed, one Arkansas town is named Romance. The names often seem to have originated by chance, and sometimes in jest. Indian names, the names of old forts, French, Spanish and English nomenclature, Biblical or ecclesiastical names, those of pioneers and the odd Anglicization of foreign names, are all represented in Arkansas landmarks.

Those derived from the word Arkansas, include Arkansas City, Arkana, Arkadelphia, Arkinda, Arkla, Arkline, Texarkana, Moark and Newark.

Those with suffixes of "borough," "boro," or the German "burg" (meaning homestead or market place) are Hillsborough, Jonesboro, Lockesburg, New Edinburg, Mountainburg, Newburg, Roseboro, Lunenberg, Hamburg, Wallaceburg.

Towns with names bearing the French suffix "ville" are Batesville, Glenville, Fayetteville, Belleville, Johnsville, Nashville, Maysville, Masonville, Jacksonville, Fallsville, Plummerville, Prattsville, Smithville, Wrightsville, Yellville.

Those ending with "field" (meadows) are Mansfield, Springfield, Barfield, Bellefield, Redfield.

Scotch and Irish "Macs" are represented by McCaskell, McClelland, McCrory, McDougal, McFadden, McFerrin, McGehee, McHue, McJester, McKamie, McNab, McNeil, McRae and McPherson. Other "sons" are Edmonson, Emerson, Higginson, Donaldson.

Self-styled "centers" are Center, in Sharp county; Center Hill, Centre Point, Center Ridge, Centerton, Centerville.

Since Arkansas is noted for its fine springs of water, it is not surprising to find towns named Armstrong Springs, Hot Springs, Heber Springs, Eureka Springs, Artesian, Baker Springs, Bog Springs, Nick Springs, Warm Springs, Whalen Springs, Mammoth Spring and Ravenden Springs.

Among the names of foreign origin preceded by "de," are DeWitt, De Queen, DeVall's Bluff, DeView, DeTonti, DeAnn, DeRoche. Prefixed by "el" are El Central, El Dorado and El Paso.

Not all the saints in the calendar are represented, but we find St. James, St. Charles, St. Joe, St. Francis and St. Paul. There is also a Catholic settlement on Pigeon Roost mountain, in Conway county, called St. Vincent, which has not been listed as a town.

Names ending in "ton" (town) are Centerton, Hampton, Morristown, Nettleton, Charleston, Huntington, Morrilton, Morton, Slatington, Smithton, Princeton, Thornton, Trenton, Uniontown, Warrenton, Jamestown, Wharton, Georgetown.

Minerals, ores and mining gave rise to Mineral Springs, Bauxite, Silver, Sandtown, Sandy Bend, Magnet Cove, Marble, Antimony, Lead Hill, White Cliffs, Stonewall, Step Rock, Zinc.

Names derived from precious stones are Onyx, Topaz, Jasper, Jade and Opal.

Those derived from fruits, plants and flowers are Peach Orchard, Tulip, Crab Tree, Strawberry, Wild Cherry, Raspberry, Grape, Daisy, Violet Hill, Rosebud, Snowball, Magnolia, Roseland, Floral, Blossom, Flowery, Lily.

Old French forts are represented by Fort Smith Fort Lynn, Fort Douglas.

Indian names of the towns include, Pocahontas, Powhatan, Toltec, Ouachita, Osecola, Indian, Indiana, Indian Bay.

They have a Keiser in Mississippi county.

There is a Bald Knob in White county.

They have a King in Sevier county, one known as Rex in Van Buren and a Monarch in Marion county.

There is a Lost Prairie in Miller county.

They have Nutts in Pike county.

In Pope county there is a place that is Okay.

There is a Princetown in Dallas county.

There are cities of all kinds in Arkansas, among them, Star City, Sulphur City, Junction City, Pine City.

Tipperary is in Clay county, Venus in Madison county.

Republicans are scarce, but there is one in Faulkner county.

They Hoop 'Em Up in Phillips county.

Names compounded with "woods" and "downs" are Millwwood, Traskwood, Woodberry, Hollywood, Ashdown, Greenwood and Gleenwood.

