

a production record of around \$6,000,000, realized from prospecting operations, in which ore yields usually more than covered current expenses, that field or challenges comparison with all others for purity and abundance of ore deposits, offering pay dirt from the beginning. Heretofore, the older centers of zinc and lead production supplied normal demands for those minerals. With the depletion of ore reserves in some of the other districts, the mining industry is investigating new fields as a source of future ore supply. With time development of hydroelectric power on the White and Buffalo rivers in the Ozark district, it is conceded by captains of the mining industry that the fields in northern Arkansas will command favorable consideration in view of advantages to be had for electrolytic smelting at the source of production."

714 Watson for Hall  
22 A P Patton Memphis Council Appeal  
6-29-29

## TRI-STATE RAMBLES

By GEORGE M. MORELAND

You know it's quite the style nowadays for columnists now and then, for sake of diversity, to "review" books they receive. Well, I'm here to tell a pop-eyed world I've got exactly as much "nerve" as any other columnist living, or whoever has lived since the dawning days of history. If other columnists review books, I, too, will review books. My loyal and prized readers are just as good as any other columnist's readers, and sometimes I think a bit more erudite and intelligent.

I received a new book the other day and I'm goin' to review it, too. Of course I don't know much about reviewin' books, but I frankly believe I know as much as some other columnists who have assumed to review books.

This book I am going to review was sent to me by the scholarly Arkansas state geologist, Dr. George C. Branner. He didn't write it, though. He only sent it to me. It was written by a man named Israelsky—Merle C. Israelsky—and he is a wise geologist.

I blush to tell my readers the name of this book I am reviewin'. It's got an outlandish name and I'm kinder ashamed of the name, since it was published at my own proud capital city of Little Rock. But, folks, don't none of you think hard of Little Rock about this book's name, because I'm sure the publisher got paid for publishin' the book and the city should not be blamed for the title.

The title of this book which I have perused with unfeigned interest is "Upper Cretaceous Ostracoda of Arkansas." Now ain't that awful? Who would a-thought my own beautiful Arkansas had such an animal as that runnin' loose? I thought the pioneer trappers of Arkansas caught all them "varmint" away back in the '40's of the preceding century.

I'm here to tell a doubtful world this book is a "humdinger." There's more jaw-breakin' Latin words in it than could be found in a copy of Virgil in the original tongue. But that's the way with us Arkansawyers. We're all "smart" that way. We can talk in the language of Cato with exactly the same ease and grace as we talk in our own native "Arkansaw language."

Because I wanted to "review" this erudite book on the "Upper Cretaceous Ostracoda of Arkansas," I wanted to familiarize myself with the subject. I went to a trapper up at my beautiful Tulot and asked him if he'd ever caught a "varmint" by that name. He accused me of imbibin' of too much "Arkansas moonshine" and dismissed the subject.

That discouraged me. Arkansas trappers are skilled in the lore of the woods. If a woodsman didn't know anything about this animal, what could I do?

Well, I returned home and read the book through from "kiver to kiver." It was an awful job and took me nearly all night. But now I'm "wise." Just before 3 o'clock in the mornin' I leaped to my feet, a dawning light passed through my cranium, made of solid ivory, and I exclaimed with all the eclat of a victorious general upon a battlefield, "Eureka! I understand."

Now, folks, this "Upper Cretaceous Ostracoda" is not a "varmint." I'm almost certain of this after I spelled out all the big Latin words scattered, like autumn leaves in a forest, through its pages. "Cretaceous Ostracoda" is, I suspect, some kind of little animals that lived in shells in Arkansas in prehistoric ages when this great wonderland of ours was in a state of cosmos.

I do not—unequivocally do not—recommend "Upper Cretaceous Ostracoda in Arkansas" for light reading on a sultry summer afternoon. But it is a pamphlet which will be prized by those interested in the geology of Arkansas. It is written in a scholarly manner, though of course not catering to casual readers. It is written by a scholar on a scholarly subject for scholars.

The Arkansas Geology Department

ment under the capable direction of scholarly Dr. George C. Branner, indeed "a chip off the old block" for he is a son of Dr. John C. Branner, one of the greatest geologists who ever lived, is doing an unassuming but valuable work in Arkansas. This is a department that does not appeal to the average citizen. Not many are interested in geology. But this department is doing a thorough work, a worth while work and is returning four-fold fruits for the too meager appropriations made biennially for its support by the Arkansas General Assembly.

I might add that my copy of "Upper Cretaceous Ostracoda of Arkansas" has been assigned a place of honor on the shelves of my "Arkansas library." No tellin', maybe when I am dead and friends inventory my personal effects, they'll notice this scholarly treatise on a scientific subject and'll think that maybe, after all, I wasn't so

"dumb" as I always appeared to be. I'll be dead and they'll never know the difficulties I encountered tryin' to read that scholarly treatise on an Arkansas geological subject.

## URGES CAMPAIGN TO BUY DIAMOND CAVE

Dr. Brough Will Try to Raise \$65,000 to Acquire Property for State.

11-13-29

Dr. C. H. Brough, former governor, extension lecturer for the University of Arkansas, who is spending a vacation with Mrs. Brough at Eureka Springs, acting on a suggestion by Justin Matthews, member of the state Highway Commission, will appeal to the citizens of the state to aid in raising a fund of \$65,000 to buy Diamond Cave in Newton county, and 55 acres surrounding it, and presenting the property to the state as a park. Dr. Brough is a member of the State Park Commission.

Diamond Cave, Dr. Brough said, is one of the six great caverns of the United States. It is three miles west of Jasper, is about two and a half miles long, has seven chambers and innumerable stalactite and stalagmite formations.

The cave was discovered by Sam Hudson in 1834, and the land selected as a homestead in 1891 by James White. It was bought in 1922 from the White heirs by Jonas Pruitt for \$1,200, and sold by him in 1925 to the Diamond Cave Corporation for \$14,000, including the 47 acres surrounding it. The corporation bought 200 additional acres and improved the property.

When Dr. Brough talked to Mr. Matthews about improving the three miles of road from Jasper to the cave, Mr. Matthews told him that no highway funds could be used for that purpose, unless the road led to state property. He then offered to contribute \$1,000 toward acquiring the property and presenting it to the state.

Dr. Brough said he will undertake without compensation to raise the \$65,000 required to buy the property, and the money subscribed will be turned over to the state treasurer to be used by the State Park Commission in acquiring the cave property. The people of Arkansas then would own the property and would have access to it without paying a fee.

## SEISMOGRAPH FOR COLLEGE ASSURED

Instrument to Be Installed at Local Institution Soon, It Is Announced.

Installation of a seismograph at Little Rock College within the next few weeks by the National Research Council in co-operation with St. Louis University, the State Geological Survey and other agencies, has been assured following inspection of the proposed location by Dr. James B. Macelwane of St. Louis University, the Rev. James P. Moran, president of Little Rock College, said yesterday.

The Science Department of the local college will assume responsibility of caring for the instrument and of making readings and reports to be sent to Dr. Macelwane and others, who will compare the readings with records of other seismographs in the Mississippi valley.

It will be necessary to install the instrument on bed rock in an absolutely dark room, as it makes photographic records. An opening probably will be made through the concrete floor in the basement of one of the college buildings, President Moran said. Foundations of all buildings at Little Rock College are on solid rock and it will be necessary to go only a few feet below the surface to find bed rock.

The instrument is known technically as a torsion seismometer. It will measure the direction, intensity and duration of all earth shocks within several hundred miles. The National Research Council will furnish a Wood-Anderson two-component instrument for installation here.

The council is seeking a location in western Tennessee or Kentucky for installation of another instrument. Records of the two new instruments, considered with readings of similar instruments at St. Louis, New Orleans and Cincinnati, will afford an opportunity to check up on the numerous minor earthquakes which occur in the region bordered by northeastern Arkansas, southeastern Missouri, southern Illinois and western Kentucky and Tennessee.

C. Branner, state geologist, said that scientists should be able after several years of observation, to determine how rapidly and to what extent seismic adjustments are occurring in the region, and to forecast with a fair degree of accuracy when earthquakes may be expected.

An effort is being made to have Congress appropriate funds to provide for additional coast and geodetic surveys in large unsurveyed areas which include part of the Mississippi valley earthquake zone. When basic lines are established by such surveys it will be possible to determine the extent of earth shifts following earthquakes, Mr. Branner said.

## MINERAL WEALTH OF ARKANSAS IS OF IMPORTANCE

Arkansas is one of the most important mineral states. Its most valuable product is petroleum, which was discovered in the southern part of the state, adjacent to the producing Louisiana oil field, in 1921. The annual production the first year placed Arkansas fourth among the states in oil production and, with this new field much extended, she has since outranked Pennsylvania, the pioneer oil state, in total production. Natural gas is found in two separate fields—in the oil regions of southern Arkansas and in the oil-bearing area of western Arkansas. Next in importance is coal, of which Arkansas produces a fine grade of both bituminous and semi-anthracite.

From Arkansas the world obtains 70 per cent of its supply of bauxite, the ore of aluminum. The output is 500,000 tons annually.

The only diamond mine on the North American continent is in Arkansas. One gem has been obtained weighing 20 1-2 carats. The stones are of the finest quality, equal in every respect to those of South Africa. A \$300,000 reduction plant is operated by a \$100,000,000 company in the production of these diamonds. The diamond field is in Pike county and the producing area is restricted to a few acres.

Precious pearls are found in mussel shells taken from the fresh water streams of north Arkansas. Single gems have brought as high as \$7,000.00. The shells of the mussels are used for the manufacture of the pearl buttons of commerce, and five button factories are operated in the state.

A fine quality of whetstone, or oilstone is found in the Ouachita Mountains of southwest Arkansas. This is a hard novaculite rock of many beautiful tints. It is shipped to all parts of the world.

Among other minerals are pottery, fire and brick clay used in a number of industries. There are vast deposits of granite near Little Rock and marble at Batesville, while limestone and sandstone are found in various parts of the state. Zinc and lead are mined in the northwestern counties; manganese deposits exist in northern and southwestern Arkansas, and antimony, silver, iron, slate, glass sand, soapstone, asphalt, chalk, fuller's earth, graphite, gypsum, orthophosphate rock and tripoil are found elsewhere in the state. The total value of all mineral products in 1922 is estimated at \$60,000,000.00.

Little Rock Daily News, Sept. 1929

# RECENT DISCOVERIES 1924 BEAR OUT LEGEND

## Story of Two Indian Lovers Revived After Findings Near Diamond Cave.

Special to the Gazette. 8-11-29  
Kingston, Aug. 10.—Recent discovery of a handful of flint arrowheads and a few irregular lines of gray dust, (believed to be the residue of a human skeleton) in an isolated cave near here, lends color to the story of "Irr," a supposed legend of the famous Diamond Cave.

Deep in the recesses of Diamond Cave stands a glistening white stalagmite known as "the Angel of the Grotto." This formation presents a remarkable resemblance to a draped female figure. Around this stalagmite, no doubt, the legend was woven.

Following is the legend that has been handed down for generations:  
In the dim past, when this country was called "Zonanka," which in English means hunter's paradise, there came a band of strange, artistic people from the land toward the setting sun. Their skins were pale, and they possessed woven blankets, and queer weapons, that were strange and wonderful to the Zonankas.

They were footsore and emaciated as a result of their long journey, and the Zonankas received them kindly and allowed them to rest by a big spring above a tumbling waterfall. The strangers made it known that they were one of several scouting parties sent out by their chief to find a new location for their people who were being annoyed by the barbarous tribes of the plains. Having been driven from the fertile valleys far into the canyons where water and game were scarce, they were slowly but surely perishing. Hence the desperate search for a better locality for their lodges.

After a few weeks sojourn with the Zonankas, the band departed toward the country from whence they came, leaving only one of their leaders, Tal-na-toka, to complete arrangements for the return of his people to the hills of Zonanka.

Tal-na-toka with his mate, and his beautiful daughter, Irr, were content and happy in their new environment.

Little Irr developed a spirit as cheerful and happy as the birds that were so strange and charming to her; a character and physique as pure and superb as the flowers that bloomed around her. Her playground was the primitive forest; her companions, the beautiful creatures of nature. Plump and rosy she grew as her father awaited the return of his people, from whom, no tidings ever came to Zonanka.

As Irr became more familiar with her surroundings, she extended her rambles farther and farther, always eager to learn of mysteries just beyond, in this vast world of fragrant trees and crystal streams. On morning, as she rambled a little deeper than usual into the forest, she was startled to find herself face to face with a young Zonanka brave, who, like herself, was the model of physical perfection. Over his shoulder was slung a long bow and a quiver of arrows. In his hand he carried a basket which he had constructed from leaves of the hickory tree, and which was filled with wild strawberries.

Irr instinctively felt the terror that the presence of one of the savages of her Western homeland always produced, but was quickly reassured by the pleasant smile of the Zonanka as he extended the basket of berries.

Irr had already acquired considerable knowledge of the Zonanka dialect and they were soon conversing. It so happened that they met again and again. Irr endeavored to keep her innocent romance from her father for she knew him to be stern and cruel. She also knew that he looked upon the dark skinned Zonankas as inferior. But, in spite of her careful efforts at concealment, he discovered her secret with the results she has expected and feared.

He came upon them as they sat near the little waterfall that was their favorite retreat. In fury, he seized his daughter by the hair to drag her away, when Nikeesi, the Zonanka, lithe and ferocious as a panther, sprang upon him. The attack was so sudden and furious that Tal-na-toka was confused and helpless. Irr saw her father being literally torn to pieces.

"Spare him," she cried, "he is my father."

Nikeesi smiled upon her as he turned from the prostrate Tal-na-toka, saying, "He will soon recover." Then taking up the bows and arrows, the two lovers, hand in hand, disappeared into the forest.

Tal-na-toka soon recovered from his dazed condition, vowing vengeance upon the Zonanka panther, who had so outraged his dignity and humbled his pride. He would trail them down and slay, not only the Zonanka, but his faithless daughter also.

Like a bloodhound he soon found their trail and hastened after them. Suspecting that they would be followed, Nikeesi was ever watchful as they sped on toward the village of his people.

## "Angel of the Grotto," Stalagmite in Diamond Cave, Basis of Indian Legend



suddenly Nikeesi thrust Irr into the shelter of a projecting rock. At almost the same instant she heard the twang of his bow-string, also the thud of a bolt from a cross-bow that found its mark in Nikeesi's arm pit.

Irr did not know that Nikeesi had slain her father. Her only concern now was to help and shield her lover from further attack. She removed the cruel bolt from his body, which, after all, had inflicted only a flesh wound. But her heart was heavy for she was known that her people fought their enemies on the plains with poisoned bolts.

They hastened on and hid themselves in a giant cave. Irr made her wounded lover a comfortable couch of cedar boughs and kindled a fire to dispel his gloom, and to warm their hiding place. Then she watched by his side, no one knows how long.

And even today, her spirit stands guard at the portal of her lover's death chamber, and her body, changed to glistening white stone, stands as a shrine to the goddess of love and devotion.

### Geodetic Survey Engineers at Work Near Osceola.

Special to the Gazette. 8-14-29  
Osceola, Aug. 23.—Work on the geodetic survey, which will form a basis for all future flood control work in the Mississippi valley, is under way in this section.

One of the triangular stations indicated by steel towers from which observations are made has been built just south of Osceola on the North and South highway and the party will be at work in and around Osceola for a week, it is said by Jasper S. Bilby, chief of the party. The survey is being made of the valley from Cairo to New Orleans.

**Incorporation Matters.**  
The Arkansas Mineral Products Company of Little Rock filed articles of incorporation in the office of Secretary of State Jim B. Higgins yesterday. The capital stock consists of 400 shares of, no par value. T. P. Foster, E. E. Moore and Harrison Howe are incorporators.

## GEOLOGY

By JOHN A. MALONEY.

IN Illinois the State Geological Survey directly cooperates with road-building engineers. Builders of highways realized that something was lacking in their technique. A few months after they had laid down a roadbed things began to happen—things that are known to the geologist as landslides and earthflows, sod-creep and face-slump, settlement of fills and collapse of peat terraces. If the road was repaired there was always the possibility that the trouble would recur. The road engineers found the State geologists not only ready to help them but that they had already made studies of the conditions which road builders had to face. Thanks to this cooperation, Illinois can use the gasoline tax which went into effect on Aug. 1 to

maintain its roads reasonably well. It is reasonable to expect that the State Geological Survey will be able to help in this work.

### Geological Survey Bulletin Now Ready for Distribution.

A bulletin published by the Arkansas Geological Survey on the "Upper Cretaceous Formations of Southwestern Arkansas," has been received from the printer and is ready for distribution. G. C. Branner, state geologist, announced yesterday.

Field work for the survey was done by the United States Geological Survey and the report was written by Carl H. Dane, associate geologist of the United States Geological Survey. The project originally was intended as a cooperative venture by the state and federal departments, but the state department was unable to pay any part of the expense of the field work, and it was continued by the federal department. The state department then published the report.

Mr. Branner said the report contains geological information of great value to those interested in the economic possibilities of the area affected. The upper cretaceous area includes portions of Clark, Pike, Nevada, Hempstead, Howard, Miller, Little River and Sevier counties. The formations found in that area are the source of nearly all of the oil and gas produced in southern Arkansas, where they are covered by considerable thicknesses of younger beds, Mr. Branner said. A detailed knowledge of the characteristics and sequence of these formations as determined by a surface examination is of direct value to an understanding of the geology of both the producing and potential oil and gas areas of the southern part of the state, he said.

The bulletin contains 215 pages and many plates and illustrations, as well as a detailed geological map of the area. It will be distributed by the state geologist at cost, which is \$1.50 at his office for paper binding and \$1.85 for cloth binding. Mail orders should include 10 cents additional for postage, Mr. Branner said.

## AIDS ROAD-MAKING

### Illinois Scientists Help in Avoiding Difficulties

must be considered in most phases of engineering work, whether it be mining or quarrying, highway and railway construction and maintenance, recovery of water or oil from underground strata, creation of surface water reservoirs, flood control and navigation, adequacy of foundations for skyscrapers and large bridges, excavations for canals and tunnels. From engineers engaged in all of the above types of work some inquiries to the State Geological Survey at Urbana calling for aid in the solution of their problems.

That the construction engineer should look to the State Geological Survey for aid by no means indicates a lack of knowledge on his part; it shows that the engineer of today realizes the interdependence of all branches of science. The construction engineer must deal with earth

materials and inasmuch as he must ascertain what geological conditions are likely to affect a proposed project or have already interfered with its success, he finds in the geologist a valuable ally.

### Unstable Roadways.

According to Dr. M. M. Leighton, chief of the survey, and Dr. G. E. Ekblaw, engineering geologist, it was the program of construction of the State highways that was chiefly responsible for bringing about the cooperation between the highway engineer and the geologist, resulting in a new branch of geology, known as geological aspects of highway building and maintenance. The problems for which geological assistance has been most frequently sought are those involving land-slides and earthflows. The survey found that landslides may affect a road in several ways. They may slide down upon the slab and more or less completely block the road; they may slide from beneath the slab and cause it to collapse; they may dislocate the slab laterally; or they may cause the upheaval of the slab.

On the outskirts of Chicago, at Ninety-fifth Street and Archer Avenue, highway engineers found the roadway blocked on several occasions. In Starved Rock Park the entire pavement slipped into a canyon. Yet the causes in these two cases were entirely different, although certain fundamental conditions were the same. The survey discovered the existence of a body of porous material through which ground water soaked with relative ease, and under that was a denser and relatively impervious stratum of clay or shale. Next they found that the position of these strata had much to do with movements of one or both roadways when the material became water-soaked. The water not only wets the whole mass of porous material, but acts as a lubricating agent and causes one stratum to slide over another.

Once a landslide gets under way, the surface water seeps into the irregularities formed by the moving mass and, again as a lubricant, accelerates the rate of movement of the whole mass. The first landslide has hardly taken place when supplementary slides occur above and behind the original one and thus perpetuate the earth-flow.

The problems of sod-creep and face-slump are the more menacing because they are not readily detected and because the ultimate outcome may not be evident. Water from rainfall or melting snow soaks down through the porous sod-layer and upper soil, until it encounters the denser subsoil. The material in the face of a cut absorbs sufficient water to liquefy it and it flows down and spreads out on the road. At several localities in various parts of the State have been found cases of almost every kind of road injury and the Survey has taken up the problem of remedial works.

### Preventing Land Movements.

Up to the present time drainage appears to be the most promising measure to prevent landslides, sod-creep and face-slump. It removes excess moisture; it adds no load to the pendant mass; it is usually least expensive, even in original cost, and its efficacy is almost certain. The aims of proper drainage are surface protection from excessive rainfall and the elimination of subterranean

They must be footed in solid material, so that they will not move with the landslide, and it has frequently happened that they overturn bodily with the weight and expansion of the backfill. Cribbing of untreated or treated logs or of concrete units

is often more effective than a retaining wall.

All of these conditions are part of the study of the geologist, but there are others more clearly related to his field. For example, two miles north-east of Ripley, Ill., where the original proposed route of a highway followed the valley-wall of Crooked Creek, it crossed an active landslide about 1,200 feet long and about 400 feet wide. This slide provided an ideal illustration of the crevasses, depressions and heaves, and demonstrated the fact that trees will not prevent a landslide — they move with it.

### Savings Accomplished.

The geologists who had prospected in that region knew that the material involved consists wholly of glacial till and apparently mantles a preglacial slope of bedrock down which the till moves when lubricated by rain or snow. The toe of the slope is continually eroded by Crooked Creek, so that an angle of rest could never be attained and the landslide was continuous. Since no known measures were applicable, the survey advised against using that route for a highway and thus saved much time and money.

The heaving and shattering of pavement, owing to freezing and thawing, has also come under investigation by the State Geological Survey. One mile east of Lake Zurich, in the Winter, a slab of pavement heaved so much and so unevenly that it became dangerous to traffic. The slab was laid on silt which absorbed so much water that it became fluid, and, with the traffic vibrating, the slab puddled the saturated silt. When the puddled silt froze and expanded, the slab heaved. By making the cut a few feet deeper, so that the slab could lie on till, the condition would be remedied.

In addition to road building, the Geological Survey has been called upon to assist engineers in locating dam sites for reservoirs; solving sewage disposal and pollution problems; determining possible surface subsidence due to coal mining where it is proposed to erect large buildings on the surface; and determining the relation of peat bogs and other material to constructional foundations. In all of these fields of engineering the survey reports that there is still an immense amount of research to be done.

ditches, the emplacement of one or other drains and the insertion of well-points and similar devices. Their proper installation requires a knowledge of local geological conditions, a determination of the source of water and a knowledge of the water volume after heavy rains.

Other methods of checking landslides have also been tried. Formerly, blasting below the base of a slide was practiced, with the idea of roughening the base and providing drainage. But since landslides usually move by internal motion and rarely as units, the roughening process was abandoned. The practice of anchoring a landslide with an internal distribution of rock was also tried, but was found to defeat its own purpose, since it only increases the load. The installation of rows of wood, concrete or steel piling has worked well in some cases and poorly in others.

Solid retaining walls are frequently constructed, but they are expensive, and their efficacy is also uncertain.

## SEISMOGRAPH MAY BE INSTALLED HERE

Little Rock College Selected as Location for Instrument. *11-3-29*

A seismograph probably will be installed at Little Rock College within the next few weeks, in co-operation with the National Research Council and St. Louis University.

Authorities at the local college have agreed to house the instruments and care for them. They will be furnished by the National Research Council. The Rev. James B. Macelwane, S. J., director of the Department of Geophysics at St. Louis University, will come to Little Rock soon to complete arrangements for installation of the equipment.

G. C. Branner, state geologist, who has been notified by the Rev. Mr. Macelwane of the contemplated installation of the seismograph, said it should result in the recording of much valuable information concerning earthquake shocks in the central Mississippi valley.

At present only two seismographs are located in the Southern states, at Mobile and New Orleans. Others are located at St. Louis, Cincinnati and various Northern and Eastern cities.

The Rev. Mr. Macelwane wrote Mr. Branner that location of an instrument in Little Rock would afford a St. Louis-Little Rock base for evaluation of records of slight shocks occurring in this region. Scientists in various parts of the country often have expressed a desire that an instrument be installed in the Mississippi valley area between St. Louis and New Orleans, Mr. Branner said. When the matter was called to the attention of the National Research Council it readily agreed to furnish the instrument without cost.

The Rev. James P. Moran, president of Little Rock College, said if the Rev. Mr. Macelwane finds conditions here suitable for installation of the instrument, Dr. Thomas Smith, head of the physics department, will be assigned to care for the instruments. They require little care, since their only function is to record earth shocks, which they do without further attention or manipulation after being properly installed.

Mr. Branner said slight shocks occur frequently in eastern and northeastern Arkansas and western Tennessee, and that a seismograph in Little Rock should record the slightest of these tremors.

## MINING CONGRESS WILL OPEN HERE MARCH 10

Date for Southern Division Meeting, to Be Held in Little Rock, Is Fixed. *11-3-29*

Washington, Dec. 30. (AP)—The Southern division of the American Mining Congress will hold its fifth annual industrial development conference at Little Rock, Ark., March 10 to 12.

Little Rock was selected several weeks ago as the next meeting place for the Southern division of the American Mining Congress, but the dates were not definitely announced here until the receipt yesterday of the Washington dispatch. Headquarters of the Mining Congress are in Washington.

Convention headquarters will be at the Hotel Marion and meetings will be held in the ballroom. In the adjoining room will be exhibits of the state's natural resources. Hundreds of Arkansans from other parts of the state will be in Little Rock.

## 'Bert' Hoover Once Drew \$40 Per Month From the State of Arkansas

O. S. Rieff of State Auditor's Office Discover Voucher of 1893 Showing Munificent Remuneration of Man Now President. *Dec 15-1929*

When President Hoover worked for the Arkansas Geological Survey as a temporary assistant in 1893, he received the munificent salary of \$40 a month and was carried on the state payroll as "Bert" Hoover.

This bit of history relating to the president was unearthed yesterday by O. S. Rieff, assistant in the office of State Auditor J. Oscar Humphrey. Mr. Rieff, who was a clerk under Auditor W. S. Dunlop in 1893, has been engaged recently in sorting old records in the auditor's office preparatory to burning such records as the law provides shall be burned at certain intervals. In glancing at an old voucher he caught the name of Hoover and upon examining it more closely recognized his own writing in the endorsement, indicating that he issued the warrant in payment of the voucher.

The voucher was issued February 28, 1893, by John C. Branner, then state geologist and father of G. C. Branner, present state geologist. The voucher was issued against the contingent fund

of the state Geological Survey and was for \$189.40, representing the following items: H. S. Williams, temporary assistant, \$30; Bert Hoover, temporary assistant, \$40; G. H. Ashley, temporary assistant, \$75; J. Herrick, typewriting, \$40; telegrams, \$4.40.

G. C. Branner said that Mr. Hoover was engaged at that time in helping his father, Dr. John C. Branner, make a mineral survey of various regions in northern Arkansas. Mr. Hoover's work was mentioned by Dr. Branner in his official geological reports covering the years he was state geologist.

Under the law of that day all vouchers had to be approved by the governor and the Hoover voucher was approved by Gov. William Fishback. It reached the auditor's office through the Bank of Little Rock, eight days after it was issued.

Mr. Branner's family and the Hoover family have been friends for many years. Mr. Branner said President Hoover was known in college as "Bert," and that Mrs. Hoover still calls him by that abbreviated name.

## GOVERNOR ORDERS EFFICIENCY SURVEY

Plans Scientific Study of Entire State Governmental Structure.

TO START IMMEDIATELY

Mr. Parnell Promises to Put Entire Force of His Administration Behind Recommendations.

Governor Parnell announced yesterday that he has completed plans for a "scientific, unbiased and nonpolitical survey of the entire governmental structure of the state of Arkansas," and said work on the project will be launched immediately.

The Bureau of Municipal Research of New York has been employed to make the survey at a cost of \$6,000. The governor said he will issue a deficiency proclamation within the next few days, authorizing the Arkansas Tax Commission to incur sufficient indebtedness to pay for the survey.

Recommendations of the survey agency will be submitted to the legislature in 1931, and the governor said he would throw the entire force of his administration behind all recommendations that will save money for the taxpayers. He added that he would appoint a committee of outstanding citizens to co-operate with the bureau and to receive its report to be transmitted to the legislature.

The governor said the government existing in Arkansas today is the composite ideas of a dozen or more administrations, each of which has added something and few of which have taken off anything.

The Bureau of Municipal Research made surveys in New York, Virginia, Massachusetts, New Jersey, Connecticut, Delaware, Illinois and other states.

Governor's Statement.

The text of the governor's statement follows: "I am going to put the governmental affairs of this state on a sound, economical, business-like basis; and, as the first step in that direction, I have employed the Bureau of Municipal Research to make a survey of the entire governmental structure of Arkansas. The survey will be begun at once, and the report will be filed as soon as the work can be completed.

"The government of Arkansas, as it exists, today, represents the composite ideas of perhaps a dozen governors. It has been built up in a haphazard way, being added to by each succeeding governor or political leader. I fully realize the need of a reorganization of the governmental machinery along lines of efficiency and economy, and have been working for several months on a plan to bring it about.

"Governmental reforms cannot be brought about by hit-or-miss methods. To my way of thinking, politics should play no part in it. In order to eliminate political influences, it is necessary to get an efficient, outside agency to make a complete study of the state government, point out our defects and lay out a program to correct them. Until that has been done, few reforms can be accomplished, because there is no well defined program on which to work.

## Outstanding Men on Board.

"The Bureau of Municipal Research is a nationally known and universally recognized authority on public administration. Its Board of Trustees is composed of such outstanding leaders as Newton D. Baker, President Hoover, Frank O. Lowden, E. B. Harriman, Edwin R. A. Seligman, Raymond B. Fiedick and other equally prominent authorities on questions of government. It was organized in 1907 for research and reorganization work in governmental administration, and has made surveys on which needed reforms were accomplished in Massachusetts, New Jersey, Connecticut, Delaware, Illinois, New York and Virginia. I have a communication from former Gov. Alfred E. Smith of New York in which he states that the saving as a result of governmental reorganization in that state amounts to a very large sum. On October 5, 1929, I received the following response from Gov. Harry F. Byrd of Virginia:

"Answering your kind letter, the survey was made by the New York Bureau of Municipal Research. The cost was approximately \$20,000. The results were eminently satisfactory and the adoption of the report by the General Assembly at a conservative estimate, saved approximately \$800,000. "At its request, I sent to the Bureau of Municipal Research the statutes of this state, which have been thoroughly examined by its experts. After such examination, it has just informed me by letter that it will make the necessary survey in this state for \$6,000, including all expenses.

"I shall issue a deficiency proclamation within a few days to the Arkansas Tax Commission for that amount to pay for carrying on the work. I shall also appoint a committee of our outstanding citizens to co-operate with the bureau and receive its report.

"I am certain this organization will recommend nothing that would retard governmental efficiency. I will throw the entire force of my administration behind all its recommendations that will save the public money. In this program I shall deeply appreciate the assistance and co-operation of all our citizens."

"According to the best information that is available at least 5,000 diamonds were found up to the end of 1919. These included white, brown and yellow stones and a canary-colored octahedron weighing 17.85 carats and a clear, flat stone of 11 carats. Only one company has operated in the field since 1913, and that upon a small scale. However, it is said that sufficient diamonds have been found to defray the small maintenance expenses.

"Magnet Cove is in Hot Spring county, which should be one of the chief points in Arkansas, is almost unnoticed, but more than 140 minerals are to be found in that vicinity. The cove is only 12 miles east of Hot Springs National Park, nine miles northwest of Malvern, and 50 miles southwest of Little Rock. Its area is approximately four square miles and wonder scene.

"We are going to ask the co-operation of all counties in the state to aid us in this great project, which will be a showplace in Little Rock when opened. The exact date will be announced later through the press."

## Arcade Hall Obtained for Mineral Show

Final Plans Made for Permanent Exhibit of State's Resources.

Final plans were completed Saturday to use the entire lobby of the Arcade building, running through the center of the structure from Louisiana to Center streets for a permanent mineral display of Arkansas products, which is being sponsored by the Arkansas Mineralogical Society, it was announced by Richard Buhlis, secretary of the society.

"This will be a most elaborate exhibition, the first of its kind on such a magnitude, and will include specimens of practically all known minerals found in the state of Arkansas," said Mr. Buhlis.

"The exhibits will be contained in 64 standard museum cases, two by six feet long, back to back, and five feet high, with full glass front in order to give the public a perfect view of the minerals.

"Among the minerals to be shown will be clay, pottery, tile and brick, marble, lime, cement and building materials, oil, gas and coal, diamonds, crystals, pearls, bauxite, aluminum, lead, silver, zinc, iron, manganese, whetstone, gold, and other rare minerals. There will be displayed specimens from Magnet Cove, and exhibits from many other counties over the state.

"In the center of the building, the society will maintain an office for headquarters and where an attendant will give out any information concerning the exhibition desired. The laboratory of the society will also be installed.

"There will be no charge to view the exhibits, which will be open to the public at all times.

"With the co-operation of the various counties over the state we expect ever presented in Arkansas and equal to many of the similar exhibitions in larger centers of the nation.

"The only display of mineral from Magnet Cove is now at Berlin, Germany, and when the exhibition in Little Rock is opened, this city can also see the beautiful minerals that come from that place.

"Every month, we receive dozens of letters requesting detailed information about sub-soil structures and mineral deposits which must be answered with apologies because detailed information is lacking. In the absence of detailed and authentic reports covering Arkansas's mineral resources, this state is in much the same position as a mail order house trying to build up its business with no catalogue to advertise its wares.

"Within the borders of the state are vast untouched deposits of valuable minerals and many unexplored regions favorable to the discovery of oil, but Arkansas is unable to tell the outside world about them, and so we have sponsored this exhibition to show the world what lies beneath the soil of our state.

"And there are real diamonds to be found in Arkansas. Four areas of peridotite (diamond bearing rock) near Murfreesboro, Pike county, are described in a report by Hugh D. Miser of the United States Geological Survey. One of these is near the mouth of Prairie creek, has been known to geologists since 1942. The rock was not known however, to be peridotite until 1889, when its true worth was discovered.

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"We are going to ask the co-operation of all counties in the state to aid us in this great project, which will be a showplace in Little Rock when opened. The exact date will be announced later through the press."

## To Open Offices For Mine Display

Headquarters of the Arkansas Mineralogical Society, which is sponsoring the huge mineral exhibition to be placed in the lobby of the Arcade building, will be opened Monday or Tuesday, it was announced Saturday by Richard Buhlis, secretary of the association.

The society will occupy Room 9, in the Arcade building, where a permanent office staff will be maintained to give out information in regard to the proposed free display of mineral products found in this state, said Mr. Buhlis.

The entire lobby of the building from Louisiana to Center streets will be used for this large exhibition, and plans are being made to start the work at once of building museum show cases, which will include 64 of them, five feet in length, he said.

The society is also going to co-operate with officials who are in charge of the mining congress to be held in Little Rock March 10-12, he said.

Many counties over the state are expected to participate in the mining convention, which will feature addresses by many prominent mining engineers and geologists.

## MINING CONGRESS PROGRAM OUTLINED

President of Association Will Be One of Speakers at Conference Here.

Robert E. Tally, president of the American Mining Congress, will be one of the principal speakers at the fifth annual industrial development conference of the Southern Division of the congress, to be held here March 10-12, it was announced yesterday by Dr. Henry Mace Payne, division secretary. Another will be the governor of one of the Southern states.

The announcement was made at a meeting held at the offices of the Little Rock Chamber of Commerce to arrange for the conference. J. H. Hand of Yellville, who represents Arkansas on the Board of Governors of the Mining Congress, was present as were Chamber of Commerce officials and other Little Rock men.

Payne left yesterday afternoon. He will return the latter part of the month and at that time will announce the name of the state executive who is to speak here. The latter and Mr. Tally will appear as speakers at the banquet to be held at the conclusion of the second day of the convention. The speeches will be broadcast from Station KLRA, and efforts will be made to arrange for a hookup of the second and third districts of the Columbia system, to carry the broadcast through the Middle West.

The conference will open Monday morning at the Hotel Marion and will continue through Tuesday. The banquet that night will be held at the Hotel LaFayette. A sightseeing tour will be arranged for Wednesday to take the visitors to Bauxite, Remmel dam, Carpenter dam and other points of interest.

## Speakers on Program.

Other speakers whose presence was said to be assured are Judge R. E. P. Thomas of Bowling Green, Ky.; Herbert A. Brooks, manager of the Fort Harrison hotel, Clearwater, Fla., whose subject will be "Tourists as an Industry"; John B. Reynolds, industrial development manager of the Midwest Utilities Company, Chicago, and McKinley W. Krieger of Washington, chief of the taxation and mineral tariffs division of the American Mining Congress. His subject will be "Taxation and Tariff and Their Effect on the Mining Industry."

Dr. Payne stressed the fact that sessions of the conference and the banquet as well will be open to the public.

Services of four musical organizations will be obtained. They are the Little Rock High School band, the Dixie quartet, the Pullman quartet of Chicago and the Missouri Pacific orchestra. A dance will be held after the banquet.

Besides his duties as secretary of the Southern Division, Dr. Payne is consulting engineer for the entire Mining Congress. He has headquarters at Washington, D. C. Mr. Tally is president of the United Verde Copper Company, Clarksdale, Ari.

Committees appointed yesterday by James J. Harrison, president of the Chamber of Commerce, to arrange details of the conference, are as follows: Exhibits—George C. Branner, J. H. Hand, Richard Buhlis and Frank Gibb. Publicity—Ben R. Hamilton, Dudley V. Haddock and Melvin H. Thompson. Motorcade—Hardin Bale, B. J. Reaves and L. E. Branting. Arrangements—H. Grady Manning, Frank Byrnes and John C. Eakin.

A tea and card party will be held at the Little Rock Country Club on the first day of the convention for the wives of men attending the meeting.

### COMPREHENSIVE EXHIBIT OF MINERALS PROPOSED

Mineralogical Society to Co-operate With C. of C. in Collecting Arkansas Specimens. 1-16-30

The Arkansas Mineralogical Society will co-operate fully with the Little Rock Chamber of Commerce in getting up a comprehensive exhibit of Arkansas minerals for the fifth annual industrial conference of the Southern Division, American Mining Congress, it was said yesterday by Richard Buhlis, secretary of the society. A resolution to that effect was adopted at a reorganization meeting held Monday night. The conference of the Mining Congress will be held in Little Rock March 10-12. After it is ended the society will begin assembling a permanent exhibit. It maintains headquarters in the Arcade building and it is planned to have a double row of showcases, 64 in all, extending through the concourse of the building from Louisiana to Center streets. Assistance of all interested persons in collecting the exhibit will be appreciated, Mr. Buhlis said.

The society was organized in 1928 and was incorporated recently. The following were selected to serve as trustees: J. H. Hand of Yellville, Mrs. Bernie Babcock, D. M. Stewart, J. M. McClerkin and Mr. Buhlis, all of Little Rock. Mr. Hand was elected president, Mr. McClerkin and J. M. Dunkley of Hawes vice presidents, Mr. Buhlis secretary and B. C. Eagle treasurer.

### GOVERNOR RICHARDS WILL SPEAK HERE

South Carolina Executive to Address Mining Congress in March. 1-17-30

Gov. John G. Richards of South Carolina will be one of the speakers at the fifth annual industrial conference of the American Mining Congress, Southern Division, to be held here March 10-12, it was announced yesterday. D. Hodson Lewis, secretary-manager of the Little Rock Chamber of Commerce, received the information in a telegram from Dr. Henry Mace Payne, Southern Division secretary.

The telegram said that five other governors of Southern states were considering invitations to attend the conference and would give definite answers soon. Gov. Dan Moody of Texas was said to be one.

Governor Richards will speak during the afternoon session on the second day of the conference, March 11, and also will appear at the banquet at night. Co-ordination of Southern industrial development will be the main subject of discussion during the afternoon program. Robert E. Tally, president of the Mining Congress, will attend the conference and will speak at the banquet.

Three names were added to the Exhibits Committee yesterday by George C. Branner, chairman and state geologist. One is Mayor F. C. Woodward of Batesville, who came to Arkansas several years ago as the representative of Eastern capitalists and was so well pleased with the state that he made his home at Batesville. He is serving his fourth term as mayor.

The other new members are W. M. Weigel, mineral technologist for the Missouri Pacific Lines, and D. L. Phillips, of the railroad's land department. Mr. Weigel has headquarters at St. Louis. Mr. Phillips is stationed at Little Rock.

# Little Rock Turns Out to Be Millions of Years Old

Little Rock is at least a couple of million years old, and what do you think of that, Mr. Ripley?

If we wanted to be an old man, we'd make you wait until next Sun-

the wild goose chase. He wrote: "If in this expedition we had not the good fortune to discover the emerald rock which gave it rise, we had the satisfaction of traversing a very



THE "LITTLE ROCK" MARKS GATEWAY TO HIGHLANDS.

day to learn the answer to the above riddle, but only cartoonists can get away with teasers. So keep your stamped and addressed envelopes, and read on.

The "Little Rock" referred to is the original one, the small rock on the right bank of the Arkansas river from which the state capital and metropolis derived its name.

In the complacent mind of civilized man that well known rock didn't exist until it was discovered 208 years ago by the Sieur Bernard de la Harpe. As a matter of fact, that outcrop of crumpled shale and sandstone was a geological landmark when you and I were young (amoebas), Maggie.

Of course, that was a bit before the time of geologists, but if they had been among the roamers of the earth in that period, you may be sure they would have been climbing around over the "little rock" with hammer and pestle and mortar, or whatever it is that geologists use on field expeditions.

This "little rock" marks the beginning of the hard shales, sandstones and limestones that make up the hills, mountains and valleys of the northwestern part of Arkansas. South of it there are no hard rocks, big or little. The strata underlying the surface are chiefly soft clays, marls, sands and gravels.

Thus, Arkansas consists of two physiographic divisions which are as unlike as day and night, and the line separating the highlands from the lowlands is sharply defined. It runs from a point near the northeast corner of the state in a general southwesterly direction. (See the accompanying map). The "little rock" is a sort of half-way station on that line.

#### Looking for Emeralds.

Back in 1722 they didn't know about geology; so when that noted Frenchman, Bienville, heard of a green rock on the west side of the "Arkansas" river, he became vastly excited. If the rock was green, it must be emerald. He wanted that rock.

So he dispatched a trusted lieutenant known as the Sieur Barnard de la Harpe on an expedition to explore the Arkansas river, find a green rock and take it back, if possible, to New Orleans.

Bernie the Harp and his adventurous crew journeyed up the Mississippi river, leaving New Orleans early in February of 1722, paddling a fleet of pirogues. They had difficulty, it seems, in finding the mouth of the Arkansas, and the Indians were of little assistance, because the river was known to them as the Nigette.

They found the river they were seeking early in March and began paddling up it. As they neared the site of what is now the City of Roses, they heard more rumors from the Indians concerning the rock they sought. They learned there was a big rock on

the east side and a "petit roche" on the other. The latter, they were reliably informed, was of a greenish hue.

At last they sighted the "little rock" ahead of them upstream. It was the first rock of any description they had seen on the journey up both rivers. The rock was indeed green, and their dream of emerald treasure lasted until the pirogues were within a few feet of the little promontory.

Then, of course, they realized that the greenish tinge was due to nothing more valuable than slime and moss. However, one M. Dumont, an engineer on the expedition, was philosophical about it in his account of beautiful country, fertile plains, vast prairies covered with buffalo, deer, etc. . . . I have no doubt there are gold mines in the country, as we discovered a little stream which rolled gold dust in its waters."

The fertile plains and vast prairies described by M. Dumont were all in the soft-rock section of Arkansas, which is a part of the Gulf Coastal Plain. This part of the state was formed in what George C. Branner, state geologist, calls the Cenozoic era.

The hard-rock section was formed in the Paleozoic era, and is much, much older. Just how much older northwest Arkansas is than southeast Arkansas, Mr. Branner would not venture to say. He intimated that it would run into millions of years, but what's a few million years among friends?

#### Division Almost Equal.

The division of the state is almost equal; the highlands comprise 25,155 square miles, or 48 per cent of the total area of the state, whereas the Gulf Coastal Plain includes 27,370 square miles, or 52 per cent of the state.

If Little Rock had existed as a city in the Paleozoic era it would have been a seaport, because the waters of a pre-historic ocean lapped at the rocky outskirts of the present townsite. And all of eastern and southern Arkansas was the habitat of fishes and other denizens of the deep.

That is why the Gulf Coastal Plain in Arkansas is so vastly different from the highlands. It is not so old, wherefore it is not so wrinkled. In a few million more years, Arkansas may be all mountainous. Anyway, that's our prophecy, and if it comes true we'll say, "Told you so."

Even the venerable Arkansas river notices the difference between the hill country and the lowlands. In its upper reaches it sticks to the straight and narrow and runs along year after year in approximately the same groove.

But after it passes the "little rock" landmark, what happens? It begins to meander, and behave most unbecomingly. It wanders all over the flood plain, and refuses to stay put in its own little bed. All those horseshoe lakes in the neighborhood of the lower Arkansas are partly obliterated records of past meanderings.

Incidentally, therein lies the explanation of why near all of those lakes are shaped like a horseshoe or an oxbow. It comes about in this way:

The current of the stream is deflected from the center of its channel by inequalities in the bed and by stranded obstacles, striking here against one bank and there against the other. The current is stronger on the side toward which it is deflected, consequently the stream tends to cut away its bank on that side and the bends, once they are started, are constantly enlarged on the outer side. At the same time the weakening of the current on the inner side causes the stream to drop a part of its load of suspended sediment on that side and thus the old channel is gradually filled.

As a result of these two processes—cutting on one side and filling on the other—the bends in time assume the form of oxbows. With continued development the necks of the oxbows may become narrower and eventually the current may break through and form cut-offs. The ends of the old loops near the cut-offs soon become choked with sediment, and the loops are abandoned by the main stream. They thus become horseshoe lakes. Simple, isn't it?

But, getting back to the "little rock," you'd think a landmark of that age and historical-geological importance would be treated with proper respect, wouldn't you? Turned into a sort of shrine, "Spot of Interest to Visitors," and all that.

Well, go down and look at it—if you can find it. It's under the Missouri Pacific freight bridge and handsomely decorated with garbage, slime, drift, tin cans and other debris. It's a shame; something ought to be done about it.

### FOUR GOVERNORS TO ATTEND MEET

Accept Invitations to Mining Congress Meeting March 10-12.

Four governors of Southern states have accepted invitations to attend the fifth annual industrial conference of the Southern Division, American Mining Congress, to be held in Little Rock March 10-12, it was announced yesterday by D. Hodson Lewis, secretary-manager of the Little Rock Chamber of Commerce.

The four state executives are: John Richards of South Carolina, O. Max Gardner of North Carolina, Bibb Graves of Alabama and Dan Moody of Texas. Special invitations to visit Arkansas were sent to them yesterday by Governor Parnell, who also invited the governors of Oklahoma, Tennessee, Louisiana, Kentucky, Georgia, Virginia, Florida and Mississippi.

Word of the acceptances was received by Mr. Lewis from Dr. Henry Mace Payne, division secretary of the Mining Congress. Dr. Payne will be in Little Rock today to attend a meeting at the Chamber of Commerce, at which plans for the convention will be made.

### MINING CONGRESS PROGRAM PLANNED

Dr. Henry Mace Payne Meets With General Committee for Convention.

Plans for a governors' reception in connection with the fifth annual industrial conference of the American Mining Congress, Southern Division, were announced yesterday afternoon at a meeting of Dr. Henry Mace Payne, Southern Division secretary, and the General Committee in charge of the arrangements. The meeting was held at the offices of the Little Rock Chamber of Commerce.

The conference will be held here March 10-12 and the governors of North Carolina, South Carolina, Texas and Alabama have accepted invitations. It is believed that Governor Hardman of Georgia and Governor Horton of Tennessee also will attend. Governor Moody of Texas and Governor Graves of Alabama have been announced as speakers. Governor Parnell will take a leading part in arranging for the governors' reception, which will be held the first night of the conference.

The banquet and dance to be held on the second night of the conference also will be open to the public. Robert E. Tally, president of the American Mining Congress, and one of the governors, will speak at the banquet. The Missouri Pacific orchestra will furnish music.

The Kentucky Progress Commission of 12 members will attend the conference and will be accompanied by Governor Sampson or his representative, it was said. Industrial commissions of other states will participate.

Several speakers in addition to those announced previously were made known yesterday. They are: H. R. Safford, vice president of the Missouri Pacific Lines; E. N. McGary, president of the Marquette Steel and Iron Company, St. Louis; Dr. J. A. Dickey of the University of Arkansas faculty, and Frederick Woodruff, president of the National Bank of the Republic, Chicago.

# ARKANSAS HAS RIGHT TO TITLE OF WONDER STATE

*(L. R. Daily News, Sept. 1924)*  
South Arkansas, with abundant hydro-electric and steam electric power stations inter-connected, with cotton, timber, rice, oil, gas, clay and other products, its proximity to markets and its practically 100 per cent American population, offers to manufacturers advantages not excelled by any section. Its rich alluvial lands, made of the very cream of the soil of immense areas drained by the Arkansas, Mississippi and White rivers; its fertile hill lands; its long growing seasons and mild winters,

apples and pears may be grown, and the family or farm orchard maintained with only a little more care and labor than is necessary in higher or more northerly sections.