Those derived from "trees" include Maple, Firs, Walnut Hill, Walnut Corner, Walnut Ridge, Walnut Lake, Walnut Tree, Walnut Grove, Fairoaks, Hickory Plains, Hickoria, Hickory Ridge, Mulberry, Willow, Pine Bluff, Pine Grove, Black Oak, Cedarville, Cedar Glades, Holly Grove, Holly Springs, Hollywood, Poplar Grove, Piney, Pine City, Pine Tree, Pine Grove, Lone Pine, Marked Tree, Ash Flat and Green Forrest.

Names compounded with "rock" are plentiful, such as Big Rock, Little Rock, Black Rock, Rocky Creek, Rock Springs, Rockwood, Rock House, Sulphur Rock, Rock and New Rock.

The many mountains, hills and bluffs of the state are exemplified by the following: Peak, Blue Mountain, Bluff City, Bluffton, Alpine, Hillsboro, Hill Top, Mountain Crest, Mt. Nebo, Mountain Home, Mountain View, Mount Magazine, Mt. Holly, Mt. Olive, Mountain Top, Mt. Ida, Mt. Levi, Mt. Judea, Mt. Perkin, Mt. Vernon, Mt. Pleasant, Pleasant Ridge, Mountain Valley, Pinnacle, Highland, Rich Mountain, Summit, Judd Hill, Union Hill, Pine Bluff, Red Bluffs, Cane Hill, North Point.

There is a Cotton Plant, in Woodruff county; a Turkey, in Marion county; a Bonanza, in Sebastian county; an Amateur, in Sharpe county; an Abbott, in Scott county; a Prim "town," in Cleburne county; a Goldman, in Arkansas county. There is Ink, in Polk county; Harmony, in Johnson county; Joy, in White county; Ozone in Johnson county; Rest, in Lincoln county; Reform, in Saline county; Prosperity, in Boone county; an Atlas, in Searcy county.

We find Islands, in Fulton county; Cobbs, in Lonoke county; Clay, in White county, and a Furth, in Lincoln county.

The beasts, fishes, and insects are not overlooked in the naming of towns, for we have Colt, in St. Francis county; Fox, in Stone county; Buffalo, in Baxter county; Buckville, in Garland county; Beaver, in Carrol county; Bruins, in Crittenden county; Lamb, in Jefferson county; Deer, in Newton county; Bear Creek, in Searcy county; Bass, in Newton county; Pike, in Pike county; Shark, in Yell county; Bee Branch, in Van Buren county.

Gabriel appears in Pope county, and Aurora rises in Madison county.

There is a Bay in Craighead county, a Bayou Meto in Arkansas county and a Bayou Macon in Chicot; a Locust Bayou in Calhoun county; Wolf Bayou, in Cleburne county.

We have Hot Springs in Garland county, and Cold Springs in Saline county.

There is a plain Bird, in Benton county, and a Red Bird, in Montgomery county.

There is a Morning Star, in Greene county, and Bright Star, in Miller county. A Comet appears in Little River county.

There is a Fair, in Phillips county; a Pond, in Benton county; a Flag Stone in Stone county; a Coal Hill, in Johnson county; a Nimrod, in Perry county; a Ball, in Pike county; a Sage, in Izard county; an Earle, in Crittenden county; an Abbott, in Scott county.

There is a Bear in Sevier county, and another in Garland county.

There is Hope in Hempstead county, and Truth will be found in Madison county.

They have Faith, in Jefferson county, and a Treat is found in Pope county, and they have a Banner in Cleburne county.

A Tomato flourishes in Mississippi county, and a Turnip in White county.

For natural scenery, there are Natural Steps, Natural Dam, Prairie View, and Prairie Grove.

Water courses are represented by Middlebrook, South Bend, Tumbling Shoals, Waters, Washita, Wolf Bayou, Jordan, Turn Creek, Muddy Fork, Shoal Creek: lakes by Lake City, Lake Village, Lakeview, Snow Lake, and Swan Lake.

We find Stamps, in Lafayette county; Cross Roads in Izard county; Fair, in Montgomery county.

There is a Mountain Home, a Sweet Home, Bella Vista and Sugar Grove.

Among feminine names are Rosa, in Mississippi county; Kate, in Crittenden county; Ella, in Pope county; Portia, in Lawrence county; Elizabeth , in Fulton county; Daisy in Pipe county; Bessie, in Lawrence county; Jessieville, in Garland county; Bertha, in Pope county; Tilly, in Searcy county; Florence, in Drew county; Elberta, in each of three counties; Anna, in Crawford county; Irma, in Nevada county; Gracy, in Franklin county; Joan, in Clark county; Barbara, in Washington county; Dora, in Crawford county; Dorothy, in Craighead county.

Newport and Jacksonport, are Arkansas ports.

The fabled El Dorado is in Union county.

England, Scotland and Denmark are in Arkansas; also London, Paris, Belfast, Montreal, Manila and Boston, and there is a Frenchtown in Fulton county.

Dixie is in Perry county.

Both Egypt and Greenland are in Arkansas.

There is a Welcome, in Columbus county; and a Wye, in Perry county.

The trades are represented by a Barber, in Logan county; a Baker in Searcy county; a Potter, in Polk county.

Celebrated proper names are Richmond, Jackson, Lamar, Lamont, Carlisle, Houston, Cato, Pike, Taft, Victoria, Alexander, Ben Hur, Berry, Bingen, Elizabeth, Dumas, Dryden, Scipio, Johnson, Dewey, Poe, Gladstone, Fulton, Van Buren.

The "dales" are Vandale, Springdale.

Spring Valley, Ferndale Mabelvale.

There is a Bull Town, in Woodruff county; and a Sugar Grove, in Logan county.

There is a Fancy Hill, in Montgomery county; and a Social Hill, in Hot Spring county.

We pass from Amity, in Pike county, to Friendship in Clark county, and to Bliss, in White county.

Names of presidents are represented by Washington, Lincoln, Harrison, Garfield, Taft, Johnson, Taylor, Jefferson, Madison, Arthur and Hoover.

Biblical names are Palestine, Jerusalem, Damascus, Jerico, Gethsemane, Mount Olive and Antioch.

There is a Pilot in Fulton county, and Pilot Knob is the name of a high mountain in front of the Melbourne cave in Izard county.

You can cross the Rubicon in Saline county.

When Timothy Flint visited Arkansas in 1830, he mentioned in his book the following 18 leading towns in Arkansas:

Arkansas Post (the first settlement, now almost extinct); Harrisborough (now Harrisburg); Villemont (seldom heard of now); Greenock (the county seat of Cross county from 1826 to 1836, but long since washed away by the Mississippi); Hempstead Courthouse (Washington); Lafayette Courthouse (now Lewisville); Jackson (Jacksonport); Miller Courthouse now Texarkana); Jacob's Staff (he lost it); Helena; Scotia (named for John R. Homer Scott); Acropolis (Arkoplis-Little Rock); Franklin (a former village in St. Francis county, and now the name of a town in Izard county); Paraclifta (a ghost town); Corea Fabre (Camden); Warm Springs (Hot Springs).

Only three of these places retain their own names.

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From the People

VOICES OBJECTION TO NATIONAL PARK

Feb 5-1928

Yellville Man Points Out Danger of Heavy Increase in Taxation.

To the Editor of the Gazette:

Everybody would be glad to have parks and playgrounds established throughout Arkansas, to afford recreation for our people and attractions to visitors from other states. Creation of the proposed Ouachita national park, under government control, probably would result in wide advertising of Arkansas in that respect, and perhaps would benefit many people employed by the government to supervise the reservation, as well as those expecting to sell lands in that area. On the other hand, it may prove in the long run to be most costly to development enterprises in that region and to the state as well.

Sale of 30,000 acres of land, or more, which it is proposed that the government take over, would deprive the state of taxes it now receives from that source; besides, it would mean that no other lands which are now open to entry in that region would become subject to taxation by the state in the future, as all would be under government control.

Sections of the Western country thus tied up should serve as a warning to Arkansas. As an example, the state of Wyoming pays about $1,000,000 a month in the federal Treasury on lands within the state that are leased from the government for mineral purposes, and which are exempt from the taxing power of the state. Thus, its schools and other institutions languish for support, while its natural resources are being depleted and the revenue goes to the federal government, which gives nothing in return. Arkansas now is recognized among the ablest mineral experts of the country as being foremost in undeveloped mineral wealth. Engineers of the American Mining Congress, after having spent four years of research on mineral deposits of this and other Southern states, have proclaimed Arkansas as a leader in variety and volume of undeveloped mineral resources; and they are now encouraging the mining fraternity of the nation to bring development enterprises here, rather than go to foreign countries to open new mining fields. That the Ouachita region contains extensive mineral deposits is recognized not only by engineers of the mining congress who have explored them, but also by other reliable authorities. To withdraw those lands from private use and development and place them under government control would cripple not only development of the mining industry there, but also kindred enterprises that would follow in its wake. On top of all that, the state of Arkansas will be a heavy loser of future revenue in taxes on those lands and the possible industries which they might form the basis of bringing in.