No section of the South and few rich land sections anywhere have better potential markets than are within easy reach of this alluvial section of Arkansas. One hundred and forty miles southwest of Memphis, already the best cotton market in the world and with its packing house and stockyards, destined to become the livestock market for the whole lower Mississippi Valley. Also within easy reach by a night's ride are New Orleans on the South; St. Louis on the North, and Kansas City to the Northwest, and also Little Rock, Birmingham, Dallas and other growing Southern cities within easy reach. In short, the Alluvial Empire of South Arkansas possesses all the requisites for great agricultural production, a soil of surpassing fertility, a mild and healthful climate, abundant sunshine and rainfall, excellent transportation facilities and accessible markets.

provide unexcelled opportunities for successful dairying, poultry growing, fruit and truck growing, and general farming.

No section of the world is developing more rapidly than South Arkansas. Millions have been made in this nature-blessed territory, and the veritable mines of wealth have been only touched.

From 1880 to 1920 the population of Arkansas has more than doubled. In the decade preceding 1920, the increase was more than 11 per cent. Oil discoveries since have increased this rate of growth in South Arkansas. Pine Bluff shows an increase of 27.7 per cent in the 10 years from 1910 to 1920. El Dorado is six times as large as it was when oil was found in January 1921. Camden, Stephens, Smackover, Louann, and other towns in the oil section show amazing growth. While the growth of other South Arkansas cities has not been as rapid or as great, comparison of census figures from 1910 to 1920, and of surveys made since 1920 will prove steady increase in population, industry, commerce and wealth of Stuttgart, De Witt, England, Lonoke, Clarendon, Brinkley, Malvern, Aikdelphia, Morrilton, Russellville, Newport, Paragould, Helena, McGhee Arkansas City, Dumas and other communities.

Arkansas led all states in cotton yield per acre in 1922, and was second only to Texas in total produc-

tion. Mississippi was second in yield per acre, third in total production.

The Department of Agriculture statistics on the 1922 cotton crop for the three leading states follow:

Texas, with an acreage of 12,125,000 produced 3,200,000 bales worth at 23.5c per pound, \$386,575,000; an average of 130 pounds per acre worth \$30.55 per acre; Arkansas with 2,844,000 acres produced 1,040,000 bales worth at 23.6c per pound \$122,720,000 an average of 175 pounds per acre worth \$41.30 per acre.

Mississippi had 3,078,000 acres producing 1,010,000 bales worth \$121,705,000, an average of 157 pounds per acre at 24.1c per pound, at \$37.84 per acre.

But Arkansas is not a one-crop state. Its corn crop in 1922 was worth nearly \$40,000,000 and its rice crop more than \$5,000,000. Arkansas ranks first in quality and yield of rice per acre, and third in total production. Thousands of acres adapted to successful culture of rice are obtainable in the wonderful Grand Prairie section of Southeast Arkansas.

## METEOR FRAGMENT PLACED ON DISPLAY

### Discovered on Farm 11 Miles Southwest of Paragould.

*Special to the Gazette, 2-19-30*  
Paragould, Feb. 18.—What is believed to have been part of the giant meteor, which passed near here yesterday and exploded with a thunderous crash, was found by Raymond Parkinson on his farm a mile and a half north of Finch, 11 miles southwest of here, today. The fragment, resembling volcanic lava and with a high content of iron, weighed about 100 pounds and was brought to this city, where it is on display at the local high school. Parkinson said a large hole was made in the ground where the fragment struck. Many other pieces of the meteor have been found in the Finch vicinity, reports say.

## TONNAGE SURVEY WILL START SOON

### Officials Confer Here With Leaders in Waterway Improvement.

*Special 2/20/30*  
An immediate start on the tonnage survey, necessary to justify expenditure of millions of dollars to construct a navigable channel in the Arkansas river from its mouth to Tulsa, was promised yesterday by Lachlan Macleay, secretary of the Mississippi Valley Association, and Theodore Brent, New Orleans engineer, who will conduct the survey.

The two were here yesterday morning, conferring with Little Rock and Pine Bluff leaders in the waterway movement. They left in the afternoon for Fort Smith, where similar conferences will be held. From there they will go to Muskogee and Tulsa.

Two meetings were held at the offices of the Little Rock Chamber of Commerce. The first was attended by James J. Harrison, John F. Boyle, Fred I. Brown, Justin Matthews, Wallace Townsend, D. Hodson Lewis and Justin R. Hartzog, city planning engineer. Matters related to necessary legislation and general procedure were discussed. The entire program of river development was outlined by Mr. Macleay.

At the second meeting Mr. Brent explained details of the tonnage survey, results of which will be presented to Congress. It was said that the survey would require from three to six months.

The second conference was attended by F. J. Mooney, traffic manager of the Seaman Body Corporation, Milwaukee; N. C. Cagle, traffic manager of the Pine Bluff Chamber of Commerce; C. A. Dunning, president of the Associated Industries of Arkansas and secretary-treasurer of the Seaman-Dunning Corporation, Pine Bluff; George C. Branner, state geologist; J. C. Murray of the Little Rock Chamber of Commerce and James Holloway of the Arkansas State Chamber of Commerce.

## MINING CONGRESS PROGRAM ARRANGED

### List of Speakers Almost Completed, According to Dr. Henry Mace Payne.

*2-23-30*  
Details of the program for the fifth annual industrial conference of the American Mining Congress, Southern Division, were received yesterday at the Little Rock Chamber of Commerce from Dr. Henry Mace Payne, division secretary. The congress will be in session Monday and Tuesday, March 10 and 11, at the Hotel Marion, Wednesday will be devoted to a sightseeing trip.

The list of speakers practically is complete, according to Dr. Payne. Governor Parnell will open the conference at 9:30 Monday morning with an address of welcome and Mayor Robinson and James J. Harrison, president of the Chamber of Commerce, will follow with similar speeches. J. F. Callbreath, secretary of the Mining Congress, will respond.

## Writer Says Ore Detector Located Grave

### 'Ground Radio Machine' May Figure in Recent Mystery.

*2-17-30*  
Hot Springs, Feb. 17.—(Special.)—Shortly after the finding of an open grave and a rifled cast iron coffin, seven miles from here, a local newspaper reporter received an anonymous letter, stating that the grave had been located by means of a "ground-radio machine," made for locating buried gold and silver and other non-magnetic metals, and manufactured in Baton Rouge, La. The letter continued that the manufacturer has several crews which work over the country, hunting buried treasure.

According to the anonymous writer, a box 12 inches long and eight or ten inches square and containing money, perhaps as much as \$20,000 in gold, was taken from the grave and was removed to Little Rock and from Little Rock to Memphis.

Correspondence with newspaper men and the mayor of Baton Rouge developed the fact that a machine, called the "ground-radio machine" and registered in the United States patent office, is manufactured in Baton Rouge by G. O. Maher, W. H. Bynum, mayor and commissioner of public health and safety, wrote that Maher bears a good reputation and has been employed in machine and mechanical work for a number of years, and lately has been making a business of manufacturing and selling the machines.

Charles P. Manship, publisher of the State Times at Baton Rouge, wrote that "Maher, unquestionably,

has an unusual quantity of old metal in his possession."

C. P. Litter, managing editor of the same publication, wrote that he had "proved beyond any doubt that the machine not only detects metals, but to the trained ear, detects several kinds of metals.

Maher told Litter that a friend of his and not he himself made the find in Arkansas. Maher would not say how much was found, but declared that the money bore dates preceding the nineteenth century. Maher said that their custom was to disturb a grave only when it is conclusive that it is that of some Spanish officer or someone else who might have had money buried with the body. Litter declared that the machine had been tested by a postal inspector who found that it would do what was claimed for it.

Police here are authorities for the statement that a machine of this kind, or one similar, is owned by a local resident, who often takes it out on prospecting trips.

## EARTH SOUNDED TO DEPTH OF 30 MILES

### Frenchmen Fail to Find High Temperature and Hot Rocks as Expected.

*2-18-30*  
New York, Feb. 17.—(P)—Man's deepest electrical probe into earth—30 miles—and the surprising story it told were reported to the American Institute of Mining and Metallurgical Engineers here today.

The surprise was failure to find the high temperature and hot rocks expected. Except for reading the messages of earthquake waves, this electrical probe was said to be the deepest man yet has explored by any method.

Two Frenchmen, Conrad and Marcel Schlumberger, originators of the electrical probe, made the 30-mile soundings. Support for the credibility of their daring report was furnished by another speaker, Theodor Zuschlag, who gave their device credit for discovery of underground salt domes in Rumania and Alsace.

The Frenchmen apply an electrical current to the ground at two points, with bare electrodes. The ground completes the circuit. Furthermore, the ground shows resistance to passage of the current and the Frenchmen say that they can measure this resistance.

Measuring it gives a broad picture of the shape, nature and temperature of the rocks beneath, they say, because the amount of resistance depends upon the character of crust. The depth of measurement is about one-quarter the distance between the two electrodes on the surface.

In Brittany, France, in the neighborhood of Vitre, they set two electrodes 125 miles apart. This gave them about 30 miles of depth.

"The authors," their report says, "had expected to find lowering of resistivity at very great depths, due to the rise in temperature of the rocks, but this was not the case. Perhaps it will be necessary to reach much greater depths in order to discover such a diminution.

"The experiments at Vitre should be considered only a first attempt by this method. Although the figures obtained give only an order of magnitude, they demonstrate the possibility of solving the problem."

Only a few hundred watts of electrical energy was employed for the deep sounding.

Zuschlag, a research engineer of New York, described a different kind of electrical feeler, which does not go so deep, about 1,500 feet, but which gives considerable detail down to that level. This process is electromagnetic and is in fairly wide use in oil prospecting. It was developed by Karl Sundberg of Sweden.

## STATE RESOURCES OF MINERALS RICH -- MANY VARIETIES

*(L. R. Daily News, Sept. 24)*  
Until the comparatively recent oil discoveries coal has been the most important item in Arkansas' large mineral resources. Coal is mined near Russellville. The heat value of this coal, which varies between 13,700 and 14,700 B. T. U. and its specific gravity (averaging 1.35) rank it among the best coals in the United States.

Local needs for coal are restricted by the existence of oil, natural gas fields in Arkansas producing efficient fuels at low costs.

The El Dorado field, from which oil to the value of \$23,000,000 was produced in the first year was discovered in 1921. In 1922 a second field was brought in at Smackover, in the same general section of the state and later oil was found at Stephens and Louann. These discoveries have added considerably to the wealth and population of South Arkansas and furnish a cheap and ail to be helpful in stimulating industrial development. In oil development Arkansas now ranks fourth among the states

At 10:30 this first general session will begin with Erskine Ramsey of Birmingham, Ala., presiding. Mr. Ramsey, who is chairman of the Board of Governors of the Southern Division, will report on industrial progress in his state. Other state reports will be given by J. H. Hand, Arkansas; Leadley Ogden, Florida; Dr. Poole Maynard, Georgia; Capt. R. M. Watt, Kentucky; W. F. Chisholm, Louisiana; James H. Skewes, Mississippi; Col. J. W. Harrelson, North Carolina; W. W. Smoak, South Carolina; Maj. Rutledge Smith, Tennessee; W. E. Dickerson, Texas, and Dr. Wilbur A. Nelson, Virginia.

Reception Planned.  
Speakers at the afternoon session will be H. R. Safford, Houston, Tex., executive vice president, Gulf Coast Lines; E. M. McGarry, St. Louis consulting engineer, and McKinley W. Krieh, Washington, chief of the Tax and Tariff Division of the American Mining Congress. A reception for visiting governors, officials of the Mining Congress and delegates to the conference will be given Monday night by Governor Parnell.

The following speakers will appear on the Tuesday morning program: Herbert A. Brooks, manager Fort Harrison hotel, Clearwater, Fla.; H. C. Couch, Pine Bluff, president of the Arkansas Power and Light Company; Dr. J. A. Dickey of the University of Arkansas faculty, and W. E. Dickerson, San Antonio, Tex., director of development for the Central Power and Light Company.

Gov. Bibb Graves of Alabama will have charge of the governors' conference, to be held that afternoon. Executives of several other Southern states will take part in the discussion, the theme of which is to be co-ordination of Southern industrial development.

Dr. Payne will be toastmaster at the banquet to be held Tuesday night. Robert E. Tally, president of the American Mining Congress; Gov. Henry H. Horton of Tennessee; Gov. L. G. Hardman of Georgia and Judge R. E. P. Thomas of Bowling Green, Ky., will speak and their addresses will be broadcast over the Columbia system.

## SEISMOGRAPHS WILL BE INSTALLED HERE

### Two Instruments at L. R. College Will Record Quakes in Valley.

Little Rock soon will play an important part in an exhaustive study of the earthquake risk of the Mississippi valley, including that most likely locality, the New Madrid region, which, in the winter of 1811-1812, suffered one of the most violent series of quakes in the history of the United States.

Two modern seismographs, which were delivered to Little Rock College several weeks ago, will be installed within a month, it is said by the Rev. John J. Healey. Construction of the vault for the instruments is under way, and concrete will be poured today for the pier on which the seismographs will rest.

A recent grant was made by the National Research Council for the purchase of seismographs for two new stations in the Mississippi valley south of St. Louis. Little Rock was chosen for the site of one by the Rev. James B. Macelwane, S. J., director of the Department of Geophysics at St. Louis University, and a member of the committee of the Division of Geology and Geography for the field study of earthquakes. He has charge of the study of those quakes which occur in the New Madrid region.

Little Rock College, he reported, is ideally situated for such a station, being on the Paleozoic rocks of Pualaski Heights and almost on the line which divides Arkansas into two almost equal divisions of uplands and lowlands.

The site for the other new station in the New Madrid region will not be chosen until the Rev. Father Macelwane returns from Europe, where he is on leave of absence for study and travel. The two seismographs ordered recently by St. Louis University will be used temporarily by the university until the second new station is decided upon. Neither will come to Little Rock, because Little Rock College already has the pair which will be installed here.

One of the two seismographs to be installed here will record the north and south motion of the earth, and the other will record the east and west motion. Both will be placed on a concrete pier, six by six feet, and extending seven feet into the earth to solid rock.

Excavation for the pier was under the guidance of George C. Branner, state geologist, who aided college authorities in locating solid Paleozoic rock. The vault is situated in the north end of the basement of Byrne hall.

The pier is being built in line with the true astronomical meridian, north and south, rather than the magnetic meridian. It deviates only a fraction from the north and south line of the building, since that section of Little Rock was laid off according to the true astronomical meridian, while the old city was laid off by the magnetic compass.

To increase efficiency of the local station, rods are being sunk several feet into the solid rock to communicate any movement of the earth's crust to the pier and thence to the instruments.

When the pier is completed, the two instruments will be installed under direction of the Rev. Joseph S. Joliat of the Department of Geophysics at St. Louis University. When they have been fully tested, the station will be turned over to the college, which will maintain it and keep detailed daily records of earth movements and disturbances.

Operation of the seismographs is photographic; that is, a record of movements is made on a sensitized paper which will be removed once each day from the drums of the instruments, developed and studied for research purposes.

Results will be published at intervals in St. Louis in the name of Little Rock College.

The Little Rock station will cover what is known as the southwest side of the New Madrid area. Memphis was considered for the southeast side station, but was found unsatisfactory.

## RAILROAD MEN TO ATTEND CONGRESS

Will Be Here for Mining Convention, According to Division Secretary.

A list of 20 railroad officials who have signified their intention of attending the fifth annual industrial conference of the American Mining Congress, Southern Division, to be held here March 10-12, was received yesterday at the Little Rock Chamber of Commerce from Dr. Henry Mace Payne, division secretary.

The list follows: H. W. Morrison, Little Rock, assistant freight traffic manager, Rock Island Lines; M. C. Burton, Chicago, general industrial agent, Atlanta and West Point railroad; J. A. Stewart, Chicago, industrial commissioner, Rock Island Lines; J. L. Weeks, Chicago, commercial agent, Illinois Central System; P. E. Odell, Mobile, vice president of Gulf, Mobile and Northern railroad; J. G. Carlisle, W. M. Weigel and Matt Lucy of the Missouri Pacific Lines, St. Louis; H. R. Wilson, Little Rock, general freight agent, Missouri Pacific Lines; J. C. Williams, Washington, D. C., manager development service, Southern Railway; H. H. Wilhoit, Southern Railway, Washington, D. C.; E. L. Robison, St. Louis, general industrial agent, Mobile and Ohio railroad; G. A. Cardwell, Wilmington, N. C., agricultural and industrial agent, Atlantic Coast Line; J. H. McCabe, Chicago, assistant freight traffic manager, Santa Fe; J. M. Kurn, St. Louis, president Frisco railroad; William Crooks, Shreveport, industrial engineer, Louisiana and Arkansas railroad; Tom P. Walker, Beaumont, Tex., president Gulf States Utilities Company; J. B. Payne, Dallas, vice president, Texas and Pacific railroad; J. M. Mallory, Savannah, Ga., general industrial agent, Central Railroad of Georgia.

It was announced yesterday that W. W. Smoak, speaker of the South Carolina House of Representatives, had been designated by Governor Richards as his personal representative at the conference. Mr. Smoak has been a member of the South Carolina legislature 11 years and only two other present members have served longer. He also is chairman of the Natural Resource Commission of his state.

Mr. Smoak is editor of a newspaper at Walterboro, S. C. He will preside at the fourth general session of the conference, Tuesday afternoon, March 11.

## MINING CONGRESS OFFICIAL COMING

Dr. Payne to Arrive Today to Complete Plans for Convention.

Dr. Henry Mace Payne, secretary of the Southern Division of the American Mining Congress, which will hold its fifth annual industrial conference here next week, will arrive today to complete arrangements for the conference. He will remain until the end of the meeting, which will open Monday morning.

General sessions of the conference will be held Monday and Tuesday and a sightseeing tour, taking in Carpenter and Rammel Dams, the Bauxite mines and the Nloak pottery works, is being arranged for Wednesday. Governor Parnell will hold a reception Monday night in honor of visiting governors and other officials of various Southern states, and the annual banquet will take place Tuesday night.

An extensive display of Arkansas ores and mineral products is being arranged by the Exhibits Committee. George C. Branner, state geologist and chairman of the committee, said last night that about 50 organizations and individuals engaged in businesses related to mineral products had been invited to send exhibits. Most of them will do so, he said.

The exhibit will be divided into three sections—metallic, nonmetallic and fuel products. It will be placed in the large room adjacent to the ballroom at the Hotel Marion, where the conference will be held. Among the exhibitors will be the Missouri Pacific and Louisiana and Arkansas railroads, and probably one or two other railroad companies.

Besides Mr. Branner, members of the committee are: Frank Gibb, D. L. Phillips, E. E. Bonewits and Richard Buhlis of Little Rock; J. H. Hand of Yellville, W. M. Weigel of St. Louis and F. C. Woodward of Batesville.

## TO ARRANGE FOR MINING CONGRESS

Meeting Will Be Held in Headquarters at 10 This Morning.

Final arrangements for the fifth annual industrial conference of the American Mining Congress, Southern Division, will be made at a meeting at headquarters of the Little Rock Chamber of Commerce at 10 this morning. Dr. Henry Mace Payne, Southern Division secretary, will confer with the Convention Committee and with chairmen of the special committees.

The conference will be in session Monday and Tuesday at the Hotel Marion and on Wednesday a sight-

seeing tour for visitors will be arranged. The Woman's City Club is preparing for the entertainment of women visitors to the convention, it was announced yesterday. They will be shown about the city in automobiles Monday and will be guests at a social function, the exact nature of which has not yet been determined, Tuesday afternoon.

It is desired to have as many feminine drivers as possible to conduct the visitors about the city. All women who drive their own automobiles and are willing to assist in entertaining the guests have been asked to communicate with the Chamber of Commerce.

Parts of the conference program will be broadcast. The two principal addresses at the annual banquet, which is to be held Tuesday night at the Hotel LaFayette, will be broadcast by Station KLRA. Station KGH will put on the air the music by the Little Rock High School band and the addresses of welcome by Governor Parnell, Mayor Robinson and James J. Harrison, president of the Chamber of Commerce, which will open the conference Monday morning.

## FINISH PLANS FOR MINING CONGRESS

Committees Ready for Opening of Industrial Conference Monday.

Final arrangements for the fifth annual industrial conference of the American Mining Congress, Southern Division, were begun yesterday at a meeting at the Little Rock Chamber of Commerce. Dr. Henry Mace Payne, division secretary, conferred with the Convention Committee and chairmen of special committees on details of the program that had not previously been completed.

The conference will open at the Hotel Marion Monday morning and will continue through Tuesday. A governors' reception will be held Monday night, the annual banquet at the Hotel LaFayette Tuesday night and a sightseeing tour of Hot Springs, Benton, Bauxite and other points of interest Wednesday.

Dr. Payne said last night that an attendance of 250 at least was expected for the opening of the conference. Basing his estimate on reservations made at Little Rock hotels, he said that the registration might reach 1,000 by Tuesday.

Dr. Payne announced that Dr. G. P. Grimsley, geologist of the Baltimore and Ohio railroad, had accepted an invitation to speak at the conference. The latter previously had declined an invitation, believing that he could not attend the conference. A telegram yesterday, however, gave assurance that he will be here.

## MINING CONGRESS OPENS TOMORROW

First of Series Ever Held West of the Mississippi River.

MANY VISITORS COMING

Sessions Will Continue Throughout Tuesday and Sightseeing Trip Will Be Made Wednesday.

The fifth annual industrial development conference sponsored by the Mining Congress, and the first of the series to be held west of the Mississippi river, will open at the Hotel Marion at 9:30 tomorrow morning. It will continue through Tuesday and a sightseeing trip to Bauxite, Hot Springs, Carpenter Dam and Benton will be held Wednesday.

Delegates and visitors from all the Southern states will attend, and other sections of the country will be represented. It has been stressed from the first by promoters of the conference that the program will be of interest to business and professional men generally as well as mining men. All phases of industrial development will be discussed.

D. Hodson Lewis, secretary-manager of the Little Rock Chamber of Commerce, which has taken a leading part in arrangements for the conference, yesterday urged attendance of Little Rock people. Everyone, he said, will find some parts of the program of particular interest.

Governor Parnell will take an active part in the general sessions and tomorrow night he will be the host at a reception for visiting governors, congressmen, legislators, officers of the American Mining Congress and other visitors. Two other state executives will appear on the convention program. Gov. Bibb Graves of Alabama will speak Tuesday afternoon and Gov. William J. Holloway of Oklahoma will deliver an address at the informal dinner Tuesday night.

Dr. Henry Mace Payne, consulting engineer for the Mining Congress and secretary of the Southern Division, has been here since Wednesday making final arrangements. He will remain through the convention. J. F. Calbreath is another official of the Mining Congress who will take part. He is national secretary of the organization.

A concert by the Little Rock High School band will precede the opening of the conference, which will be called to order by J. H. Hand of Yellville, member of the Board of Governors for Arkansas. Dr. Roy Rutherford, pastor of the First Christian church, will deliver the invocation after which Governor Parnell and Mayor Robinson will welcome the visitors to Arkansas and to Little Rock. Mr. Lewis will give a welcome to industry and Mr. Calbreath will respond to the three speeches.

First General Session. The first general session will follow. Erskine Ramsay, chairman of the Board of Governors, will preside and will deliver his annual address. His speech will be a symposium of reports on state progress made by the following members of the board: Mr. Hand, Arkansas; Leadlay Oden, Florida; Dr. Poole Maynard, Georgia; R. M. Watt, Kentucky; W. F. Chisholm, Louisiana; James H. Skewes, Mississippi; J. W. Harrelson, North Carolina; W. W. Smoak, South Carolina; Rutledge Smith, Tennessee; W. E. Dickerson, Texas, and Dr. Wilbur A. Nelson, Virginia. Mr. Ramsay will represent Alabama.

Mr. Harrelson will preside at the afternoon session, beginning at 2. The following addresses are on the program: H. E. Safford, vice president, Missouri Pacific Lines, "Railway Transportation, a Factor in the Development of Natural Resources"; E. M. McGary, consulting engineer, Marquette Steel and Iron Company, St. Louis, "The Future of Mining in the South"; McKinley W. Krieger, chief of Tax and Tariff Division, American Mining Congress, Washington, D. C., "Taxation and Tariff in Relation to the Mineral Industries of Arkansas"; Dr. G. P. Grimsley, geologist, Baltimore and Ohio railroad, Baltimore, "Southern Industrial Development." The governor's reception will be held at the Marion from 7:30 to 9.

Mr. Watt will preside over the third general session, which will begin at 9:30 a. m. Tuesday. Speakers and their subjects are: Herbert A. Brooks, manager Fort Harrison hotel, Clearwater, Fla., "Tourists, and Industry"; H. C. Couch, Arkansas capitalist, "Relationship of Power Development to Industrial Development of the Mid-South"; Dr. J. A. Dickey, professor of rural economics at the University of Arkansas, "Sources of Income in Arkansas"; W. E. Dickerson, director of development, Central Power and Light Company, San Antonio, Tex., "Industrial Development and the Power Companies."

Alabama Governor to Speak. The general subject of the fourth session, beginning at 2 Tuesday afternoon, will be "Co-ordination of Southern Industrial Development." W. W. Smoak will preside and the opening address will be delivered by Governor Graves of Alabama. Thereafter the meeting will be thrown open for general discussion of the subject. At 5 the Resolutions and Nominating Committees will report and officers will be elected.

Governor Holloway of Oklahoma, Judge R. C. P. Thomas of Bowling Green, Ky., and George Morris, editor of the Memphis Commercial Appeal, will speak at the dinner in the Marion ballroom at 7 Tuesday night. Dr. Payne will be toastmaster. Pupils of the Dorothy Donelson Studio will furnish entertainment and from 10:30 to 11:30 there will be dancing for the guests. The dinner program will be broadcast over Station KGH.

Fine Mineral Exhibit. An unusual comprehensive exhibit of Arkansas minerals has been arranged for display at the Hotel Marion during the conference. It contains abrasives, building and structural materials, ceramic materials, lithographic stone, fertilizers, mineral waters, fuels, metallic minerals, rare minerals and gems and road materials. In addition there will be a water power exhibit.

George C. Branner, state geologist, is chairman of the Exhibits Committee. Other members are: Frank W. Gibb, D. L. Phillips, E. E. Bonewits and Richard Buhlis of Little Rock; J. H. Hand, Yellville; W. M. Weigel, St. Louis, and F. C. Woodward, Batesville. Mr. Gibb yesterday described the mineral display.

The abrasives include novaculite, corundum, tripoli and silica. The building stones include granite, of which large deposits are found in Pulaski and Saline counties; sandstone, which is generally distributed in western Arkansas, and limestone, found in numerous deposits in the northern part of the state. Arkansas granite has been used in many buildings here and in other cities of the state. Sandstone is used extensively near the quarries.

Marble comes from several counties of northwestern Arkansas and also is quarried in Searcy county. The courthouse at Morrilton has an interior finish of Arkansas marble. Onyx is found in the extreme northwest, particularly in Carroll county. Samples of quartzite and dolomite also will be in the building stone collection.

Chalk and clay used in making portland cement are found in the extreme southeast and form the basis of the new cement industry developed at Okay. Such pigments as ochre, iron ore and barytes are found in numerous deposits about the state. Sand, gravel and stone, classed as concrete materials, also will be on exhibit. Mr. Gibb said that stone suitable for crushing and good quality gravel occur in practically all counties west of the Missouri Pacific main line from St. Louis.

Sand and quartz are used in making window glass at Fort Smith. The sand is found in large deposits in many localities and quartz is plentiful in the Ouachita mountains. Slate used for roofing, electric insulation and billiard table tops is found in the extreme western part of the state.

Other sections of the exhibit will be devoted to soapstone from Pulaski and Saline counties, ceramic materials such as clays, shales, fullers earth, bentonite and quartz, which are widely distributed; lithographic stone from Independence county, fertilizer materials such as marls, greensand, gypsum and phosphate rock; fuels, coal, gas, petroleum, lignite and their by-products; metallic minerals—antimony, aluminum, lead, zinc, iron, copper, silver, nickel and cobalt and manganese.

Diamonds, pearls, topaz and the rare minerals found in Magnet Cove are included in the collection. Members of the committee believe that it will be the first systematic exhibit of Arkansas minerals ever undertaken.

Women visitors who come here for the conference will be entertained at a reception at the Woman's City Club Tuesday afternoon. They also will be taken on a sightseeing tour of the city.

## MINING CONGRESS CONVENES TODAY

About 300 Delegates Expected for Opening Session at Hotel Marion.

Approximately 300 delegates are expected to be on hand for the opening session of the fifth annual industrial development conference, sponsored by the American Mining Congress, which will be held at 9:30 this morning at the Hotel Marion.

Dr. Henry Mace Payne, consulting engineer for the Mining Congress and secretary of the Southern Division, who is in charge of arrangements for the conference, said yesterday that the number in attendance probably would reach 500 later in the day. General sessions of the meeting will continue through tomorrow, and on Wednesday the delegates and visitors will be taken on a sightseeing tour to Bauxite, Hot Springs, Carpenter Dam and Benton.

Preliminary to the opening of the conference this morning, the Little Rock High School band will give a concert, after which J. H. Hand of Yellville, member of the Board of Governors for Arkansas, will call the gathering to order. Following the invocation by Dr. Roy Rutherford, pastor of the First Christian church, Governor Parnell and Mayor Robinson will deliver addresses of welcome. D. Hodson Lewis, secretary-manager of the Little Rock Chamber of Commerce, will welcome industrial representatives and J. F. Calbreath, national secretary of the Mining Congress, will respond to the welcomes.

Board Chairman Arrives. Erskine Ramsay of Birmingham, Ala., chairman of the Board of Governors, who arrived in Little Rock yesterday, will preside at the morning session and deliver his annual address, which will be a symposium of reports on state progress made by Southern division members of the board.

Speakers at the afternoon session, beginning at 2, together with their topics will be as follows: H. E. Safford, vice president of the Missouri Pacific Lines, "Railway Transportation, a Factor in the Development of Natural Resources"; E. M. McGary, consulting engineer, Marquette Steel and Iron Company, St. Louis, "The Future of Mining in the South"; McKinley W. Krieger, chief of Tax and Tariff Division, American Mining Congress, Washington, D. C., "Taxation and Tariff in Relation to the Mineral Industries of Arkansas"; Dr. G. P. Grimsley, geologist, Baltimore and Ohio railroad, Baltimore, "Southern Industrial Development." J. W. Harrelson, member of the Board of Governors for North Carolina will preside.

Reception Tonight. Governor Parnell will be host to delegates and visitors at a reception from 7:30 to 9 tonight at the Marion. Two other state executives, Governor Bibb Graves of Alabama and Governor William J. Holloway, are expected to arrive today and will appear on the convention program tomorrow.

Delegates arriving yesterday included: Mr. Ramsay, Thad Holt, Birmingham, head of the Alabama Industrial Development Board; Charles Chase, Louisville, industrial agent for the Louisville & Nashville railroad, and Mayor F. F. C. Woodward of Batesville, who announced that 20 Batesville representatives would attend the conference.

Assurance of the attendance of the following was received by Mr. Payne yesterday: H. W. Stanley, president of the Tennessee Central railroad; M. D. Harbaugh, secretary of the Tri-state Zinc and Lead Ore Producers Association, Miami, Okla.; George Schneider, representative of the Association of Commerce, New Orleans; Clarence E. Abbott, vice president of the Tennessee Coal, Iron and Railroad Company, Birmingham, Ala., and L. Page of Los Angeles, who is engaged in zinc and lead development in the White river valley in Arkansas.

## MINING CONGRESS CONVENTION OPENS

Development of Vast Resources of South Stressed in Speeches.

MORE THAN 400 PRESENT

Delegates Are Welcomed to Arkansas by Governor Parnell—Session Ends Today.

The governors of two states, industrial leaders and officials of the American Mining Congress stressed the importance of co-ordinated effort in developing the vast natural resources of the South at the opening sessions of the fifth annual industrial development conference of the Southern Division of the Congress held yesterday at the Hotel Marion. More than 400 delegates and visitors, representing all the Southern states and other sections of the country, had registered for the conference last night.

A concert by the Little Rock High School Boys band preceded the opening of the conference, which was called to order by J. H. Hand of Yellville, member of the Board of Governors for Arkansas. Dr. Roy Rutherford, pastor of the First Christian church, said the invocation.

Welcomed by Parnell. Governor Parnell, in his address of welcome to the delegates on behalf of Arkansas, said that the state was honored that the first meeting of the Congress west of the Mississippi river was being held within its borders.

"Only by being bound together with a common tie," he said "can we obtain for our particular section of the country those ambitions for which we strive. On the occasion of this conference, you are representative of capital and labor, the farm and field, the factory, railroad, mine and foundry. There is no more progressive group of Southern leaders than compose this meeting. While you are interested primarily in mining, you know full well that the development of mineral resources must depend in large measure on increased industries and commercial activity."



200

value and in many instances grow wealthy from them."

**"Tourists, an Industry."**  
The great growth in recent years of tourist activities in the United States was described by Herbert A. Brooks, manager of the Fort Harrison hotel, Clearwater, Fla. Mr. Brooks' subject was "Tourists, an Industry."

"Ordinarily to speak of industry is to turn one's thoughts toward smokestacks, whirring machinery, the hum of electric motors and the general bustle and bustle of the manufacturing world," Mr. Brooks said. "However, any activity that presents an annual bill to the American public of more than \$5,000,000,000 most assuredly can be classed as an industry of major importance."

The annual "travel population" during vacation seasons is 40,000,000, he said. To attract tourists a locality must have something to sell, present its merchandise in an attractive manner, have markets in which to sell the merchandise, develop markets by increasing trade volume and keep on the alert for new markets, Mr. Brooks said.

"Our product might be climate, sports, natural scenery, points of historical significance, fishing, hunting or any number of things or combinations of these things which go toward making up the merchandise list of the tourist center," he said. "Modern merchandising has developed the keenest competition in the selling of even climate and natural scenery to the American public. With the growth of the industry has come the demand for service on the part of the customer, as well as recreation and amusement. The result has been that those engaged in catering to the tourist trade have had to follow the lead of the manufacturer whose product is not an essential to life, and meet competition through the medium of service and attractiveness of the merchandise offered."

Another speaker yesterday was W. E. Dickerson, director of development for the Central Power and Light Company of San Antonio, Tex., and retiring member of the Board of Governors. Mr. Dickerson discussed "Industrial Development and the Power Companies." Must Conserve Manpower.

This country must conserve its manpower if it is to continue in its present position, Governor Graves said. Public health is of prime importance in that line, he said. Continuing, he said:

"In Alabama we are trying to develop the aggregate strength of the people by raising individual earning power. We are raising the earning power by promoting health. It makes no difference how efficient the general are in industrial warfare if the private can't do their work. Last year only four states—one of them was Arkansas—had a lower death rate than Alabama."

Alabama people have decided that the best method of industrial progress is to obtain branches of going concerns that have had their inception elsewhere, rather than to start companies that are absolutely new, the speaker said. He described the work of the Alabama Industrial Development Board, which has been formed within recent years to bring about industrial progress in the state.

"We don't want an industry to locate in the South and then fail," he added. "It is better, instead of pioneering and gambling with a new organization, to get a branch of a large business that has been started elsewhere. The care that the South gives to what it has is the best inducement to other industries to come into this section."

"For several years the South lagged behind other sections in education, but that no longer is the case. Today the South is training its younger generation in fine schools and there are extension services to take care of the educational needs of grown people."

Governor Graves quoted Roger Babson, widely known economist, as saying that with knowledge, work and faith Alabama could be the industrial leader of the world. The governor emphasized the need of faith in the state's possibilities and said that the same thing applied to the South generally.

**Has "Four-Track Mind."**  
The governor was introduced by Dr. J. S. Thomas, director of the Extension Division of the University of Alabama and associate director of the Alabama Industrial Development Board, as a man with a four-track mind. The four tracks were defined as agriculture, industry, health and education. Dr. Thomas decried the South's "suicidal policy of pumping its genius into other sections of the country." The migration of Southerners to become leaders in other states had been given more than passing notice by preceding speakers.

W. W. Smoak of Walterboro, S. C., speaker of that state's House of Representatives and its member of the Board of Governors of the Mining Congress, presided over the meeting. Mr. Smoak was the personal representative of Governor Richards of South Carolina at the conference.

Following the address of Governor Graves representatives of several states in the Southern Division of the Congress were called upon for reports on conditions in their states. They were: James H. Skewes, Mississippi; J. W. Harrelson, North Carolina; J. L. Wilkes, Florida; R. M. Watt, Kentucky; Coleman C. Martin, South Carolina; Dr. Poole Maynard, Georgia; Rutledge Smith, Tennessee, and W. E. Dickerson, Texas.

The latter suggested appointment of a committee to devise a plan for industrial co-ordination in the South and a resolution to that effect was adopted later.

Mr. Skewes said that the time had come for the South to work for itself and to advertise its features that appeal to industrial leaders. One of the drawbacks to the South's progress, he said, has been the prevalence of misinformation about this section within its own boundaries.

**Conditions in Arkansas.**

After the state reports Col. S. Q. Sevier spoke briefly of conditions in Arkansas, predicting establishment of a cotton manufacturing industry in the state soon. Former Gov. Charles H. Brough in a brief address described the industrial development conference as the most beneficial meeting so far as Arkansas interests are concerned, ever held in the state.

Dr. Brough said that the South is destined to lead all other sections in industrial growth, but that there must be co-ordination. Every Southern state at present is a monument to agriculture, he said.

At the close of the meeting resolutions were adopted, thanking various organizations and individuals for their efforts in making the conference a success. Dr. Payne expressed his personal appreciation of the aid given him in making arrangements and in return Dr. Brough paid tribute to Dr. Payne and J. H. Hand of Yellville for their efforts in bringing the conference to Arkansas.

**New Board of Governors.**

The following members of the Board of Governors were elected upon recommendation of the Nominating Committee: For Alabama, Clarence E. Abbott, Birmingham; Arkansas, J. H. Hand, Yellville; Florida, J. L. Wilkes, Jacksonville; Georgia, R. F. Montsalvatge, Atlanta; Kentucky, R. M. Watt, Pineville; Louisiana, E. W. Vennard, Shreveport; Mississippi, James H. Skewes, Meridian; North Carolina, J. W. Harrelson, Raleigh; South Carolina, W. W. Smoak, Walterboro; Tennessee, Rutledge Smith, Nashville; Texas, C. L. Baker, Houston; Virginia, Leroy Hodges, Richmond. Mr. Watt was elected chairman of the board and Dr. Payne was re-elected division secretary.

**Taft's Death Deplored.**

A resolution by Dr. Brough, expressing sorrow at the death of former Chief Justice Taft, was adopted by the conference just before it adjourned its morning session. It follows:

Resolved, that the members of the Southern Mining Congress, in its fifth annual session, express their heartfelt sorrow at the death of the most popular of contemporary Americans, former president and former Chief Justice William Howard Taft, who, in his illustrious service as solicitor general of the United States, governor general of the Philippines, secretary of war, president and chief justice, richly merited the stately eulogy of Senator Conkling on President Grant, "Great in the arduousness of things done."

"Resolved, further, that copies of this resolution be spread on the minutes of the conference, be given to the press, and be transmitted to the widow of this great American statesman and jurist."

**Morning Session.**

Mr. Watt presided at the morning session. At its opening a message from Richard H. Edmonds, editor of the Manufacturers Record, was read. Mr. Edmonds dwelt at length on the South's loss of brilliant men who in recent years have transferred their activities to other sections.

"This meeting is being held in a remarkable city and in a remarkable state," the message said. "A year or two ago some of the New York papers referred to the amazing achievements that had been wrought in New York by men from Little Rock, many of whom

stood at the very top of financial and business leadership in that great city. As I remember it, the statement was made that there were at least 200 men of prominence in New York's business life who had come out of Little Rock."

"This is an illustration, however, of what has taken place in the entire South. From this section there have gone into the North and West and out to the Pacific coast many men who have become dominant leaders in finance and industry, in railroad management, in law, in education and in the preaching of the gospel. I sometimes wonder how marvelous would have been the achievements of the South if the men and women who

**ARKANSAS PRESENTS FINE OPPORTUNITIES**

**Consulting Engineer Points Out State's Undeveloped Resources.**

Arkansas presents phenomenal opportunities for development of mining, E. M. McGary, consulting engineer of the Marquette Steel and Iron Company, St. Louis, said in his address Monday on "The Future of Mining in the South" at the industrial development conference of the American Mining Congress here. His speech, in part, follows:

"Let us for one moment consider a few facts in relation to this great state whose guests we are. The center of population of the United States is gradually moving westward and today Arkansas is closer to that center than any mining state of the Union. Arkansas has today greater potential undeveloped water power than any other state in the Mississippi valley, and the future of this great development will go hand in hand with mining development. Due to the geological formation of the state, her rich mineral deposits are easily found, and these include iron, lead, zinc, manganese, bauxite, phosphate oil and diamonds. To my mind, south Missouri and north Arkansas constitute one of the greatest if not the greatest mining fields in the entire world. In my professions as a mining engineer, I have been actively engaged in mining and geological work throughout the world, and in the course of my work I have examined and operated properties in Mexico, California, Canada, China, Japan, Korea and South Siberia. During the 20 years spent in the Orient, I visited practically every known field of that great mining country, and, to my mind, gentlemen, the opportunities presented in Arkansas and south Missouri are greater by far than any I have seen in the other sections of the world. Still, you will find in these foreign countries millions of dollars of United States capital invested, while far greater fields nearer to home are absolutely ignored. Supply is Diminishing."

"Large steel corporations and iron mining companies and government geologists estimate that within a period of 25 years the high grade ore deposits of the United States will be exhausted, making necessary a new means of concentration for low grade ores, if the present fields are to supply even a fraction of the future demand. We have in Missouri and Arkansas hundreds of millions of tons of high grade ore awaiting only capital and equipment to release it to industry. Why has this opportunity been neglected? There is no question about the existence of large bodies of excellent lead and zinc ore. According to J. B. Brown, E. M., the average recovery of zinc concentrates in the Arkansas field has been seven per cent as compared to four per cent in the tri-state field."

"Another example may be appropriate: The United States government report for the year 1928 shows that in that year the United States produced less than 10 per cent of the high grade manganese ore used in the steel and allied industries. This is an absolutely essential mineral, rated as No. 1 in Essential Minerals for wartime purposes by the War Department, and the United States should be absolutely independent in its production. This is not the case, even though the manganese deposits in Arkansas alone if properly developed could supply this demand for a period of over 50 years. Until recently these deposits, though known, have been passed by, but due to the foresight, vision and ability of local capitalists, engineers and geologists of the states of Arkansas and Missouri, this condition will be greatly remedied within a very short time. The same condition found in Arkansas will apply in a great measure, except as to specific minerals, in practically every state south of the Mason and Dixon line. Why should this condition continue to exist?"

**Apathy Pointed Out.**  
"To my mind it is due entirely to the apathy of the individual citizens

of the Southern states. The old saying that a prophet is never without honor save in his own country is certainly true in these states when mining is being considered. Of the present development in the south 95 per cent is controlled or owned by Northern and Western capital, and the only interest held by the native citizens in all these projects, is the small royalty received from oil, or the very inadequate sums received from the sale of the acreage originally owned. This condition of affairs should not be allowed to continue. These is no reason why the natural wealth of the Southern states should not remain at home. There is no reason why the development should be left to citizens of other states."

"In conclusion, I wish to quote to you two extracts from papers recently delivered; one delivered anonymously, the other from a paper written by one of our greatest mining engineers, J. R. Finley, E. M. and published in the Engineering and Mining Journal issued September 14, 1929. The first was an answer of a Chicago banker to criticisms made by the presidents of other banks because of his investment in mining. Among other things, he said: "Mining has made the United States the richest country in the world."

"Mining is an industry as necessary to the welfare of the community as is the raising of crops."

"Mining is the second industry in the United States."

"Mining has transformed more poor men into millionaires and raised them to positions of honor and trust than any other business."

"Show me the country without mines and I will show you a people sunk in degradation and poverty; and poverty makes cowards of nations as well as individuals. Outside of the element of great personal profit which will accrue to bankers who are able to supply the money to open great mines, it behooves us to foster an industry upon which the prosperity of not alone our depositors, but of the entire nation depends."

"Mr. Finley closes his very able article with this very significant paragraph: 'Isn't this then a pretty good illustration of the truth of the conclusion I have mentioned as having come to, that it is the men who make the mines, not the mines that make the men. After all there is nothing like headwork. The great problem of making a lucky investment in southeast Missouri (the Ozarks) is not to see that it is a great mineral district— anyone with half an eye can see that—but to discern the men and the organization to make the most of it.'"

**THE MINING CONGRESS CONVENTION AT LITTLE ROCK.**

The industrial development conference of the Southern Division of the American Mining Congress, meeting this week at Little Rock, is the first of these annual events to be held west of the Mississippi. The officers and delegates of the congress may be assured, as Governor Parnell told them in his address of welcome, that Arkansas appreciates this honor.

And Arkansas will hope that the conference may prove fruitful, alike for the mining specialists and industrial leaders who take part in it, and for the state which is privileged to be its host. As Governor Parnell also pointed out in his address, valuable mineral deposits exist in two-thirds of the counties of our state. Even now the annual mineral production, \$50,000,000, is about one-fifth the annual value of agricultural products. Yet the recovery of mineral values has scarcely made a start.

These assets need development, alike for the benefit of the state and for the further expansion of American business as a whole. The chief purpose of the American Mining Congress is to bring about development. In replying to the welcome voiced by Governor Parnell, J. F. Callbreath, secretary of the American Mining Congress, told some of its functions and of its history. Mr. Callbreath, in conjunction with other agencies, has led in the establishment of such enterprises as cement plants, brick plants, tile plants and other concerns utilizing mineral raw materials. It has attempted to stimulate local activity, and his co-operated with the state geological surveys in locating and bringing to public attention various mineral assets.

It is to be hoped that this conference will result in contacts and acquaintanceships that will lead to more general recognition of the mineral resources of Arkansas, and more active steps toward putting them to use.

**MINING ENGINEERS VISIT INDUSTRIES**

**Delegates to Southern Division Congress Are Taken**

*Bozette for Tour. 5-13-30*

Visitors from out of the state, who had heard much of Arkansas industries Monday and Tuesday during the fifth annual conference of the Southern Division, American Mining Congress, yesterday were taken on a tour and given opportunity to see for themselves some of the things that had been described to them.

The itinerary included the plant of the Nilock Pottery Company at Benton, the bauxite mines, Carpenter dam and Hot Springs. Nearly 100 persons made the trip, a few Little Rock people among the number. Two Missouri Pacific buses and several private automobiles were used to transport the tourists.

The reactions of the visitors generally were summed up last night at the conclusion of the trip by Dr. Henry Mace Payne, consulting engineer for the American Mining Congress and Southern Division secretary and George H. Bailey, Mining Congress counsel. Bauxite Plant Amazes Party.

"Everything on today's program was of great interest to people who knew Arkansas only by hearsay," Mr. Bailey said. "At Bauxite particularly I heard many expressions of wonder from men who had known beforehand that Arkansas produced between 90 and 95 per cent of the country's bauxite, but had not realized the great extent of the fields. There they saw a large plant in operation and a mining area that stretched away as far as the eye could reach."

Mr. Bailey spoke of the growth of the aluminum industry, in which bauxite production plays such a prominent part, as one of the most romantic developments in industrial history. Practically within the last 30 years it has come up from nothing to a position among the leading industries, and today aluminum plays an important part in the manufacture of metal products from kitchen utensils to automobiles and airplanes, he said. He pointed out that it takes five tons of bauxite and 27 tons of other raw materials to make one ton of aluminum.

Carpenter dam was characterized as a "great picture." Not only will it provide hydro-electric power, but it also will be a great factor in flood control, Mr. Bailey said. It is a matter of record, he added, that any locality with cheap power at its command has no trouble attracting industries; instead of having to be solicited, they come to it.

**Malvern Makes Hit.**

Dr. Payne agreed with all that Mr. Bailey said and made additional comments. Dr. Payne, who left the main body during the day and visited Malvern, spoke of the beneficial effects that city's industries have upon it. He mentioned the town's clean appearance, the well kept buildings and grounds, the general air of prosperity. Malvern stands out as an example to other Southern towns of similar size, and the main reason is its factory payroll which are spent mainly at home, he said.

Through the courtesy of H. C. Couch, Dr. Payne, Mrs. Payne, W. W. Smoak and Mrs. Rachel Rogers were taken by automobile through Malvern to Couchwood, on Lake Catherine. Then followed a trip by motor boat to Carpenter dam, where they joined the other tourists. Mr. Smoak is South Carolina's representative on the Mining Congress Board of Governors. Mrs. Rogers was the congress's official reporter during the industrial conference.

Dr. Payne spoke this gratitude of all the visitors for the reception given them by Arkansas people. At every turn, he said, they were met with a friendliness that was "remarkable and beautiful." Conference registration figures had not been checked, but the total was between 500 and 600, he said.

**Visit Pottery Factory.**

The sightseeing party left the Hotel Marion shortly after 9 yesterday morning. The first stop was the Nilock pottery plant just outside of Benton, where the visitors saw vases and other articles in the process of manufacture from Arkansas clay.