There is grave doubt if these probable consequences of government control over that section would be compensated by public benefits from the proposed national park. Assuming that the region under consideration is feasible as a playground resort, then it could be successfully promoted under private enterprise, in like manner as ohter popular tourist resorts have been established in the Ozark region.

ARY 5, 1928.

The constant encroachmert of the government in taking control within the states and over private enterprise, is a menace to state rights and individual liberty that should be guarded against.

J. H. Hand.

Yellville, Ark.

From the People

State Geologist Favors National Park in Ozarks Region.

Gazette 2-19-'28

To the Editor of the Gazette:

I notice in the Arkansas Gazette of Sunday, February 5, a letter from J. H. Hand of Yellville which contains the following statement: "That the Ouachita region contains extensive mineral deposits is recognized not only by engineers of the mining congress, who have explored them, but also by other reliable authorities. To withdraw those lands from private use and development and place them under government control would cripple not only development of the mining industry there, but also kindred enterprises that would follow in its wake." Mr. Hand brings this forward as one reason why the establishment of a national park in the Ouachita region would be of doubtful benefit to the state.

The question is, of course, whether public or private enterprises in the state may lose more through the lack of such developments than they would gain through establishing a national park in this area. I am vitally interested in the development of the mineral resources of the state, but I believe that, in this particular case, the objection raised by Mr. Hand is not a serious one. It should be remembered that the portion of the Ouachita mountain region, in which it is planned to establish a park, occupies 166,000 acres in eastern Polk and western Montgomery counties, or only approximately 10 per cent of what may be fairly considered to be in the area of the Ouachita mountain region, so that whatever mineral developments or industries may be affected should be considered in connection with this portion of the Ouachita region only. The mineral values of the area under consideration include: (1) Manganese and small amounts of silver, copper, zinc, lead and other metallic minerals. (2) Slate. (3) Novaculite. (4) Miscellaneous minerals such as clay, fuller's earth, building stones, mineral waters, tripoli, quartz crystals, etc. The question of the mineral possibilities of the area is ably answered in the following reports which are of high quality. These include the state publications: "Geology of West-Central Arkansas," with especial reference to gold and silver, by Comstock; "Manganese, Its Uses, Ores and Deposits," by Penrose; "Whetstones and Novaculities," by Griswold; "Slates," by Purdue; "Igneous Rocks," by Williams, and the federal reports: "Manganese Deposits of the Caddo Gap-DeQueen Quadrangle," by Miser; the "Hot Springs Folio," by Miser and Purdue, and the detailed geologic map of the Caddo Gap and DeQueen quadrangles, by Miser and Purdue, not yet published, but on file in this office. The report by Dr. Payne, consulting engineer of the American Mining Congress, on the "Undeveloped Resources of the South," has not yet been published, and consequently, has not been examined.

The facts contained in the reports published make up the main body of detailed information which is now available on this region. The men who wrote them were all competent men and in every case, estimates of the economic values represented by the minerals considered are discussed. From the consideration of the facts brought forth in these reports, the mineral values now known to exist within the Ouachita park area cannot, I believe, be counted upon with any degree of certainty to produce returns, either to private enterprises or the state government, which would be fairly comparable to the relatively certain and comparatively large returns which would accrue to private enterprises and the state from the establishment of a national park.

Concerning the situation in Wyoming, Mr. Hand states: "Sections of the Western country thus tied up should serve as a warning to Arkansas. As an example, the state of Wyoming pays about $1,000,000 a month in the federal treasury on lands within the state that are leased from the government for mineral purposes, and which are exempt from the taxing power of the state." I have asked John G. Marzel, state geologist of Wyoming, for information on this point. He states that the figures submitted by Mr. Hand of approximately $1,000,000 per month correctly apply to 1924, but that only about one-half of that sum is being paid in 1927. The state government however benefits by the development of these mineral lands to a considerable extent as 37 1-2 per cent of this tax is returned to the state government; furthermore in Wyoming this tax is derived altogether from the large value-producing minerals, oil, gas and coal, none of which can be reasonably expected to be found in paying quantities in the Ouachita area. In addition, the situation in Wyoming is scarcely comparable to that of Arkansas, as the federal government owns about 65 per cent of the total state area.