From there they went to Bauxite and visited the plant of the Republic Mining and Manufacturing Company, known as the American Bauxite Company until the first of this year. They saw snub-nosed locomotives shoving long strings of ore cars into buildings where giant crushers and kilns did their work. A visit to the mines had been planned, but it was given up because of the lateness of the start from Little Rock and some times lost en route.

At Carpenter dam the sightseers were guests of the Arkansas Power and Light Company at a luncheon that was a model of excellence and abundance. It might easily be that that meal was the high point of the program for some of the participants.

There was tender chicken, fried to exactly the right shade of brown. There were hot biscuits that one clutched tightly, fearing that they might float away on the air if released for a second. Noble portions of apple pie and ice cream, various vegetables and the other customary adjuncts of a well rounded repast completed the menu.

If that short recital fails to bring about any watering of mouths it has failed partly in its purpose, for the meal deserved a description that would result in such procedure.

After a thorough inspection of the great dam, still under construction, the tourists left for Hot Springs. There they inspected leading hotels and bathhouses. They were back in Little Rock by 5 p. m.

On the road between Benton and Hot Springs there was a sight that appealed to at least one member of the expedition because of its novelty. It was a good old-fashioned covered wagon, with a man and a woman sitting humped over on the seat and, presumably, a collection of children within the conveyance. The wagon was drawn by a team of horses and a third horse stood along behind, on the end of a halter-shank.

It was the first time this chronicler had seen anything like that in years and years, and that's why it is given space here. Probably the man and his wife and the presumable children never heard of industrial conferences and the like.



# Mining Destined to High Ra

## Arkansas' Mineral Output Now Has Greater Value

### Our Farm Income-Home Control Through Investment of Local

## Other Less Fortunate States Boast of Opportunities in Mining Which They Offer

By J. H. HAND.

Member Board of Governors for Arkansas in American Mining Congress, Southern Division.

In the magnitude and diversity of growing wealth and income, Arkansas business has, until recently, overlooked our greatest potential wealth-producing sources that are now ripe for the magic touch of capital and development industry—mining. Mining has made the United States the richest nation in the world, and is as necessary to the welfare of the country as the growing of crops. Mining has raised more poor men into independence, and has given in return, more fortunes on moderate investments than any other business. With two-thirds of the state of Arkansas stowed with commercial deposits of staple minerals, all of which are easily found by reason of characteristic geological formations, this commonwealth will, within a few years, become the richest in the galaxy of states—unless her own citizens yield this birthright of themselves and their children to conquest of outside capital. While we hold open the door of welcome to outside enterprise, that will naturally mean that profits will go to the outside in the future to enrich other states, and leave to our people only the crumbs that will fall in the form of wages for doing the work.

It is with satisfaction and pride that we can point to a \$250,000,000 crop; annual increased value of railroad properties in the state to around \$10,000,000, and approximately as much growth in value of power and light, telegraph and telephone utilities, manufacturing, dairying, poultry and live stock take credit for several millions more, while added stretches of new highways and bridges stimulate new enterprises and larger tourist crops within the state each year. The banks of the state point to huge clearings, ample reserves and fat dividends, as more stores rise up to claim a division of the alluring mercantile trade. Truly these things alone are enough to carry any state to heights well above the average in material prosperity, but that is not all. From the hidden treasure vaults of the state came unheralded, if not unnoticed, another volume of wealth, equal to one-fifth the crop value for last year.

#### Arkansas Has Top Place.

Other states that are less fortunate in varied means of gainful pursuit than ours, justly take unto themselves high credit and importance through the mining industry. Compared to great mining states of the West, where countless fortunes have been made from the mines, as they have supplied the chief means of livelihood to the inhabitants for half a century or more, the contribution of mineral wealth by Arkansas stands boldly at the top. It is but a few years since Alaska was the mecca for fortune seekers from over the world. In 1929, Alaska produced minerals of the value of \$16,105,000; Colorado, \$15,276,766; New Mexico \$25,108,000; Nevada, \$31,302,000; Arkansas, \$50,000,000, or there about. Allowing that \$35,000,000 of this is represented by oil and gas, we still have left an enviable comparison with states that are highly rated in the mining industry. It is safe to state that less money was spent in proportion, to produce this \$50,000,000 of mineral output, than was required in the 250-million dollar crop of the state for the same period.

It should be borne in mind that, while banks advance money on agriculture, building, merchandising, etc., to tide them over, mining has to finance its own way, because most banks won't trust the mining business. They say it is too hazardous. Statistics show that less than 35 per cent of failures have resulted from commercial mining, as compared with 95 per cent shown in merchandising in the United States. Even the staid and solid business of banking has not such a wide margin in its favor over that of mining, in failure percentage, and resulting losses. This is not meant as a thrust at banks, for without them, business would collapse overnight. I am confident that when bankers take the pains to correctly inform themselves in the mining business, as they have done in other lines to which they extend encouragement, many of them will be disposed to lend aid in the development of worthy mining enterprises, as a few have already done.



J. H. HAND.

#### Of Interest to Everyone

The merchant and banker a tractor may think, as some of us say, that they are not interested in mining. Perhaps not, directly, but there are many of them directly interested in any other business, outside of which they are employed, but are vitally interested in the providing of more means of livelihood that will afford attractive payrolls and keep our young men and women at home. That will mean more business for the merchants and in turn more deposits for the banks, besides the earnings that will swell local wealth and bank balances, provided home enterprises are in control.

By way of emphasizing the potential mineral wealth of Arkansas and the peculiar advantages which it affords to home enterprise in development, I wish to quote from one who, through technical training and thorough knowledge from wide experience, is qualified to speak with authority on this subject. Capt. E. M. McGary of St. Louis, who is a geologist and mining engineer of the Herbert Hoover school, gave an address before the recent convention of the mining congress in Little Rock, in which he stated in part:

#### All Kinds of Minerals.

"In the state of Arkansas there are almost unlimited deposits of the world's greatest minerals. Until very recently these have been absolutely neglected. Arkansas has today greater potential water power than any other state in the Mississippi valley, and the future of this great development will go hand in hand with mining development.

"To my mind, North Arkansas and South Missouri constitute one of the greatest, if not the greatest mining fields in the entire world.

"In my profession as a mining engineer, I have been engaged in mining and geological work throughout the world, and in the course of my work I have examined and operated properties in Mexico, California, Canada, China, Japan, Korea and South Siberia. During the 20 years spent in the Orient, I visited practically every known field in that great mining country, and to my mind, the opportunities presented in Arkansas and South Missouri are greater by far than any I have seen in the other sections of

the world. Still you will find in these foreign countries, millions of dollars of United States capital invested, while far greater fields, nearer to home, are absolutely ignored.

"We have in Arkansas and Missouri hundreds of millions of tons of high grade ore, awaiting only capital and equipment to release it to industry. There is no question about the existence of large bodies of zinc and lead ore. The average recovery of zinc concentrates for Arkansas has been seven per cent, as compared to four per cent in the Tri-State field."

#### Rich Deposits of Manganese.

"The manganese deposits in Arkansas, if properly developed, could supply domestic demands for 50 years or more. Until recently, these deposits, though known, have been passed by, but due to the foresight, vision and ability of local capitalists, engineers and geologists of the states of Arkansas and Missouri, this condition will be greatly remedied within a very short time."

"In every mining venture, three things are essential to ultimate success: In the first place, the property or properties must be intrinsically sound; (this can be determined through investigation); secondly, there must be funds available to perform the development required, and finally, and in my opinion most important, the management must be such that it can efficiently and economically carry through the development planned. These requisites being properly taken care of, mining departs from the speculative and enters into the productive field."

"The old saying that 'A prophet is never without honor save in his own country,' is true in this state when mining is being considered. Of the present development in the South 95 per cent is owned or controlled by Northern and Eastern capital, and the only interest held by the native citizens is the small royalty received, or wages for their toil, or the inadequate sums received from sale of acreage originally owned. There is no reason why the natural wealth of these states should not remain at home. There is no reason why development should be left to citizens of other states." Perhaps it will be interesting to add here that upon the advice of Captain McGary, an outside company for which he is consulting engineer, has lately acquired large holdings of mining properties in northern Arkansas for early development—following recommendations which he has prescribed for us home-folks.

Compared to development expense in most other fields, a mining property in Arkansas can, as a rule, be brought to production stage at very small cost. It is a matter of record that in the majority of instances the developer has been rewarded with "pay dirt" from the start on zinc, lead and manganese prospects in this state, while the same is also true as to bauxite, marble, glass sand, limestone, phosphate, clays and some of the rare minerals.

Therefore, development enterprises are not required to create a huge fund in advance, but may provide capital under the "easy payment" plan, by subscribers paying a certain per cent on their shares each month, to carry current operating charges. Most anybody may carry a small investment in this way without it being burdensome. It should be remembered that many of the great fortunes of today had their beginning with small investments in mining development.

## NOMINEE OPPOSES SEVERANCE TAXES

### W. U. McCabe of Baxter County Says Water Power Should Be Developed.

Special to the Gazette.

Mountain Home, Sept. 25.—W. U. McCabe, who was nominated as representative of Baxter county at the August primaries, has said in an interview that he is opposed to a severance tax being placed on water power at this time for any purpose whatever.

Curtis Cannon, who was nominated as representative from Hempstead county, said recently that he would introduce a bill providing for such a severance tax, the proceeds to be used for the purchase of free school books.

"Water power development in the state is now in its infancy. We have only one dam or hydro-electric project in operation at this time, and tax from this dam would not go very far in purchasing school books for the school children of the state. The passage of such legislation, however, would probably have the effect of stopping all development of this kind in progress now in the state. It would kill the goose that is about to lay the golden egg in Arkansas, and I think most people will agree with me that industrial development represents our golden egg."

Mr. McCabe said.

"In discussing this matter it might be well to consider the effects of such legislation. The concerns now interested in the state probably would stop work, and if they stopped and no dams were built there wouldn't be any tax derived from them. We would lose both the dams and the tax. Because these concerns did not include the furnishing of school books to the state in their plans, if such legislation were passed, and they went ahead, they would just pass the increased overhead along to their consumers. The books wouldn't be free, because the people would be paying for them just the same.

#### Development in Prospect.

"Since 1910 the people of north Arkansas have spent thousands of dollars, and used every effort to obtain development of the water power on the White river and its tributaries. Their efforts have been successful and it appears now as if over \$47,300,000 will be expended in water power development in this territory within the next decade. To put this investment in jeopardy or to hamper, hinder or discourage the people who are making industrial development of the state possible would be almost a disaster.

"The sentiment of the people of Arkansas today is for industrial development, which in turn means agricultural development. A few years ago the legislature passed a bill permitting textile plants to operate for seven years tax free after locating in the state. I think that it is ill advised at this time to tax the very foundation upon which industrial development rests. It would be much more logical to put a 10 cents severance tax on Hempstead county watermelons, or \$10 a bale on its long staple cotton. I mean by this that the general loss to the state would not be so great.

"The census of this year showed that Arkansas made smaller gains than any other state in the South. Most other Southern states have made big gains during the last 10 years, and this gain can be laid largely to industrial development. I think that Arkansas' failure to make like gains was largely due to our back tax law and other laws unfavorable to industry. We had better modify the present laws or remove them from the statutes, rather than add more laws of the same character that would hinder our development during the next 10 years.

#### Should Encourage Capital.

"Capital does not have to come to Arkansas to develop our water power. It can turn to other states and invest in other ventures where it will have a more inviting field, and this is what it has been doing during the last 10 years. We must meet capital half way if we want it, and we have been rather late in starting. Either we must change our tactics, or get out of the development race that is being run at this time between the Southern states. Whether we step out or keep on is largely up to the legislature.

"The development of this power also affects other sections than where it is developed, because it will play a part in flood control. The dams will hold back all of the flood waters of the mountains to the benefit of the bottoms in times of flood. Because of this fact and the fact that the rivers under development in the state are navigable rivers, the question might arise as to whether the state has the right to levy any tax on them at all. No Depletion in Water.

"The principle upon which the severance tax is based does not apply to water power. The severance tax is based on the depletion of our resources. The creation of electrical energy from the

waters of our rivers depletes nothing. By stimulating industry, which uses our raw materials, however, it will increase our severance tax manifold in years to come.

"During the last few weeks business has taken me over the state. I find sentiment not for more taxes but for less, and for more efficiency in state government. Arkansas has 103 departments, boards, commissions and bureaus. By reorganizing its state government, Florida saved \$5,500,000 the first year, more than enough to buy all the school books in the state if Arkansas did likewise. As far as I have been able to determine the people of the state expect an economical legislature that will reduce the expenses of the state rather than to increase them, and pass such legislation as will help the state to industrial gain rather than hinder it."

## Igneous Outcroppings Found on Farm Near Benton.

By Bryan Parks of the state Geological Survey has completed a survey of igneous outcroppings on the farm of B. Gilbert, a mile from Benton on the Little Rock-Hot Springs highway. The area was investigated when it was reported to G. C. Branner, state geologist.

that rocky holes resembling craters were numerous in that section. Mr. Parks said at least three different types of igneous rock were found at seven different points. The outcroppings were described as fingers of igneous rock which forced their way to the surface in distant geologic periods. The rock has no known commercial value, Mr. Parks said. Similar outcroppings exist in various parts of Garland and Saline counties.

Published Daily and Sunday by KANSAS DEMOCRAT COMPANY, Publishers  
613-615 Main Street, Little Rock, Ark.  
Entered at the Postoffice at Little Rock, Ark., as Second Class Mail.  
SUBSCRIPTION RATES.—By carrier, Daily and Sunday, in Little Rock, 20c per week; outside of Little Rock, 20c per week, or 85c per month. By mail to Arkansas addresses, payable in advance, \$7.50 for one year, \$4.25 for six months; \$2.50 for three months; 85c for one month.  
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# Have Produced 82 Per Cent Of Entire Mineral Wealth During Past Three Decades

By GEORGE C. BRANNER  
State Geologist

The three accompanying tables and two diagrams give a fairly complete picture of the development and changes which have taken place within the mineral industries of Arkansas during the thirty-year period from 1900 to 1929 inclusive.

Table 1 shows the value of the different minerals produced each year, their corresponding total annual value and the total value for each item over the 30-year period.

Table 2 shows the quantity of the minerals produced and the 30-year total for each item.

Table 3 shows the percentage of the total value of the minerals produced each year belonging respectively to the fuel, non-metallic and metallic groups.

Under metallic minerals are included antimony, lead, silver and zinc ores and bauxite.

Figure 1 shows the total value of the minerals produced annually in Arkansas for the past 30 years and Figure 2 is a graphic representation of Table 3.

**Conclusions Are Drawn.**  
An examination of the above tables with their accompanying diagrams is both interesting and enlightening, and it is apparent that certain basic conclusions can be drawn, of which the following appear to be outstanding:  
1. Arkansas has been and is primarily a producer of fuel minerals. For only three years during the last 30 years did the values of the fuel minerals (coal and natural gas in this case) drop below 50 per cent of the total value of all minerals produced. These years were 1915, 1916 and 1917 which was during the war and a period of abnormal business conditions. When we consider that the total value of the fuel minerals during the last 30 years was \$516,318,600, which is 82 1/2 per cent of the total value of all minerals produced during that period (\$625,925,729), it is clear that this group of minerals is of predominating importance. It is almost equally clear that they will continue to be of great importance in this state for many years to come.  
2. The great importance of petroleum as a contributor to the produced minerals values of Arkansas can be appreciated when it is realized that during the nine-year period since the discovery of petroleum in Arkansas (1921-1929 inclusive) its value has totaled \$331,692,560 or 53 per cent of the value of all minerals produced in the past 30 years, or 69.4 per cent of all minerals produced since 1921 (\$477,547,495).  
The value of natural gas gasoline is not included in the above petroleum value figure. Figure 1 shows the marked effect of the discovery of oil in 1921 on the total value of minerals produced with the consequent rise to a maximum in 1925, which was followed by a decrease through 1929. This decrease was due almost entirely to the decrease in oil production.  
**War Aids Metallics**  
3. During the last 30 years the value of non-metallic minerals (\$64,712,762) has been 44 per cent greater than that of the metallic minerals (\$44,894,367). During only four years of this 30-year period has the value of metallic minerals exceeded that of the non-metallic minerals to any appreciable extent. These years were 1915, 1916, 1917 and 1918, which were war years and a period of high prices for aluminum, zinc, manganese and lead.  
4. Of the metallic minerals produced in Arkansas during the last 30 years, bauxite has represented 82.5 per cent of their total value; zinc, 11.7 per cent; manganese and manganese ores, 5.2 per cent and lead, 4 per cent. The remaining 2 tenths of one per cent is made up of antimony and silver.  
5. The production of metallic minerals was strongly influenced by high metal prices during the war, the maximum production of bauxite falling in 1918, zinc in 1917, manganese and manganese ores in 1917 and lead in 1917. During 1916 the price of aluminum rose to 65 cents per pound and in 1915 the price of zinc advanced to over 20 cents per pound. In 1917 the price of ferro grade manganese ore rose to \$44 per ton and in the same year the price of lead was slightly over 11 cents per pound.  
6. The value of non-metallic minerals has increased at a slow and fairly steady rate since 1900, the value of the 1929 production being near the maximum for the whole period.  
From a consideration of the above facts and from a knowledge of the geological conditions controlling the concurrence and distribution of the economic minerals in Arkansas, it is possible to make a few generalizations regarding the development of some of the mineral industries during the next ten or 15 years in Arkansas assuming normal business conditions.  
**Fuel Minerals.**  
1. There will probably be new oil fields discovered in southern and possibly eastern Arkansas, and oil may be discovered also in the northern portion of the Arkansas River valley. Our knowledge, however, concerning the deeply buried formations in western Arkansas is very incomplete, but the fundamental conditions are not definitely discouraging for the production of commercial quantities of oil. The collection and distribution of new information concerning the oil bearing formations of southern and western Arkansas will probably be of value in connection with the development of new oil fields. The use of new prospecting methods, principally geophysical methods, which are of comparatively recent development, may also play an important part.  
2. It is to be expected that there will be several new gas fields discovered in the Arkansas River Valley Province of western Arkansas. The remarkable growth of the trunk gasoline system of Arkansas and adjacent states in recent years has added substantially to the value of commercial gas discoveries in western Arkansas.  
3. The production of coal probably will depend directly on price, the margin of profit at present being small. Most of the new coal mining activity at present is confined to high grade deposits. Fairly complete knowledge of the coal deposits of western Arkansas is available and considerable reserve deposits exist.  
**Metallic Minerals.**  
4. It is believed that the future production of bauxite will be controlled principally by the amount of bauxite consumed. It seems probable that there are larger reserves of bauxite available in Arkansas than is commonly believed.  
5. The development of zinc and lead mining in northern Arkansas will probably be stimulated to some degree by the development of hydro-electric power on the White river and its tributaries. Other factors tending to reduce the costs of mining and transportation will be of importance in stimulating activities in the region. Considerable knowledge of the lead and zinc deposits is available and reserves exist in quantity.  
6. Manganese mining appears to be directly influenced by price, although the development of processes whereby low grade manganese bearing clays can be economically beneficiated to a ferro grade of ore may substantially increase the quantity of manganese oxides mined in north Arkansas.  
**Non-Metallic Minerals.**  
7. There will be an increase in the production of clay products and a diversification of clay working industries. New and detailed knowledge concerning the distribution, quality, and quantity of clays throughout the state will add materially to such development.  
8. The further development of chalk beds in southwestern Arkansas should be expected. These provide ma-

Table 1, showing values in dollars of minerals produced in Arkansas from 1900 to 1929, inclusive, Figure 1.

Mineral	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
Asphalt	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Antimony	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bauxite	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Clay prod.	381,012	407,263	520,178	589,946	696,582	643,959	.....	.....	.....	.....	.....	.....	.....	.....
Clay, raw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Coal	1,653,618	2,068,613	2,539,214	3,360,831	3,102,660	2,880,738	3,000,339	4,473,693	3,499,470	3,523,139	2,979,213	3,396,849	3,582,789	3,923,701
Coal tar	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gas, illum.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gas coke	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fullers earth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gems, precious	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
stones	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gypsum	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Glass sand	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lead	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lime	64,036	62,163	82,853	89,337	142,713	114,846	121,953	159,566	122,290	133,025	127,068	109,067	102,833	95,846
Manganese	1,530	657	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mang. ore	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Marl	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mineral wat.	38,235	55,150	52,575	53,475	57,107	50,501	105,286	85,236	212,835	153,163	89,772	118,994	132,257	151,412
Natural gas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nat. gas gaso.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oilstones	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Petroleum	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phos. rock	225	.....	1,650	4,500	10,322	50,485	104,212	81,645	87,555	249,734	230,580	183,827	393,639	320,639
Sand & grav.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Silver	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Slate	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stone	238,890	154,998	211,195	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Zinc	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Miscellaneous	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total, eliminating duplications	2,390,788	2,752,544	3,428,587	4,189,689	4,137,274	4,483,137	4,935,699	6,741,794	5,537,773	6,453,558	5,942,934	6,361,312	6,849,135	7,627,748

(1)—Shows value of derived products under which raw products are included.  
(2)—Included under miscellaneous.  
(3)—Exclusive of pottery, value of which is included under miscellaneous.  
1—Exclusive of marble, value of which is included under miscellaneous.  
2—Exclusive of sandstone, value of which is included under miscellaneous.  
3—Estimated by using U. S. Bureau of Mines production figures and unit price for 1928.  
x—Value not included in total value for state.  
y—Included under manganese.

Table 2, showing quantities of minerals produced in Arkansas from 1900 to 1929, inclusive. Figures

Mineral	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
Asphalt, sh. tns.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Antimony, sh. tons	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bauxite, lg. tns.	3,445	867	4,645	25,713	25,748	32,956	50,267	58,942	33,703	101,531	110,406	122,183	117,299	169,871
Clay products, (see tbl. val.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Clay, raw, sh. tons	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Coal, sh. tns.	1,447,945	1,816,136	1,943,932	2,229,172	2,009,451	1,924,673	1,864,258	2,670,438	2,078,357	2,377,157	1,905,958	2,106,789	2,100,819	2,234,118
Coal tar, gals.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gas, illum., cu. ft.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gas coke, sh. tons	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fullers earth, sh. tons	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gems and prec. stones (see tbl. of val.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gypsum, short tons	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Glass sand, sh. tons	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iron ore, lg. tns.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lead, sh. tns.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lime, sh. tns.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Manganese ore, long tons	145	91	82	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Manganiferous ore, lg. tns.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Marl, sh. tns.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mineral waters, gallons	123,000	172,300	149,100	44,100	534,440	474,005	727,755	431,511	1,175,053	1,213,742	1,065,676	1,560,157	1,396,032	1,514,412
Natural gas, m. cu. ft.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nat. gas gaso-line, gals.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oilstones, sh. tons	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Petroleum, bbl.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phosphat. rock, long tons	75	.....	550	2,125	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sand & gravel, short tons	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Silver, Troy oz.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Slate, squares	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stone, sh. tns.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Zinc, sh. tns.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

x—U. S. Bureau of Mines figures. y—Included under manganese.

Table 3, showing percentages of total value of minerals produced in Arkansas from 1900 to 1929, inclusive, Figure 2.

Table 3, showing percentages of total value of minerals produced in Arkansas from 1900 to 1929, inclusive, Figure 2.

Figure 1, showing total value of minerals produced in Arkansas from 1900 to 1929, inclusive.

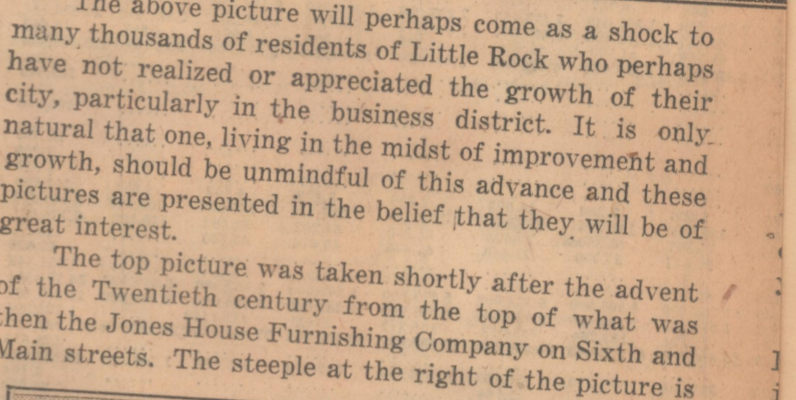


Figure 2, showing percentages of total value of minerals produced in Arkansas from 1900 to 1929, inclusive.



The above picture will perhaps come as a shock to many thousands of residents of Little Rock who perhaps have not realized or appreciated the growth of their city, particularly in the business district. It is only natural that one, living in the midst of improvement and growth, should be unmindful of this advance and these pictures are presented in the belief that they will be of great interest.