Mr. Hand's unfailing interest in the mineral development of Arkansas is certainly commendable, but I believe that he will agree, after a careful consideration of all of the information now available, that the loss caused by the non-development of the minerals in this comparatively small area would be, so far as can now be determined, much less than the larger benefits to be derived from the establishment of a national park.

George C. Branner,
State Geologist.

Texarkana Gazette. Col. John R. Fordyce of Hot Springs, J. S. Parks of the Fort Smith Southwest American, and residents of Mena, Texarkana and Fort Smith made up the reception committee that met the train upon arrival in Mena.

The congressmen, together with a number of selected guests, were taken at once to the country estate of Louis Heilbron of Texarkana, located at Cold Springs in the heart of the Ouachita mountains. The party will be entertained there tonight and tomorrow will start on a trip through the park area. The Heilbron estate is located four miles from the nearest telephone at the forest rangers' station and is 14 miles from Mena. Unless plans are changed tomorrow the congressional party plans on going to Hot Springs Saturday.

DESCRIBES GEOLOGY OF PROPOSED PARK

Gazette 2-22-'28

U. S. Geologist Tells Committee of Congress About Topography of Ouachitas.

In a paper describing the geography and geology of the proposed Ouachita National Park, which he read to the Senate and House committees considering the proposal, Hugh D. Miser, geologist of the United States Geological Survey, described this section as one of the most rugged regions between the Rockies and the Allegheneys. More than two dozen peaks rise to an elevation in excess of 2,000 feet, he said.

The proposed park, which is on the western boundary of Arkansas near Mena, covers a large part of Polk county. The eastern boundary is 38 miles from Hot Springs, the southern boundary 70 miles from Texarkana, and the northern boundary 90 miles from Fort Smith. State Highway No. 8 from Hot Springs to Mena runs through part of the proposed park.

Mr. Miser's statement did not touch on the merits of the proposed park, but described the geological features, as follows:

"The proposed Ouachita National Park lies in the west-central part of Arkansas in one of the most rugged regions that is to be found between the Allegheny mountains to the east and the Rocky mountains to the west. On physiographic maps of the United States the park region is clasified as a portion of the Interior Highlands, so named from their central position in the United States. These highlands, as will be noted from reference to such maps are surrounded entirely by plains and lowlands.

"The proposed park embraces a portion of the Ouachita mountains, a mountain system 200 miles in length which extends from Little Rock, at the center of Arkansas, westward into Oklahoma.

"The park area, measuring some 35 miles in length and 12 miles in width, embraces one of the best watered and most rugged portions in the Ouachita mountains. Portions of the area can be reached only by trails, but some roads follow the valleys or cross low gaps through the mountains.

High Mountain Peaks.

"The mountains are east-west ridges with steep slopes and sharp crests and are separated by narrow valleys. More than two dozen peaks and ridges rise to an elevation in excess of 2,000 feet above sea level and the highest rises to an altitude of 2,360 feet. (Editor's note—The National Forest maps show a number of mountains 2,500 feet and above in elevation). Since the lowest elevation in the park area is about 800 feet, the mountains rise as much as 1,560 feet above the streams. Although none of the mountains attain the majestic heights of Pikes Peak or Mount McKinley, they are part of a range whose summits stand higher than any others between the Alleghenies and the Rockies. A panoramic view of the densely forested closely spaced ridges well repays the climber for his ascent, whether on foot or horseback. Most of the mountain peaks in the park area I have climbed and reclimbed on foot in connection with my official duties as geologist of the United States Geological Survey. The crowning achievement of a day's or week's work with me was always the ascent of a tall peak from which a panoramic view of the surrounding country could be obtained.

"The headwaters of four rivers rise within the boundaries of the park area. They are Little Missouri, Caddo, Cossatot and Saline rivers. Also other streams drain into Ouachita river and into Mountain Fork and Little river. The waters of these streams find their way into Red river, one of the main tributaries of the Mississippi.

"The rivers in the mountains are not large, neither are they navigable. They are swift and their courses consist of a series of short quiet reaches separated by ripples, and, as would be expected, they are not bordered by swamp land. The rivers and even most of the small tributaries are perennial and are supplied with water from numerous springs in all parts of the proposed park. The streams are remarkably clear. The spring water is pure, being free from contamination and also from harmful chemical ingredients.

"The rocks of the proposed park area are of many ages—Ordovician, Silurian, Devonian and Carboniferous—and they are of many kinds—shale, slate, sandstone, limestone, chert and novaculite. All the beds of rock stand on edge on account of their intense deformation by folding and faulting. An interesting feature with reference to the geology is that all the mountain ridges are produced by the novaculite, a massive white, flinty rock, occurring in a bed several hundred feet in thickness. In fact, the only occurrences of real novaculite in the United States are in the Ouachita mountains. Much of the novaculite has a closeness of texture and a very waxy luster that readily suggest the physical resemblance of the rock to the white varieties of Carrara marble. The novaculite was a source of material from which the Indians of many states shaped arrow heads, spear points, and hatchets. Also it is the only source of high grade oilstone material in the United States. The present operating oilstone quarries are near Hot Springs, Ark., east of the proposed park. Mines from which magnificent quartz crystals have been obtained and have found their way into all the principal museums of the country have been worked from time to time near Womble and Crystal Springs, a short distance east of the proposed park. Also diamond mines, from which many thousand stones have been obtained, are located near Murfreesboro, some 20 miles south of the park. The proposed park area is thus a portion of a region of geologic interest.

Much Prospecting.

"Much prospecting has been carried on from time to time in the proposed park, for slate, iron ore, manganese ore, and copper ore, but thus far no paying mines of any of these have been developed. Novaculite and chert, that are suitable for modern highway construction, are available in all portions of the proposed park.

"If we may compare the surface features of the proposed Ouachita National park with those of our established national parks, we find no similarity. We do, however, find that the surface features of the Ouachita park area resemble those of the proposed Shenandoah National park in Virginia. It was my good fortune to make a geological examination of the scenic Shenandoah area some 10 years ago.

"In conclusion I may say that the proposed Ouachita park is a region of much geologic and geographic interest.

"I am informed that representatives from Texas and Louisiana are here today to appear for the plan for the Ouachita National park in Arkansas. If the gentlemen from those states had lived at a certain time in the geologic past—say, millions of years ago—they could have established parks in their own states, for then snow-clad mountains towered above the region where there are now cotton fields in Louisiana and eastern Texas. Also the sea covered much of Arkansas then and the nearest mountain retreat for Arkansan as that time would have been the mountains of Louisiana and Texas."

OUACHITA NATIONAL PARK PLAN OPPOSED

Gazette 3/21/28

National Association Backing Opposition to Arkansas Project.

From the Gazette's Correspondent.

Washington, D. C., March 20.—Organized opposition to the proposed Ouachita National Park plan was disclosed today when the House Public Lands Committee granted, at the request of Representative Lewis C. Cramton of Michigan, another hearing on the bill to be held next Tuesday.

It is reported that the National Park Association is backing the opposition which, it is charged by friends of the measure, is incited by what they term government bureaucracy. The fact that Cramton was selected to make the request indicates that the protest will be made primarily from the standpoint of cost, since Cramton is a member of the Appropriations Committee.

Discussion over another hearing also disclosed that opponents of the measure are exerting some pressure in the home districts of members of Congress but indications are, it is said by Representative Wingo of Arkansas, author of the House bill, that this action, aroused resentment of some members and placed the bill in a more favorable light.

There is talk among supporters of the measure of invoking the Caraway anti-lobbying bill to bring about an investigation of the department-conducted lobbying which they say has been used to stir up opposition against the Ouachita Park Bill.

To Summons Witnesses.

Friends of the Ouachita bill are preparing to bring to Washington as rebuttal witnesses such men as William Allen White of Emporia, Kan., and Willis Van Name of New York, connected with the American Museum of Natural History. Van Name has made a study of national parks throughout the country and recently volunteered to appear in behalf of the Ouachita bill if his testimony is needed.

Messages also have come from the Shreveport Chamber of Commerce and the governor of Louisiana to members of the Public Lands Committee urging favorable action on the legislation and to members of the Louisiana delegation in Congress asking for their support. Similar messages have been received from Texas and Oklahoma.