The top picture was taken shortly after the advent of the Twentieth century from the top of what was then the Jones House Furnishing Company on Sixth and Main streets. The steeple at the right of the picture is

## Strides of Progress

Writer Recalls Many Facts

Cont on next page

terial for the manufacture of Portland cement, quick lime, hydrate and agricultural lime.

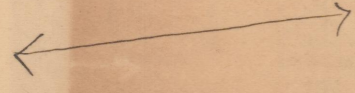
9. The further development of the immense deposits of limestones in north Arkansas may be expected. These limestones provide building stone, decorative marbles, terrazo limestone for making quick lime and hydrate, and agricultural lime.

10. Gravel production will be controlled largely by the character of the highway building and maintenance program in the state. The gravel reserves are very great.

11. There will probably be an increased development of the glass sand deposits of north Arkansas.

TABLE 3.  
Percentage of value of minerals produced in Arkansas from 1900 to 1929, inclusive, as taken from United States Bureau of Mines figures.

Year.	Fuels		Metallics		Nonmetallics		Total Value.
	Value.	Pct.	Value.	Pct.	Value.	Pct.	
1900	\$ 1,653,618	69.2	\$ 14,830	.6	\$ 722,340	30.2	\$ 2,390,788
1901	2,068,613	75.2	4,357	.2	679,574	24.6	2,752,544
1902	2,535,214	73.8	20,922	.7	868,451	25.5	3,424,587
1903	3,360,331	80.2	31,500	.7	737,358	17.6	4,129,189
1904	3,102,660	75.0	127,500	3.0	901,114	22.0	4,131,274
1905	2,972,688	66.3	184,780	3.7	1,345,669	30.0	4,493,137
1906	3,135,984	63.5	487,688	9.9	1,312,027	26.6	4,935,699
1907	4,473,693	66.5	530,064	7.8	1,738,037	25.7	6,741,794
1908	3,499,470	63.1	365,852	6.7	1,672,451	30.2	5,537,773
1909	3,523,139	54.6	561,113	8.7	2,369,306	36.7	6,453,558
1910	2,979,213	59.0	593,017	10.0	2,370,704	40.0	5,942,934
1911	3,396,849	53.3	656,767	10.5	2,307,696	36.2	6,361,312
1912	3,582,789	52.4	686,595	10.0	2,579,751	37.7	6,849,135
1913	3,923,701	51.6	921,358	12.0	2,782,689	36.4	7,627,748
1914	3,158,168	54.5	1,045,840	18.0	1,584,391	27.5	5,788,399
1915	3,143,548	47.0	2,197,440	34.1	1,233,129	18.9	6,574,117
1916	4,047,309	42.5	4,078,933	42.9	1,891,070	14.6	9,517,312
1917	5,808,389	48.2	4,686,413	38.9	1,566,900	12.9	12,061,702
1918	8,747,491	62.1	3,771,762	26.8	1,562,438	11.1	14,081,691
1919	6,175,844	57.7	1,946,354	18.1	2,587,015	24.2	10,709,213
1920	11,498,900	64.5	3,084,774	17.4	3,229,654	18.1	17,813,328
1921	19,090,000	84.8	778,833	3.4	2,646,579	11.8	22,515,412
1922	27,435,481	87.3	1,744,983	5.6	2,238,159	7.1	31,418,633
1923	35,763,000	85.4	3,098,562	7.3	3,092,757	7.7	41,954,319
1924	55,720,000	90.4	2,089,027	3.3	3,939,972	6.3	61,748,999
1925	81,523,000	93.5	1,999,717	2.3	3,662,815	4.2	87,185,532
1926	78,781,000	93.4	2,425,918	2.8	3,278,754	3.8	84,485,672
1927	54,355,000	91.5	2,025,022	3.4	3,069,078	5.1	59,449,100
1928	39,195,000	87.3	2,333,872	5.1	3,481,972	7.6	45,010,844
1929	37,663,498	86.1	2,360,574	5.4	3,754,912	8.5	43,778,984
Total	\$516,318,600	82.5	\$44,894,367	7.2	\$64,712,762	10.3	\$625,925,729



W. W. ...

# Tremendous Sums Have Been Realized Since First Well Was Brought in During 1921.

In this day of drouth and farm relief, the farmers of Union and Ouachita counties no doubt look back on January 10, 1921, and bless it. On this never-to-be-forgotten day the famous Busey oil well blew in near El Dorado. Since that time, approximately 350,000,000 barrels of oil have been produced in Arkansas fields with a value of approximately \$360,000,000. In addition to the oil values, millions of dollars have been expended in erection of derricks, construction of pipe lines and new buildings in the fields. It can safely be estimated that discovery of the fields has had a value of half a billion dollars to the state.

According to Chester W. Taylor, secretary of the Arkansas State Board of Conservation, large potential areas of oil and gas are as yet untested. The most recent discovery was in Miller county when on July 4, this year, Vincent Lenz brought in a well on the farm of G. W. Johnson in section 24, township 15, range 26. The well had an initial flow of 100 barrels a day and came in at 2,855 feet. It has since been placed on the pump and is said to be averaging 400 barrels a day. Several other test wells are being drilled in this area and more producers are expected.

Although the Busey well is known as the discovery of the El Dorado pool, the first real oil "sear" dates back to 1920 when the Trinity Drilling Company sank a well on the west edge of Union county near the Columbia county line. The first producing well in the area was brought in on April 10, 1920, near Stephens, and was known as the S. S. Hunter test. Although the well was never a paying proposition, its drilling led to the subsequent discovery of what is known as the Stephens field.

**Big Gasser in 1920.**  
On April 22, 1920, the Constantin Oil & Refining Company of Tulsa, brought in a giant gasser three miles southwest of El Dorado. This was the forerunner of the present big fields.

But it was on January 10, 1921, that Arkansas was to become known one of its greatest thrills.

On the afternoon of that day the Busey well blew in with a roar that could be heard for miles, flowing at estimates that ran all the way from 5,000 to 40,000 barrels per day. El Dorado, a small town of 3,000 people, immediately became the mecca of the oil fraternity. In two weeks its population had jumped to 15,000 and it was taxed beyond its capacities. Tents, shotgun houses and temporary buildings were thrown up at top speed. Food was at a premium and the supply of drinking water was threatened because of the increased demand. Streets and roads were jammed to fullness and due to the muddy roads to the fields, horses and mules supplanted automobiles in utility. In a year El Dorado had a population of 20,000 and by 1925 this had increased to 35,000. Handsome new and permanent buildings replaced the old temporary ones and fine schools and churches were erected in short order.

Since the Busey well came in, nine pools have been opened in that section. In the summer of 1921, what is known as the East field, five miles east of El Dorado, was brought in.

**Big Smackover Field.**  
Despite the fine flow and production in the immediate El Dorado fields, Arkansas still was due for another great field. In June, 1922, the Richardson discovery well was brought in at Smackover. This has been one of the greatest producers on record. Over 1,000,000 barrels of oil have come through its casing since it was brought in. Frenzied activity followed discovery of the new field and Smackover underwent a boom even greater than El Dorado's.

A second big boom hit Smackover area in 1925 when the Lion Oil Refining Company brought in a large producer in the 2,600-foot sand. In the period immediately following, more than 1,000 new wells were drilled in the field and the Roxana Petroleum Company brought in one of the largest producers in the world, making 60,000 barrels a day.

As a result of this new activity, the Smackover field in the last week of May, 1925, set a world's record for weekly production with 457,250 barrels. Railroads, pipe lines and stor-

age tanks were taxed to capacity. Earthen reservoirs were hastily thrown up to care for the immense production. These make-shift containers have now been replaced by huge steel tanks with a capacity of 55,000 barrels storage.

The boom which affected Smackover soon spread to surrounding territory and the benefits were unusually kind to Camden. Camden, since the boom, has become one of the leading cities of South Arkansas and has taken its place as an industrial center.

The Smackover field, incidentally, is known as one of the largest fields in the world and since the discovery well has produced over 300,000,000 barrels of oil.

The Stephens field, which dates back to the S. S. Hunter test in 1920, was brought in on November, 1921 and has produced over 4,000,000 barrels.

Nevada county made its bid for oil fame in September, 1922, when what is known as the Irma field was brought in. Through 1929 over 3,500,000 barrels had been recorded. Late in 1927, the Rainbow, or Champagnolle field was tapped and has produced approximately 4,000,000 barrels. The latest tests in the area have been in the Urbana-Lawson field, 14 miles east of El Dorado.

A number of small producers also have been brought in near Bradley, Lafayette county.

**Tank Line Activity.**  
Since the discovery well at El Dorado, approximately 1,600 miles of trunk and gathering lines for oil and gas have been laid on the several fields. Of these approximately 1,000 are for gas and 600 for oil. The Standard Pipe Line has the longest lines with 225 miles. According to figures in Mr. Taylor's office, over 6,000 wells have been drilled; 5,000 of which were in Union and Ouachita counties and of which 4,000 have been producers.

The enormous task of regulating the drilling and operation of the oil field has fallen, by legislative act, to the Arkansas State Board of Conservation, of which Parker C. Ewan of Little Rock is chairman.

Although the legislature was in session when the Busey well came in in 1921, the state was without regulation of the oil and gas industry until 1923 when the conservation law was passed and rules and regulations were adopted. Enforcement of the new regulations were placed in the hands of the Railroad Commission but no additional facilities for handling were given this board.

In 1927 the act was amended and the State Board of Conservation was created with an honorary board and permanent secretary in charge. The job of strengthening out the department and gathering statistics, records and information, was given to Mr. Taylor, who had served a short time in congress, completing the unfinished term of his father, the late Congressman Taylor of Pine Bluff.

Present members of the board are in addition to Mr. Ewan: T. J. Gaughan, Camden; H. L. Hunt, El Dorado; R. A. Tillery, Smackover, and M. E. Wilson, El Dorado. Mr. Gaughan is the attorney of the board. All others are experienced oil men. The board employs three field agents. D. J. Johnson of El Dorado is chief agent. His associates are C. E. Harris and G. L. Morton, both of El Dorado. Mr. Harris has just been sent to the Miller county field to enforce regulations and watch developments.

**Strict Regulations.**  
Before any driller can spud in a well, under the state law, he first must apply to the Board of Conservation for a permit. A check for \$25 must accompany the application together with a surety bond guaranteeing that if the well is dry it will be plugged and abandoned in accordance with the law.

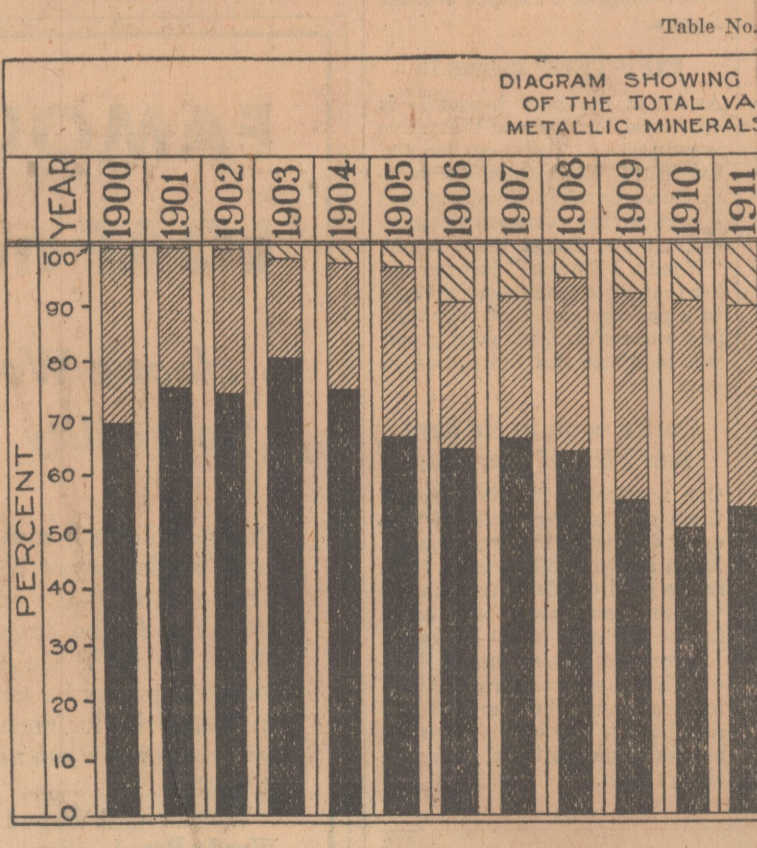
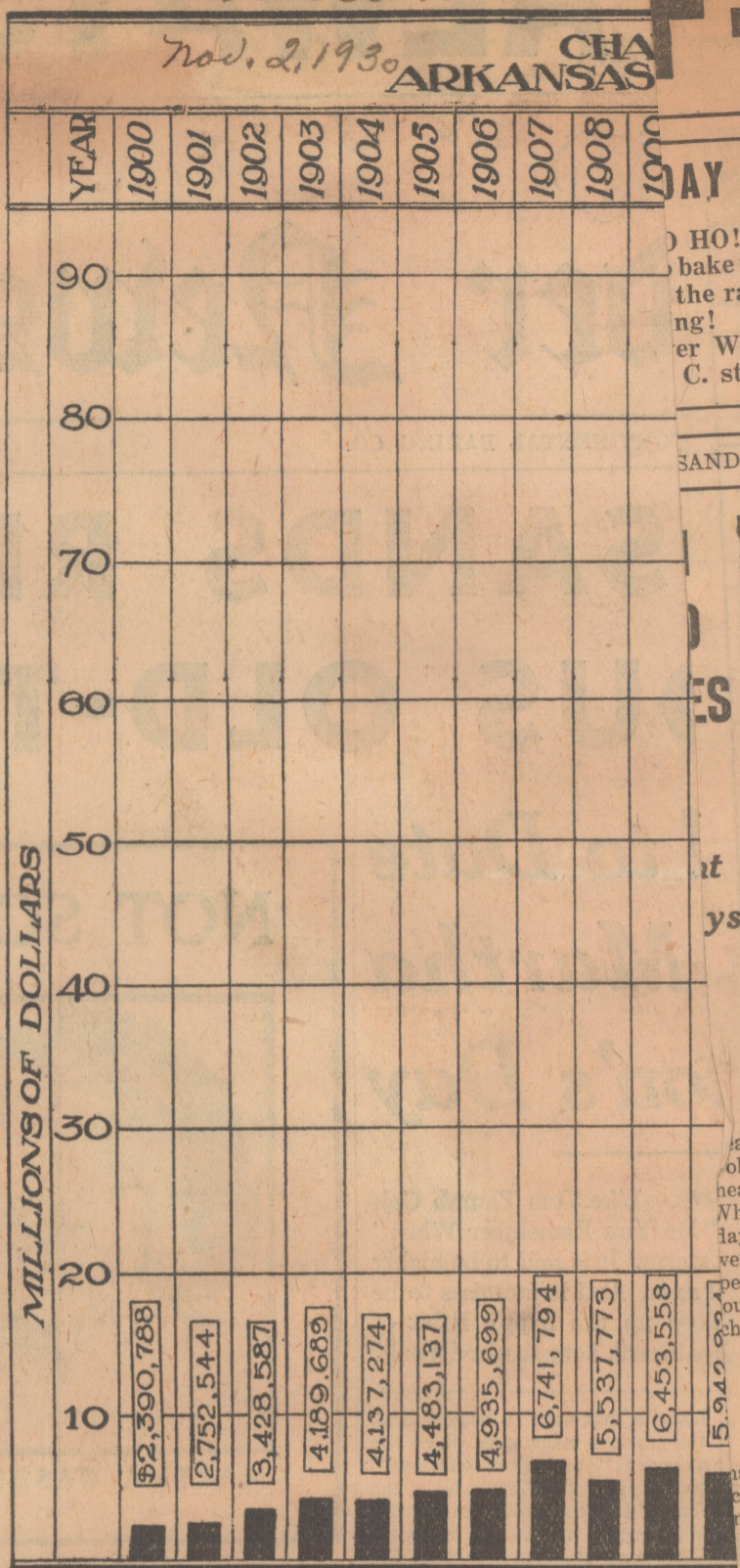
A daily log of operations must be kept for the board's information, and if the well is a producer and is connected with a pipe line, the name of the pipe line company must immediately be filed with the board.

If the drillers are substantial people, some slight concessions are made by the board, but if wildcaters, rigid rules and inspectors are laid down to prevent waste and protect the property owner. No well is permitted closer than 150 feet to an adjacent

Democrat  
Nov. 2, 1930

The tables Table No. 1

# F-TEENS



property line when drilling for oil other than for gas. Also permission will not be given to drill for oil less than 300 feet from a completed well nor within less than 600 feet of a producing gas well.

According to Mr. Taylor, the board has effective operating laws at present and in addition has full and plenary power to make and enforce any ruling necessary in an emergency.

Both Mr. Taylor and Dr. George C. Branner, state geologist, are convinced from geological studies that there are

DAY NITE  
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C. stations.

THE

SANDS OF HOMES

## REFUELS IN



Harry Soltis, 127 Bath Ave., Long Branch, N. J., in popular contest says Wonder Fiff-teens helped him to success.

### HERE'S HARRY'S TESTIMONY

A couple of weeks ago when us boys out he sitting contest, I had father be sure to send up to me, and as long as these "wonder" rolls early I wasn't up against it for going hungry.

HARRY SOLTIS  
127 Bath Avenue,

## BRIDE BEATS MOTHER But it's only at Baker's

And mother admitted it, herself. "I used to be quite proud of the light rolls I learned to bake when I was very young," she said. "It was one thing I teased my newly married daughter about—for I knew that she would never have the time and patience to bake rolls like those."

"Picture my surprise one evening, when she served the very same rolls at her home! "My daughter mentioned a new recipe, and laughed when I asked her what it was—'Just heat 'em and eat 'em,' she said."

"I haven't baked rolls myself in quite a while," the mother continued. "Why should I when Wonder Fiff-teens are just as good, and infinitely easier to serve?"

"In fact, I have to admit that Wonder Fiff-teens are even better than the rolls I used to bake. Their size is more uniform—and more



"Mother didn't young bride. valuable lesson were no Wonder young. They sa

in the state and that the years will bring boom periods throughout Arkansas. In fact in an article quoting Dr. Branner, and appearing in the Democrat of August 31, this year, it was estimated that Arkansas has a sufficient supply of natural gas to last from 50 to 100 years. Dr. Branner is of the opinion that the greatest gas development will come from the Arkansas river valley region. There already are several gas fields in the territory but it is believed that the surface has not been scratched.

# PLAN FOR REORGANIZATION OF GOVT

The reorganization plan for the government of Arkansas, prepared by the National Institute of Public Administration and the Bureau of Municipal Research, provides for the following administrative branches, with responsible heads as indicated:

Executive Department, governor.  
Department of Finance, commissioner of finance.  
Department of Revenues, commissioner of revenues.  
Department of Agriculture, commissioner of agriculture.  
Department of Conservation, commissioner of conservation.  
Department of Labor, commissioner of labor.  
Department of Corporations, commissioner of corporations.  
Department of Public Welfare, commissioner of public welfare.  
Department of Highways, State Highway Commission.  
Department of Education, State Board of Education.  
Department of Law, attorney general.

Heads of these departments, excluding those of governor and attorney general, are to be appointed by the governor with the advice and consent of the Senate. Terms of office of all department heads, except the Highway Commission and the Board of Education, will expire with the governor's term of office. The Highway Commission will continue to be appointive for 10-year terms, one member being appointed every two years. The Board of Education will continue to be composed of seven members, one from each Congressional district, to be appointed for overlapping terms of seven years, one member's term expiring each year.

Terms of the governor, lieutenant governor and attorney general will be for four years and the governor will not be eligible to succeed himself.

The state auditor, as head of the Department of Audit, will be elected by the General Assembly for a term of four years and in the event of a vacancy in the office the president of the Senate and the speaker of the House will appoint an auditor to serve until the legislature meets in regular or special session.

## Must Amend Constitution.

The survey report contains two proposed constitutional amendments, adoption of which will be necessary before the reorganization plan can be put into effect. It also contains a draft of an "administrative code," containing 63 sections and comprising approximately half the 144-page report.

Proposed Amendment "A" is a revision of Article 6 of the constitution, designating the powers and duties of the Executive Department of the government.

It provides for a short ballot, eliminating from the constitution the offices of secretary of state, treasurer, auditor, and commissioner of state lands; creates 11 administrative departments, provides for appointment of the departmental heads, establishes a complete and comprehensive state budget system under executive direction, and gives the governor the veto power over items or parts of items in appropriation bills.

Proposed Amendment "B" is intended to modify a few provisions of the constitution so as to bring them into harmony with Article 6, as amended. It establishes a Department of Audit under supervision of a state auditor, appointed or elected by the legislature. It provides, as far as possible, for a single appropriation bill, eliminates from the constitution the Department of Mines, Manufactures and Agriculture, the state geologist, and the Contract Approval Board, and makes some other minor changes designed to facilitate operation of the reorganized state government.

## Governor's Cabinet Provided.

The administrative code, submitted for consideration by the legislature, provides a complete set up for operation of the administrative affairs of the state. It provides that the executive officers of the departments shall constitute the governor's cabinet, or advisory staff on administrative matters, the governor to hold cabinet meetings at least quarterly, or monthly, if he desires.

The purpose of these meetings will be to consider administrative problems, to devise practical methods for coordination of work and elimination of duplication, and to review the budgetary requirements of each quarter.

The plan provides for a system of personnel control under the Department of Finance, which will supervise employment of subordinate officers in the administrative departments and all other state employes, with a few exceptions. The object of the personnel control system will be to procure capable employes and to retain them in the state service as long as their work is satisfactory.

No salaries are recommended in the proposed administrative code for the executive officers of the departments, the subordinate officers or any of the employes. The report said it is contemplated, if the reorganization plan is adopted, that the legislature will establish salaries for the executive officers of the several departments which will procure for the state the services of trained and experienced persons.

Other states, it is said, with conditions and resources comparable to those of Arkansas, are paying departmental heads from \$4,000 to \$6,500 a year. The report said salaries of subordinate officers and employes should be fixed on the basis of responsibility, training and experience, with flexible scales.

Sections of the code pertaining to conduct of the administrative departments provide that each department is to maintain a central office at the capitol, which is to be kept open every day from 8 to 5, except Saturday afternoons, Sundays and holidays. All officers and employes are required to work eight hours each full day and all employes are to receive a 14-day vacation with full pay during each year.

## Structure of 1874 Was Soon Outgrown

In a brief introductory to the findings and recommendations, the survey officials said:

"The existing administrative structure of the state government of Arkansas is built around the provisions of the constitution of 1874. Although this constitution has since been amended several times, the amendments have not affected to any appreciable extent the executive or administrative offices created by the original document. Only the lieutenant governor has been added to the list of constitutional officers, and that amendment became effective quite recently.

"Arkansas has, therefore, an administrative structure erected upon a groundwork laid out some 56 years ago. However, wise the framers of the constitution of 1874 may have been, they could not possibly have foreseen the vast development in state administration which has taken place during this period, especially within the last two decades.

"No wonder the structure which they provided was pretty well outgrown by 1900, or shortly thereafter. It was then no longer possible to attach all the new functions to the existing constitutional offices. By about 1910, the General Assembly began to establish statutory offices, boards, commission and agencies, although the framers of the constitution had explicitly stated that it should have no power to create any permanent state office not provided for in the constitution. As practical method of getting around the constitutional provision, the General Assembly frequently created the statutory offices for a definite term of years. Even though the state courts approved this method, it did not fully meet the rapidly growing needs of the state government. By 1920, approximately three score administrative agencies had been established. This number had grown to nearly 100 by 1930.

"From a structural standpoint, it is not easy to describe the present state administration. Briefly, it consists of several constitutional offices which have existed for about two generations, a number of statutory additions to these offices, and a great many more or less independent offices, boards, and commissions created by the General Assembly in recent years. As a structure, the administration is very rickshack, consisting of many statutory leantos without the proper constitutional ground work, not at all closely integrated and largely lacking in the co-ordination of its numerous activities. Some extremely antiquated methods are followed, particularly in the state's financial procedure. The state administration lacks unified direction and control; it has entirely too many officials for a comparatively small government. Official patronage looms large throughout the entire state service.

"In view of these facts, the time ought to be ripe, it seems, for a thoroughgoing administrative reorganization. Undoubtedly the future growth of the business, industry and commerce of the state would be greatly aided by such a reorganization. In the development of its natural resources, the state has hardly begun; an orderly rearrangement of its administrative machinery would stimulate undertakings in this direction. Furthermore, the present work of the state government demands an administrative structure under which official responsibility cannot be evaded, a personnel selected because of its competency rather than its political alignment, and methods which measure up to the demands of modern business enterprises; if it is to be conducted in the most effective and economical manner."

## Four Bureaus Are Provided by Code

The administrative code provides that the Executive Department shall consist of four bureaus, with bureau heads as follows:

Bureau of Records, supervisor of records.  
Bureau of Buildings and Grounds, superintendent of buildings and grounds.  
Bureau of Military Affairs, adjutant general.