William R. Kavanaugh of Fort Smith, executive secretary of the Ouachita Park Association, is in Washington prepared to marshal the friends of the bill to meet the opposition. He does not intend to call to Washington those who have appeared on behalf of the measure before.

U. S. WILL ENLARGE NATIONAL FORESTS

10,265 Acres to Be Added to Ouachita and Ozark Preserves.

Gazette 6/3/28

Washington, June 2.—(AP)—Purchase of 250 tracts land, aggregating 613,053 acres, for additions to national forests in the Eastern, Lake and Southern states has been authorized by the National Forest Reservation Commission, composed of Secretary of War Davis, Secretary Work, Secretary Jardine, Senator Keyes of New Hampshire, Senator Overman of North Carolina and Representatives Hawley of Oregon and McReynolds of Tennessee.

The purchase of 5,996 acres for the Alabama national forest is authorized in Alabama. These lands are located largely in Winston and Lawrence counties and include a small area in Franklin county.

Other purchases authorized include:

Arkansas: 10,265 acres located in Yell, Perry, Logan, Scott, Pope, Johnson, Newton, Baxter, Franklin, Crawford, Stone and Garland counties, to be added to the Ouachita and Ozark national forests.

Tennessee: 1,497 acres in Sullivan and Union counties as additions to the Unaka national forest and in Polk and Monroe counties as additions to the Cherokee national forest.

Georgia: 7669 acres in Habersham, Rabun, Fannin, White, Lumpkin, Union and Dawson counties as additions to the Nantahala and Cherokee national forests.

PARK COMMITTEE WILL ARRIVE HERE TOMORROW

To Be Guests at Texarkana Before Inspecting Proposed Ouachita National Park.

Gazette 6/6/28

The Congressional Committee which will make an inspection of the proposed Ouachita National Park area in southwestern and western Arkansas the latter half of this week, will pass through Little Rock on the Sunshine Special tomorrow morning, and will be guests of the Texarkana Chamber of Commerce at breakfast. The committee will leave Texarkana shortly after noon and go to Mena, from where an automobile tour of the area will be made.

Lee Miles of Little Rock, chairman of the Arkansas Game and Fish Commission, will join the party at Texarkana, and Governor Parnell will make the trip with the committee, or send a representative. Congressman Otis Wingo will head the party.

The committee is composed of Congressmen Caldon, Utah; Winter, Wyoming; Hooper, Michigan; Houston, Hawaiian Islands; Hill, Washington; Morrow, New Mexico; Johnson, Oklahoma, and Swing, California.

PROPOSED PARK IS STUDIED FROM AIR

Two Congressmen Get Plane View of Scenic Region Near Mena.

Gazette 6/8/28

Special to the Gazette.

Mena, June 7.—After viewing the Ouachita National Park area from an airplane this afternoon, Congressman Joseph L. Hooper, of Battle Creek, Mich., returned to Mena and declared it a wonderful sight. He displayed eagerness to see more of the country tomorrow when a trip by motor car will be made. Another member of the Public Lands Committee, sent here to view the park area, also made the first inspection trip by airplane.

Congressman Don B. Colton of Utah said he enjoyed the trip but did not enjoy the air pocket his plane encountered over the Ouachitas. A drop of 200 feet gave the congressman a thrill but caused no damage. The two congressmen were the advance guard of the Public Lands Committee sent here to inspect the park area. They left the balance of the party at Texarkana and flew to Mena in two planes provided by the Fort Smith Chamber of Commerce. The 100-mile flight was made in an hour and the two members were at the railroad station to meet the remainder of the party traveling in a special car.

Other members of the Public Lands Committee were: Congressmen Charles E. Winton of Wyoming, John Morrow of New Mexico, Sam B. Hill of Washington, Victor S. K. Houston of Hawaii. Accompanying the congressional delegation were: G. A. Hossick of Washington, committee clerk; former Gov. Charles H. Brough of Little Rock, Evan W. Kelly of Washington, district forester; W. R. Kavanaugh of Muskogee, secretary of the Ouachita Park Foundation Society; Hal Gaylord and S. G. Hopkins, officials of the K. C. S. railroad, and Henry Humphrey of the

National Parks