The Veterans Service Bureau, director of the Service Bureau.

The Bureau of Records is to keep all the documents and records now maintained in the secretary of state's office, except those relating to corporations. The supervisor of records may be the governor's private secretary. Transfer of most of the custodial duties of the secretary of state to a bureau of this nature has been tried with apparent success in Virginia and at a considerable reduction in the cost of operation, the report said. The governor and attorney general would perform the duties of the present state Board of Election Commissioners.

The Bureau of Buildings and Grounds would take over the custody of the capitol and grounds, a function now vested in the secretary of state's office, and would supervise the custodial and janitorial work of the War Memorial building, a duty now performed by a special board.

The Bureau of Military Affairs is to embrace the functions of the adjutant general's office and the adjutant general as now appointed will be retained as head of that bureau, with no radical changes in the present method of operating the department.

The Veterans Service Bureau would take over the work of the Arkansas Service Bureau, but no changes are proposed in the method of selecting the director or in the set-up of the bureau.

The State Athletic Commission would be placed under the Executive Department without change in the method of appointing the commission, but with an officer or employe of the Executive Department taking over the duties of the secretary of the commission.

The Capitol Art Commission would be attached to the Executive Department without change in its personnel, or manner of appointment, but with all its secretarial work to be carried on in the Executive Department.

Department of Finance. The Department of Finance would have the bureaus, with an executive officer at the head of each bureau, as follows:

Bureau of Budgeting, director of budgeting.  
Bureau of Accounting, state controller.  
Bureau of Purchasing, director of purchasing.  
Bureau of Personnel, director of personnel.  
Bureau of the Treasurer, state treasurer.

This department sets up a complete new financial system for the state and the administrative code sets out in detail the operation of the department.

Financial System. Concerning this department, the report said in part:

"The financial system of Arkansas, from a structural and procedural standpoint, has grown quite archaic. Some recent attempts have been made to improve it, but apparently without much success. One of the more important of these attempts was the creation in 1917 of the Auditorial Department, under the direction of state comptroller. The main function of this department is postauditing work. In addition, it is responsible for the administration of a limited budgetary procedure. These improvements, however, have not remedied the fundamental defects of the state's financial system. It still lacks integration, businesslike procedure, and responsible executive direction and control.

"The state government has no central accounting system worthy of the name. The general accounts, if they may be so designated, are kept in the state auditor's office and are on a cash basis. A similar set of accounts is kept in the state treasurer's office. Neither of these sets of accounts supplies the information needed for budgetary control purposes. The state comptroller maintains a third set of accounts in an attempt to keep up with current commitments and encumbrances. There is no satisfactory preaudit of claims before payment. The state auditor's review of claims is perfunctory, generally coming after negotiable vouchers have been issued by departmental disbursing officers. The post audit conducted by the state comptroller is unsatisfactory, since it is based largely upon an examination of departmental vouchers rather than original documents. It is performed too infrequently to serve as a means of current control. The treasury method of handling state funds also is quite antiquated. Acting depositories which handle checking accounts are not in vogue, in fact, the state does not issue checks, but maintains cash in the treasury and pays it out over the counter upon the presentation of warrants drawn by the state auditor. Finally the state government is without any scheme of personnel supervision and centralized purchasing of supplies is applied only in a limited way.

"The Bureau of Budgeting is to have supervision over the preparation of the budget and certain phases of its execution. It also will conduct continuous surveys of departmental organization and management with a view to increasing efficiency and will exercise supervision over the editing and publication of reports. It is believed that

if the complete budgetary procedure outlined in the code is carried out, it will give the state government a budget system second to none in the country. It should tend to eliminate supplemental and deficiency appropriations and emergency proclamations.

"Under the Bureau of Accounting provisions are made for the establishment of a central accounting system on the accrual basis, a careful audit of all claims before payment, and the preparation of current information essential to the execution of the budget. The intention is to install one controlling set of accounts in this bureau for the entire state government. Subsidiary accounts will be kept in the department and institutions where they are required to complete the central system, but not otherwise. This will eliminate a great deal of book-keeping that now exists among the various state agencies, making for better records and control and reducing the amount of clerical and other services needed. The new accounting system should be designed to use the latest machine methods, including the tabulator for purposes of distribution and analysis. Successful businesses usually have their accounts set up on this basis. There is no reason why the state should not operate in the same manner, producing its financial information through one central accounting system, quickly and accurately, by the use of machines and a small number of trained employes."

Elimination of all the special expendable funds as rapidly as possible and the pooling of all such funds in the general revenue fund; establishment of a uniform fiscal year for all state agencies; establishment of a comprehensive system of centralized purchasing for the state government, and centralized supervision and control of personnel under a modified form of civil service are other proposed changes which would be handled through the Department of Finance.

Patronage Spectre At State Capitol

Regarding the personnel question the survey said:

"Hundreds of state employes are selected with little regard for their training and experience, or other evidence that they are qualified to do the jobs to which they are assigned. Political patronage looms large in many of the offices and agencies of the state capitol. At times the turnover of employes in the offices of some of the elective officials is almost 100 per cent. In some of these cases practically raw recruits are brought in for personal or political reasons and assigned to carry on important work. By the time these employes acquire even a rudimentary knowledge of the office duties and routine, they may be displaced by others just as untrained as themselves. Certainly here is one of the chief sources of waste in the Arkansas government. Without a trained personnel, permanent on the job, the chances of making advances, as well as economies, in the state government will be greatly curtailed. Mediocre service is likely to continue in many branches of the government under the proposed reorganization plan if the general character of the personnel is not greatly improved. For this reason the Bureau of Personnel in the Department of Finance has been given the power to select qualified persons for employment in the various state services, to classify employes, determine salary scales, check payrolls, make job analyses, devise service ratings, and establish general employment regulations. The intention is to establish orderly personnel management in the state government, which means control over the largest item in the state's operating expenditures, salaries and wages."

In taking over the functions of the existing state treasurer, the Bureau of the Treasury will receive and disburse all state moneys, reporting receipts daily to the Bureau of Accounting. The former bureau will keep only such accounts as are necessary to show receipts, disbursements, deposits and investments. All agencies receiving state revenues will be required to turn them over to the treasury daily or to deposit them in a designated depository to the credit of the treasurer. The treasurer will carry active checking accounts in some of the state depositories and may issue checks in payment of claims against the state.

Under the proposed system of disbursement, all payrolls and bills would go to the Bureau of Accounting to be audited. If approved, a warrant, signed by the comptroller, would be issued to the person or firm receiving payment. The warrant then would be presented to the state treasurer, and upon being countersigned by him, it would become a check and could be cleared through the banks in the ordinary commercial manner until it reached the active depository upon which it had been drawn. The depository and treasury would settle their accounts at intervals. This system would eliminate approximately 100 disbursing officers for various state offices and agencies, practically all of whom are bonded at the expense of the state.

The report did not contain a detailed forecast of financial requirements for meeting payments on the state's bonded debt, but it was said in the report that the annual debt service on highway bonds alone will be about \$10,000,000 after 1932 and warned that if the business depression should retard the growth of revenues from motor vehicle licenses and gasoline tax, there would be only a slender margin from those sources for maintenance and for new construction of highways.

It was pointed out that the total authorized debt on which the state will pay interest and principal maturities, including the bonds of road improvement districts and all state bond issues, amounts to approximately \$165,000,000. All these bonds have not been issued, but the state now is paying interest at rates varying from four and a fourth to six per cent on about \$130,000,000.

The report said pensions paid to Confederate veterans are "extremely generous," compared with other states, an dhat absence of adequate restrictions as to length of residence within the state as a prerequisite to drawing a pension tends to increase the cost of pensions to a point far beyond the original estimates.

State Debt Discussed. "The general situation with reference to existing state debt and to future improvements to be financed by further borrowings has reached a point where it urgently requires the same type of analysis which was used as a basis for correcting the critical situation created by the collapse of the road improvement districts," the report said. "This time, however, the problem covers a wider range. All state debt recognized as valid, regardless of the purpose for which incurred or the revenues by which supported, will have to be taken into account. The same high type of ability and leadership which straightened out the highway bond tangle can also solve the problems involved in the state debt situation as a whole. If applied promptly enough to eliminate the several dangerous factors in the situation the formulation of an adequate plan should be comparatively simple. If there is undue delay, the situation may become as critical as was the road situation."

The administrative code provides that the state budget shall present a complete financial plan for each fiscal year of the ensuing biennium, setting forth all proposed expenditures for the administration, operation and maintenance of the departments, offices and agencies of the state government, including interest and bond retirement and expenditures for capital projects to be undertaken during each fiscal year of the biennium.

The budget document must contain specified information concerning estimates of expenditures and revenues and must include a complete draft of budget bills which the legislature will be asked to pass to give legal sanction to the financial plan.

The Bureau of Budgeting is required to prepare by September 1 of even-numbered years a tentative estimate

of available revenues for each fiscal year of the ensuing biennium. On or before November 1 of the same year each department and state agency is required to furnish the Bureau of Budgeting estimates of their expenditure requirements for each year of the ensuing biennium, compared with actual expenditures of the last completed fiscal year and estimated figures for the current fiscal year.

The budget estimates are to be revised by December 15 for inclusion in the governor's budget. The governor, with the assistance of the commissioner of finance, may revise and alter the budget to meet requirements and conditions then existing, keeping within the total anticipated income. The governor is required to submit the budget to the legislature not later than the close of the first week of the session, except that an incoming governor shall not be required to submit his budget before February 1.

The budget document is to be referred to the joint Budget Committee of the General Assembly, which may hold hearings, make investigations, etc., but which is required to report a single appropriation bill to the legislature at least three weeks before adjournment.

The legislature may make any changes it deems necessary in the governor's budget, but within 10 days after final action on the measure, the joint Budget Committee must make public a summary statement showing clearly the changes made by the legislature in the course of its consideration of the governor's budget.

Not later than June 1 of each year, the governor shall require the executive officer of each department and state agency to submit to the Department of Finance a work program for the ensuing fiscal year. These programs may be revised by the governor and Department of Finance and expenditures of each department and agency shall be limited to the requested allotments approved by the governor. The aggregate of allotments for

various purposes within a department shall not exceed the total appropriation for that department or agency and the commissioner of finance, with the approval of the governor, may require departments to set aside a portion of their appropriation as a reserve for emergencies.

The state treasurer, with the approval of the commissioner of finance and the commissioner of corporations, shall perform the duties of the present state Depository Board. The Department of Finance shall be charged with the powers and duties now held by the state Debt Board, the state Note Board, the Confederate Pension Note Board and the Surety Bond Board.

### Plans Bureaus for Revenue Department

The Department of Revenues will have five bureaus and executive officers as follows:

Bureau of State Taxes and Business Licenses, director of taxes and licenses. Bureau of Equalization, director of local taxes.

Bureau of Motor Vehicle Registration, registrar of motor vehicles. Bureau of Delinquent Property Taxes, registrar of property tax lines.

Bureau of Inspection, chief inspector. Duties assigned to the Department of Revenues, in addition to those now performed by that department, would include the following:

Duties and powers now vested in the state oil inspector with reference solely to the preparation and submission of reports on the amount of gasoline manufactured and sold in the state by manufacturers or wholesale dealers. Inspection of gasoline and kerosene would be abandoned as no longer necessary, except occasional inspection of samples sent in by consumers or dealers.

Duties and powers now vested in the state Tax Commission with reference to assessment, levy and collection of taxes on capital stock of domestic and foreign corporations.

Duties and powers now exercised by the insurance commissioner and state fire marshal with reference to the assessment, levy and collection of the tax on gross premiums of insurance companies and apportionment of the firemen's relief and pension fund derived from a portion of the premiums tax on foreign fire, tornado and marine insurance companies.

Powers and duties now vested in the Arkansas Railroad Commission relative to taxes on the gross receipts of persons or corporations taking or using water power.

Powers and duties now vested in the Arkansas Tax Commission with reference to the original assessment of properties of utilities and private car companies, general and complete supervision and control over the valuation, assessment and equalization of all property, privileges and franchises by county assessors, county boards of review and equalization, and over the collection of property taxes throughout the state.

Powers and duties now vested in the auditor of state with reference to the preparation and distribution of tax forms, including poll tax receipts.

Powers and duties now vested in the state Highway Commission with reference to registration and licensing of motor vehicles.

Powers and duties now vested in the commissioner of state lands relating to custody, sale, donation, or redemption of lands forfeited or sold to the state for the nonpayment of taxes.

The commissioner of revenues, the director of local taxation and the chief inspector will constitute a state Board of Equalization with all the powers now held by the Tax Commission in its capacity as an equalization board.

#### Department of Agriculture.

The Department of Agriculture will consist of three bureaus, as follows:

Bureau of Animal Industry, the head of which will be the director of animal industry.

Bureau of Plant Industry, director of plant industry.

Bureau of Feed, Seed and Fertilizer Control, director of feed, seed and fertilizer control.

The director of animal industry must be a qualified veterinarian, trained and experienced in the administration and methods of animal disease control, and the director of plant industry must be similarly experienced in that line of work.

Powers and duties of the Department of Agriculture will include the following:

All functions of the present Department of Mines, Manufactures and Agriculture, including the Bureau of Crop Estimates and Immigration, the Arkansas Development Commission and the Bureau of Commerce and Industry; Board of Supervisors of Warehouses and the Warehouse Marketing Bureau; supervision of field seed inspection and tests for germination; all functions of the Veterinary Science Department, state veterinarian, and Board of Animal Control; duties of the state Apiary Board and apiary inspector; duties of the state Plant Board and the state Board of Orchard Inspection.

All duties of the commissioner of conservation and inspection relating to

## Facts Concerning The Survey Agency Which Compiled Report on Arkansas

The Bureau of Municipal Research was incorporated in New York in 1907 as an impartial and non-political consultant on governmental problems.

The organization grew out of research work performed the year before in New York city by the Citizens' Union, composed of a group of business men headed by R. Fulton Cutting, present chairman of the Board of Trustees.

In 1921 the parent agency was expanded into the National Institute of Public Administration, with the original title retained for the municipal division.

The organization has furnished the research staff for the New York Legislative Committee on Taxation and Retrenchment for the past 10 years.

Surveys of state governments include New York, Virginia, Illinois, Minnesota, and others.

In Virginia, more than 100 bureaus, boards, commissions and departments, many independent of each other and of the governor, were merged into 14 general administrative departments, 11 of which are responsible to the governor.

Municipal surveys include a tax assessment investigation in Chicago, in which every property owner was provided with photostat copies of assessments on all real estate in the city, by streets and house numbers, including dimensions of the lots.

The Institute's Training School for Public Service has trained men and women who now are teaching in the political and social science departments of 26 colleges and universities; has trained scores of men for city management positions, or directors or employees of bureaus of municipal research.

The Board of Trustees is composed of R. Fulton Cutting, chairman; Raymond B. Fosdick, vice chairman; Richard S. Childs, treasurer; Herbert Hoover, Newton D. Baker, Frank O. Lowden, Robert S. Brookings, Mrs. E. H. Harriman, E. Roland Harriman, Charles E. Merriam, Carl H. Pforzheimer, Edwin R. A. Seligman and Leonard D. White. Luther Gulick is director and Carl E. McCombs is manager.

Inspection of commercial feedstuffs and fertilizers, and the chemical analysis or inspection thereof. In addition the department would carry on all work relating to modern agricultural service, marketing, distribution, control of livestock diseases, etc., and would co-operate closely with the College of Agriculture and Experiment stations of the state university, and with the federal government in all matters pertaining to agriculture.

Authors of the survey report said they desired to emphasize the fact that unless certain existing agencies which perform regulatory and promotional functions are abolished and these functions are redistributed under a new Department of Agriculture, the state can hope to gain very little. They said it would be a mistake to try to build up a Department of Agriculture around any of the existing agencies, that it would be a patchwork plan at best, and would fail to meet the urgent requirements for the development of agriculture in the state.

#### Department of Conservation.

The Department of Conservation would have three bureaus, with executive heads as follows:

Bureau of Mines, Oil, and Gas Wells, state geologist.

Bureau of Forests and Parks, state forester.

Bureau of Game and Fish, chief game protector.

Duties allotted to this department include:

All powers and duties now vested in the state geologist; duties of the commissioner of conservation and inspection and the Board of Conservation with reference to the conservation of oil and gas; duties of the state mine inspector with reference to submission of blanks for annual reports of coal mines by each operator, and the duties of the secretary of state with reference to receiving mine maps from the mine inspector; duties of the Arkansas Railroad Commission with reference to the control of state owned water power; duties of the state Park Commission; duties relating to prevention and suppression of forest fires and supervision of a state reforestation program, and all duties of the present state Game and Fish Commission relative to the conservation and propagation of game and fish, supervision of hatcheries, game refuges, etc.

The administrative code provides machinery for the state to acquire absolute title to waste lands, cut-over timber lands forfeited for taxes and other forfeited lands by paying the county a stated sum outright, or by paying local taxes on such lands to help support county schools and other local governmental agencies. It is proposed that the state establish a series of parks in connection with reforestation projects and game refuges. It was pointed out that such projects would contribute materially to the solution of the state's flood control problems.

#### Department of Labor.

Under the Department of Labor would be grouped the following bureaus and executive officers:

Bureau of Industrial Hazards, chief inspector.

Bureau of Employment and Statistics, chief employment agent.

Bureau of Industrial Relations, director of industrial relations.

Functions of the department would include duties now vested in the commissioner of labor and statistics, the Bureau of Labor and Statistics and the Industrial Welfare Commission, and the following additional duties:

Powers and duties now vested in the state insurance commissioner and fire marshal with reference to enforcement of laws for the prevention of fires; duties now vested in the state mine inspector and the state Board of Examiners for Coal Miners; duties of the Bureau of Commerce and Industry of the Arkansas Development Commission with reference to the study of labor conditions and the promotion of industrial and commercial activity, and duties relating to the administration of a workmen's compensation law whenever the General Assembly shall enact such a law.

At the expiration of terms of present members of the Board of Examiners for Coal Miners, the commissioner of labor would appoint four new members and they would name a fifth member and choose its own chairman. A full time employe of the Department of Labor would serve as secretary of the board without additional compensation.

#### Department of Corporations.

In the Department of Corporations work of the present state Bank Department and a good portion of the work of the Railroad Commission, secretary of state, and Insurance Department would be concentrated.

Following would be the bureaus and executive officers:

Bureau of Charters and Securities, supervisor of securities.

Bureau of Banking and Insurance, supervisor of banking and insurance.

Bureau of Utilities, supervisor of utilities.

Powers and duties of the department would include the following:

Duties now vested in the secretary of state with reference to domestic and foreign corporations.

Duties of the present Bank Department and state bank commissioner with regard to banks, trust companies, investment companies and building and loan associations.

Duties of the state Insurance Department and insurance commissioner not already vested by the code in the Department of Revenues, Department of Labor and Department of Law.

Duties and powers of the Arkansas Railroad Commission, except those relating to issuance of permits for erection of water power dams, which will be vested in the Department of Conservation, and duties relating to collection of the tax on gross revenues from power generated, which will be vested in the Department of Revenues.

Duties of the state Board of Railroad Incorporation.

The report said the work of the present Securities Division of the Railroad Commission and the Insurance Department is very similar to work required of the Bank Department with reference to supervision of banks, trust companies building and loan associations, etc., and that all such work should be grouped under one general department.

Supervision of railroad rates and other public utility rates, involve the necessity for a fair return as well as adequate service at a reasonable price, the report said, and all these questions can be handled under one responsible department.

The report recommended that the motor vehicle transportation act be amended to make it applicable only to common carriers operating over fixed routes, thus relieving the state of responsibility for supervising taxicab and local transfer concerns, contract haulers and those operating over irregular routes. The latter classes of carriers would be licensed, would be required to file a schedule of rates and to carry indemnity insurance.

Regulation of ice companies is not a common practice among the states, the report said, and added that the survey failed to disclose any reason for continuing such regulation unless the state proposes to regular electric, gas and water rates within municipalities, since the same utility company frequently furnishes all these services, including distribution of ice.

### Honorary Boards To Be Abolished

Under the Department of Public Welfare would be grouped the state Health Department, Juvenile Court supervisor, the penitentiary, state Hospital for Nervous Diseases and other penal and correctional institutions.

The department would have three bureaus as follows:

Bureau of Health, director of health. Bureau of Social Welfare, director of social welfare.

Bureau of Institutional Supervision, director of institutional supervision.

The administrative code provides that the Department of Public Welfare shall have power:

To exercise powers and duties of the state Board of Health, state health officer, Bureau of Sanitation, hotel inspector, soft drink inspector; to regulate foods and drugs and perform other similar duties now vested in the commissioner of mines, manufactures and agriculture, state treasurer and secretary of state; to perform the duties now vested in the state Board of Pensions, the Commission for Relief of Indigent Blind, and all duties now vested in the honorary boards of the various state penal, charitable and correctional institutions; to grant paroles from all such institutions; to investigate and supervise private welfare agencies of all kinds operating in the state, and to issue regulations relating to control of epidemic diseases and to carry on other work necessary to preservation and improvement of the public health. The commissioner of public welfare, the director of social welfare and the director of institutional supervision would constitute a Parole Board, and an Advisory Council of Public Welfare, consisting of five members to be appointed by the governor for overlapping terms of five years, is provided for by the administrative code.

#### Department of Highways.

The Department of Highways would retain all the powers and duties set forth in Act 65 of 1929, except the

administration and collection of motor vehicle license fees. The administrative code authorizes the chairman to reduce, enlarge, or transfer the personnel of any bureau or division of the Department of Highways to meet the fluctuating demands of the department and provides that the continuous audit provided for in Act 167 of 1929, which never was put into effect, be abandoned, since a preaudit of all financial transactions of the department would be made by the Department of Finance through the Bureau of Accounting, and a postaudit of its transactions would be made by the Department of Audit.

The report said the reorganization plan will make it possible to reduce the administrative staff of the Highway Department considerably, since much of the bookkeeping, practically all the auditing, most of the purchasing and office supply storekeeping of the department will be transferred to the Department of Finance. It was said the Highway Department now maintains elaborate accounts, as though it had little or no connection with the remainder of the state government. These accounts, such as the auditing of bills before payment, will be done in the Department of Finance. A preaudit by the latter department and a postaudit by the Department of Audit will establish complete control over highway expenditures, and will make an audit by private concerns unnecessary, the report said. It was suggested that the Highway Department should limit its accounting to production of cost data and that purchase of supplies, with the exception of maintenance materials, should be turned over to the Bureau of Purchasing of the Department of Finance.

#### Comments on Office.

Comments of the field workers on the Highway Department said in part: "Like a number of other states which have embarked on ambitious highway programs, Arkansas now is in a position which requires the most careful

planning for the future. How to meet the charges for interest and retirement on debt incurred or authorized for highway purposes; how to provide adequate maintenance for the present highway system; how to carry on the construction of additional mileage on the highway system after the present bond authorizations are exhausted—these constitute a series of closely related problems which can easily precipitate a crisis in state finances. At the present time, the state system of roads contains about 9,000 miles. This seems to be at least one-third more mileage than the state system ought to include. The federal officials have approved for federal aid only about 5,000 miles, of which the primary system contains about 1,800 miles and the secondary system about 3,200 miles. The 9,000 miles in the existing state system certainly is a mileage far in excess of what the state can hope to improve in any reasonable time from its funds which it may expect to use for this purpose. It appears inevitable that this condition would result in widely scattered improvements, in lowered standards for much of the improvements undertaken, and consequently in greatly increased maintenance costs. It is conceivable that a situation might arise in which maintenance costs on the large mileage of graded and graveled roads would eventually consume the entire revenues of the state available for highway purposes, leaving nothing for further construction. This indicates the urgent need for taking stock of what is to be done in the development of the state highway system, and using it as a basis for long term planning. Only such steps may avert financial disaster for the state government."

#### Department of Education.

Under the reorganization plan, the elective office of superintendent of public instruction would be abolished and the state Board of Education, which would remain as now constituted, would appoint a commissioner of education who would be the administrative officer of the Department of Education.

The plan calls for abolition of individual boards in charge of all the state educational institutions, except the University of Arkansas, and provides that the state Board of Education shall assume full administrative control of all institutions, as well as the state History Commission.

The state Textbook Commission is abolished and its duties assigned to the Board of Education.

All state professional examining boards are abolished and a Bureau of Professional Registration is to be set up in the Department of Education to take over the functions of all such boards, including the Basic Science Board. The director of professional registration will assemble the records of all examining boards now in existence and will have supervision over licensing regulations of all professions. The code provides that new examining boards may be appointed by the commissioner of education for each of the trades and professions required to be licensed or registered. The Board of Medical Examiners would consist of five persons, selected from a list recommended by the Arkansas Medical Society, providing that the homeopathic and eclectic systems of practicing shall have one representative each on the board.

Other examining boards would have from three to five members.

The University of Arkansas would be continued under a separate Board of Trustees, but provisions of the administrative code relating to budgeting, handling of receipts, making expenditures, and employing personnel, exclusive of faculty members, would apply to the university as to other institutions, departments and agencies.

The report said some of the state's educational institutions appear to be unnecessary from the standpoint of the educational needs of the state as a whole, having been established and located as they are largely because of political motives. It was said that there appears to be considerable over-staffing in some phases of the Department of Education's work, particularly in the vocational division, and that the department is doing much book-keeping relative to appropriations and expenditures which would be eliminated by the central accounting system to be established in the Department of Finance.

In its capacity as the controlling body for all state educational institutions, except the university, the Board of Education would appoint and remove heads of those institutions, approve faculty selections. "By vesting this authority in a single board," the report said, "it will be possible to reorganize the work of the several institutions so as to eliminate overlapping, systematize the courses of study, reduce harmful competition, and shift the emphasis to meet the growing needs of education in the state. It also will permit the co-ordination of institutional and departmental work, a desirable thing that cannot readily be brought about under the present arrangement."

#### Department of Law.

The Department of Law would have and exercise all the powers and duties of the attorney general as now provided by law, except the supervision of juvenile delinquency, which is assigned to the Department of Public Welfare. It would be the duty of the attorney general to advise the governor and the administrative departments in

all legal matters. The executive officer of each administrative department would be authorized to employ at a stipulated compensation special attorneys and legal assistants, in connection with the handling of any matters of administration, provided the governor must approve such employment and the General Assembly must have made an appropriation to compensate such special attorneys or assistants.

This provision was inserted, the report said, to prevent an attorney general who might be antagonistic to the governor from hamstringing the administration by refusing to give proper advice or to take necessary legal action.

**Department of Audit.**

The state auditor, under the proposed plan, would be a qualified public accountant and it would be his duty to perform a postaudit of all accounts and financial records of the state government. He would audit records of counties as required of the state comptroller under Act 302 of 1929, and would serve as a staff agency to the General Assembly or any of its committees in making investigations of any phases of the state's finances.

The auditor would keep no accounts in the Department of Audit but would conduct a continuous postaudit of accounts, books, records, and other evidence of financial transactions kept in the Department of Finance, or in the various departments, institutions and agencies of the state government. He would be required to publish a summary report within two months after the close of each fiscal year. It would be his duty to report to the governor any incompetence or improper transactions and to the governor and attorney general any evidence of illegal transactions.

The administrative code provides for the transfer of authority, obligations, records and property from the existing agencies, which would be abolished or discontinued, to newly established departments and bureaus.

It provides for the abolition of the following 92 departments, officers, bureaus, divisions, boards, commissions and agencies of the state government:

**Offices to Be Abolished.**

The following offices, departments, boards, commissions and agencies would be abolished under the reorganization plan:

1. Secretary of state.
2. State election commissioners.
3. Arkansas Service Bureau.
4. Auditor of state.
5. State controller.
6. State Auditorial Department.
7. State purchasing agent.
8. State Contract Approval Board.
9. State Depository Board.
10. State Debt Board.
11. State Note Board.
12. Confederate Pension Board.
13. Surety Bond Board.
14. Tax Commission.
15. Department or Bureau of Mines, Manufactures and Agriculture.
16. Commissioner of Mines, Manufactures and Agriculture.
17. Bureau of Crop Estimates and Immigration.
18. Arkansas Development Commission.
19. Bureau of Commerce and Industry.
20. Board of Supervisors of Warehouses.
21. Warehouse and Marketing Bureau.
22. Veterinary Science Department.
23. State veterinarian.
24. State Apiary Board.
25. Apiary inspector.
26. State Plant Board.
27. State Board of Orchard Inspection.
28. Commissioner of conservation and inspection.
29. State Board of Conservation.
30. State mine inspection.
31. Arkansas Railroad Commission.
32. State Park Commission.
33. State Game and Fish Commission.
34. Commissioner of labor and statistics.
35. Bureau of Labor and Statistics.
36. Industrial Welfare Commission.
37. Insurance commissioner and state fire marshal.
38. State Bank Department.
39. Bank commissioner.
40. State Board of Railroad Incorporation.
41. State Board of Health.
42. State health officer.
44. State Board of Pensions.
44. Commission for the Relief of the Indigent Blind.
45. Secretary for the honorary boards.
46. Honorary Board of Managers of the state penitentiary.
47. Honorary Board of Managers of the state Hospital for Nervous Diseases.
48. Honorary Board of Managers of the Industrial School for Boys.
49. Honorary Board of Managers of the state Farm for Women.
50. Honorary Board of Managers of the Training School for Girls.
51. Honorary Board of Managers of the Negro Tuberculosis sanatorium.
52. Board of Trustees of the Arkansas Tuberculosis sanatorium.
53. Honorary Board of Managers of the Confederate home.
54. Juvenile Court Division.
55. Superintendent of public instruction.
56. State Board of Education.
57. Arkansas Adult Education Board.
58. State Library Board.
59. Free Library Service Bureau.
60. State Textbook Commission.
61. Arkansas History Commission.
62. Board of Trustees of the State Teachers College at Conway.

63. Board of Trustees of the Henderson State Teachers College at Arkadelphia.
64. Board of Trustees of the State Normal School of the Ozarks at Harrison.
65. Board of Trustees of the Agricultural and Mechanical College at Jonesboro.
66. Board of Trustees of the Polytechnic College at Russellville.
67. Board of Trustees of Agricultural and Mechanical College at Magnolia.
68. Board of Trustees of Agricultural and Mechanical College at Monticello.
69. Board of Trustees of Agricultural, Mechanical and Normal School at Pine Bluff.
70. Board of Trustees of the Junior Agricultural School of Central Arkansas at Beebe.
71. Board of Trustees of the State Vocational Training School at Clinton.
72. Board of Trustees of the State Vocational Training School at Huntsville.
73. Board of Trustees of the School for the Blind and the School for the Deaf at Little Rock.
74. State Medical Board of the Arkansas Medical Society.
75. Eclectic state Medical Board.
76. Homeopathic Medical Board.
77. State Board of Embalmers.
78. State Board of Nurse Examiners.
79. State Board of Chiropractic Examiners.
80. State Board of Osteopathic Examiners.
81. State Board of Optometry.
82. State Board of Pharmacy.
83. Veterinary Examining Board.
84. Board of Accountancy.
85. State Board of Dental Examiners.
86. Board of Cosmetic Therapy.
87. Arkansas State Chiropody Examining Board.
88. State Board of Registration for Professional Engineers.
89. State Board of Examiners in Basic Sciences.
90. Arkansas Real Estate Commission.
91. State Honorary Aircraft Board.
92. Commissioner of state lands.

# STATE GOVERNMENT PLAN MADE PUBLIC

## Many Offices and Boards Would Be Abolished Under Proposed System.

### SWEEPING CHANGES MADE

Governor, Lieutenant Governor and Law Officer Elective—Legislature Would Name Auditor.

(An abstract of the reorganization plan will be found on page 13 of the second section of this issue of the Gazette.)

Governor Parnell yesterday made public the proposed plan for reorganization of the executive and administrative departments of the state government, as submitted to him by the National Institute of Public Administration and the Bureau of Municipal Research of New York.

A contract for a governmental survey by this agency was entered into last January. The field work was done last spring by A. E. Buck and Philip H. Cornick of the institute staff, and the findings and recommendations submitted to the governor were prepared by them in consultation with other staff members of the organization.

The reorganization plan calls for abolition of 92 separate offices, departments, bureaus, divisions, boards, commissions and agencies of the state government, some of which were created by the constitution of 1874, and others by constitutional amendment or legislative acts during the 56 years since the adoption of the present constitution.

The functions of most of these agencies are redistributed under the reorganization plan, which provides for the centering of all executive responsibility in the governor through the creation of 10 administrative departments under his control and directions, expansion of the attorney general's office, which would be known as the Department of Law, and establishing a Department of Audit, under supervision of the legislature, to act as an independent check upon other state departments.

All elective state offices in the executive branch of the government except those of the governor, lieutenant governor and attorney general, are abolished under the plan. The state auditor will be retained as head of the Department of Audit, but he will be elected by a joint vote of the two houses of the General Assembly and will be responsible only to the legislature.

#### Governor Favors Plan.

In making public the survey and recommendations of the National Institute of Public Administration, Governor Parnell said he will submit the proposed reorganization plan to the legislature soon after it convenes in January and that he will make every possible effort to obtain adoption of the program.

Details of the method of adoption have not been determined. The administrative code must be enacted into law by the legislature. The proposed amendments will have to be submitted to a vote of the people. Whether the governor has power to call a special election to vote on amendments submitted by the legislature has not been determined, but it is known that he has authority to call special elections on initiated measures.

It is probable that the governor will ask the legislature to enact the administrative code to become effective in January, 1933, at the expiration of terms to which the governor and other elective officials were elected at the general election, November 4, this year.

If it is found that there is no authority to call a special election for a vote on the proposed amendments, if they are submitted by the legislature, it was said that these measures probably will be initiated next spring and that a special election will be called soon thereafter for the people to express their choice in the matter.

#### May Be Voted On In 1932.

This procedure, it was pointed out, would eliminate from the primary and general elections of 1932 those offices abolished by the proposed amendments. If the amendments should not be voted on until the general election in 1932, candidates for all state offices would have been nominated at the preceding August primary and would have been elected at the same time the amendments were submitted to a vote. In this case it would be necessary to postpone the effective date of the reorganization plan another two years, or to hold a special election for the offices of governor, lieutenant governor and attorney general under the four-year term plan proposed in the constitutional amendments.

#### Means More Efficiency.

The survey report said the real return to the people of the state from the recommended plan of administrative reorganization would come from a better grade of service, more effectively rendered than heretofore has been possible, rather than from any great saving in dollars and cents.

An analysis of state receipts and expenditures showed that during the current fiscal year there would be available for the administration and operation of state departments, institutions and agencies, excluding the Highway Department, about \$6,259,000. This amount is practically all that would be affected by the reorganization plan, since no vital changes in present state policy are recommended, the report said.

#### Few Functions Dropped.

Very few functions have been dropped, but provision has been made for development of several important new functions, it was said. Savings to be made through centralized management of state educational institutions, probably would be absorbed almost immediately by "rapidly increasing demands of state educational work."

"Considerable money can be saved in the operation of the charitable, penal and correctional institutions through central supervision and direction by a Department of Public Welfare," the report said, "but this probably will amount to just about enough to support the new Department of Public Welfare and meet the growing demands of the institutional work."

"By a reorganization of the offices, departments and agencies at the capitol in accordance with the proposed plan, a considerable saving can be made, probably as much as a quarter of a million dollars, if we include the state Highway Commission. Many of the offices are overstaffed for the work which they are now doing; others are doing their work poorly; some, however, are doing very good work, and a few really need more help. Under our plan of reorganization, we estimate that a number of employes can be eliminated, particularly in the financial end of the work. With a central filing system and machine accounting, as recommended under the Department of Finance, it should take only a small number of skilled employes to handle the business of the state.

"Again, we want to emphasize the fact that the purpose of the reorganization plan is not so much to make large savings in the operating expenditures of the state government as it is to introduce business-like methods into the state administration, thereby insuring more and better service for the money actually expended."

# NEW GOVERNMENT PLAN SUBMITTED

## Clark Bill Provides for Immediate Reorganization of State Departments.

### MANY CHANGES PROPOSED

#### State Board of Control to Have Charge of Penal Institutions and of Three Hospitals a Feature.

A state reorganization plan, differing radically from the constitutional method of procedure sponsored by the administration and providing immediate consolidation of various state bureaus, is provided for in a bill presented in the House yesterday by Representative Clark of Grant county.

Carrying the emergency clause, which would make it in effect upon its passage, the bill would abolish 11 offices and boards, would create a state Board of Control and authorize the establishment of a state cabinet system of supervision.

Mr. Clark said that his bill would not only carry out many of the changes sought by other interests but would be immediately effective because the proposed changes would not conflict with the state constitution.

#### Bill Is Outlined.

The bill, would accomplish the following changes:

1. Transfer the duties of the bank commissioner to the office of secretary of state.
2. Transfer the duties of the "Blue Sky" department to the secretary of state.
3. Transfer the duties of the state comptroller's office to the state auditor's office.
4. Transfer duties of the insurance commissioner and fire marshal to the state auditor's office.
5. Transfer duties of commissioner of revenue to the state treasurer's office.
6. Transfer duties of the state Plant Board to the Department of Mines, Manufacturing and Agriculture.
7. Transfer duties of the state Apiary Board to the Department of Mines, Manufacturing and Agriculture.
8. Transfer duties of the commissioner of conservation and the state Board of Conservation, insofar as they pertain to feed and fertilizer, to the Department of Mines, Manufacture and Agriculture.
9. Transfer duties of the state Board of Conservation, so far as they pertain to the conservation of oil, gas and minerals, to the state Geologists' Department.
10. Abolish the office of state purchasing agent.
11. Transfer the duties of the honorary Aircraft Board to the office of the Railroad Commission.

#### Provides for Deputies.

In each case of transfer, the bill would authorize appointment of a qualified assistant or deputy to carry out the duties of the bureau or board abolished, with one exception. No additional help would be granted to the Agricultural Department for the work to be done for the Apiary Board.

The bill would create a state Board of Control, composed of the governor, secretary of state, auditor, treasurer and attorney general and would give this board entire supervision over the penal and correctional institutions. These institutions include the state penitentiary, penal farms, state Farm for Women, Boys' Industrial Schools and the Girls' Industrial School. This board would exercise supervision over the state Tuberculosis Sanatorium at Booneville, the Tuberculosis Sanatorium for Negroes (Alexander) and the state Hospital for Nervous Diseases.

The Board of Control would be empowered to appoint superintendents for each of these institutions.

Deputies and assistants appointed by department heads would be named for two years, but with their appointments subject to confirmation by both branches of the legislature. Such appointees would not be permitted to serve past the term of the state official by whom they were named. They would be made eligible to succeed themselves at the end of their appointed term.

#### Board to Buy and Sell.

Supervision of sale and purchase of all supplies or products of the institutions named in the foregoing, is left to the Board of Control. This section in effect would abolish the office and state purchasing agent and would put the sale of penal farm crops under supervision of the board of control.

The bill would not abolish the existing honorary boards but would have these boards function in an advisory capacity to the state Board of Control.

The state cabinet, under the bill, would consist of all elective constitutional state officers, with the governor as ex-officio chairman and the secretary of state, ex-officio secretary.

The bill would authorize the cabinet to meet at least once a month for a discussion of state affairs. The cabinet would be required to compile, 30 days before convening of the legislature, a biennial budget for all state departments for submission to the assembly.

It provides that as soon as practical after passage of the bill, heads of various departments under the consolidated plan, would meet with the governor to determine the number of employes and funds necessary capably to carry on the work as consolidated.

#### Limit on Expenses.

The bill provides that appropriations for this work should not be more than 75 per cent of the money appropriated by the 1929 assembly for performance of all the duties imposed by this act upon the affected department.

The measure provides that all money belonging to the state and all funds designed for the use of any state office, should be deposited with the state treasurer and should not be withdrawn except in the manner provided by law. The purpose of this section, the bill sets out, would stop the practice of keeping such monies on deposit in private accounts "to the end that the assets and liabilities of the state may be determinable at any given time, and also to the end that the state shall have supervision and control of its funds."



210

# Scientists Use Explosives To Map Buried Rocks

Gazette  
November 30, 1930.

The area around Little Rock is a sort of happy hunting ground for geologists and other scientists who are interested in what we might call the sub-lay of the land. And recently some very interesting experiments have been going on hereabouts.

These experiments have to do with what is known as the seismic method of mapping the subsurface of the earth. George C. Branner, state geologist, succeeded in convincing the Geophysical Exploration Company of Beaumont, Tex., one of the oldest and most competent seismic prospecting companies of the Gulf coast, that the Little Rock area has possibilities for such experiments.

As a result, a party of scientists was sent out by H. G. Taylor, vice president and general manager of the company, to conduct these experiments under the personal direction of Dr. L. Don Leet of

increased, since such deposits often occur along these lines or breakage or folding. Likewise, in prospecting for oil or gas, deeply buried ridges or faults often create deep-seated structural conditions favorable for the accumulation of oil or gas."

In order to find these buried rock structures, it used to be necessary to drill holes. But that method of mapping the subsurface is slow and expensive, and scientists recently have developed other methods.

One of these is the seismic method mentioned above, which, according to Mr. Branner, is rapid, relatively accurate and comparatively inexpensive. The seismic method entails the use of explosives, which create earth shocks.

"By virtue of the fact that these shocks are conducted through different kinds of rock at different speeds," Mr.

"If, then, it is desirable to test the actions of instruments for mapping the presence of a hard formation at a depth of 500 feet, it is only necessary to go along Highway No. 65 or 167 to a point approximately five miles southwest of Little Rock and set up instruments for testing at that point. If it is wished to increase the testing depth to 1,000 feet, it is only necessary to extend the distance about 10 miles along either of these highways from Little Rock. In this way the underground conditions can be controlled for almost any testing depth.

"The presence of buried syenite or 'granite' southwest of Little Rock also provides another field for exploration of this character. These facts combine to make the vicinity of Little Rock a fertile field for experimentation with the seismic method."

the time the vibrations in the ground reach the delicate recording instruments, it is possible to compute, to a high degree of accuracy, the velocity with which those vibrations traveled.

"It is a well-established scientific principle that the vibrations which first reach the instrument get there by following a path which allows them to arrive in the shortest time possible. The logic of this is obvious. If hard, high-speed rock is overlain by 1,000 feet of loose, low-speed dirt, and a shot is fired a couple of hundred feet from the instrument, the first vibrations to reach it will be those which traveled in the loose dirt, even though its speed is slow, rather than some of which went down 1,000 feet into the high-speed material and were reflected or refracted back. In the same manner, if two towns five miles apart are connected by a direct, but rough dirt road, and by a round-about road 100 miles in length, mostly rough, but with five miles of hard-surface, no driver would expect to save time by going 95 miles out of his way to avail himself of five miles of good road.

On the other hand, if the two towns were 100 miles apart, connected by one direct all-dirt rough road and one less direct with 10 miles of dirt and 100 of hard-surface, it is clear that time would be saved by traveling the longer route owing to the greater speed possible on the hard-surface highway. A parallel situation arises when the dynamite is exploded at a considerable distance from the instruments. The first wave to arrive follows the path which gets it there in the least time—going down to the hard high-speed rock, through it, and back out to the instrument. By so doing, it requires less time than if it confines its path to the slow-speed material.

"If, then, it is known when vibration should be expected if they traversed only loose low-speed material, and suddenly it is found that some have arrived ahead of schedule, it can be assumed that they have followed a higher-speed path and that hard rock has been encountered. By various formulae it is possible to compute the depth to that rock."

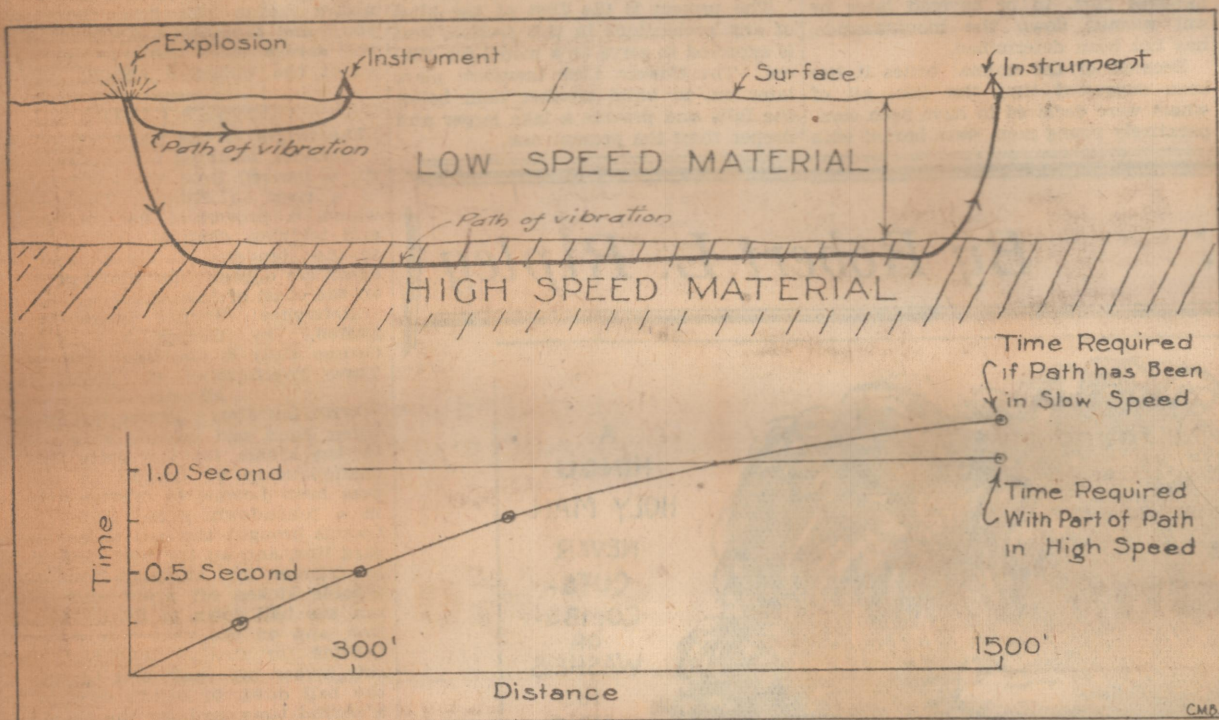
At this point, it might be a good idea to study the sketches accompanying this article. The first figure shows, in section, the paths of vibrations, respectively, to an instrument set near a blast and one located some distance away, assuming that a bed of rock, which will transmit vibrations at relatively high speed underlies the surface "low speed" material. The second figure is a graphical representation of the manner in which the presence of a "high speed" bed is detected by the indication of an increase in the velocity of the vibration.

Has the method proved practicable? It has. In the Gulf Coastal regions it has been widely applied to the location of salt domes, which are structures favorable for the accumulation of oil.

They are massive plugs or rock salt, Mr. Branner explained, through which vibrations travel at high speed. They have been pushed into the loose Gulf coast sediments like nails into a plank. When vibrations encounter a salt dome they are speeded up to a marked degree, and the presence of the dome is readily detected.

"Obviously," Mr. Branner pointed out, "the seismic method does not in any way indicate directly whether oil or other minerals are underground. No method has been shown capable of doing that. It simply determines the trends of subsurface structures and suggests places which should be favorable for the accumulation of minerals. That, however, it can do rapidly and accurately where conditions favor its application, and at a considerable saving in time and money over the laborious plugging down of countless holes."

Mr. Branner warned that in this, as in other cases where features mysterious to the layman are involved, quacks are bound to operate. Hence, he feels Arkansas has been "fortunate in attracting the interest of the reputable and skilled organization engaged in these experiments."



Drawn by C. M. Blacklock.

The above sketches show how subsurface rocks are discovered and mapped by the use of explosives and delicate recording instruments. (See text for detailed explanation.)

Harvard. The party has co-operated closely with the state Geological Survey. "Their work," said Mr. Branner, "may prove of major importance in the development of certain of the mineral resources of Arkansas."

The state geologist discussed the experiments at some length.

"It is often advantageous," he said, "to mining engineers and geologists who are searching for evidence of mineral deposits in the earth to have information concerning the structure of the rocks far below the earth's surface. In exploring the metallic minerals, if it is known, for instance, that there are lines of breakage or that the rock beds are folded at a depth of several hundred feet below the earth's surface, the chances for finding mineral deposits are often much

Branner explained, "it has been possible to work out methods by which scientists are able to map with considerable accuracy certain kinds of deeply buried formations."

The reason Little Rock is so well favored for testing the accuracy of the seismic methods is that experimental conditions can be controlled almost at will. Mr. Branner explained:

"Little Rock is on the edge of the Gulf Coastal Plain series of beds which are relatively soft and unconsolidated and which thicken at a quite fairly constant rate to the south and southeast. Underlying these beds is a series of hard consolidated rocks known as the Paleozoic rocks. The contact of these two series of beds provides a sharp break in the density and hardness of the rocks.

The basic principle on which the method operates, Mr. Branner assures us, is relatively simple. Perhaps we'd better let him explain it in his own words:

"It has long been known that vibrations of the nature of sound travel through ground and rock of different kinds with different speeds, just as an automobile traverses rutted dirt roads and smooth hard-surface highways with different speeds. In the loose, unconsolidated surface materials of the Gulf Coastal Plain, the vibrations set up by a dynamite blast travel relatively slowly. Underlying these, however, are hard rock formations in which the vibrations travel much more rapidly. By measuring, to a thousandth of a second, the time a dynamite charge explodes and