Three Oil Fields Developed.

The estimated value of Arkansas's mineral production for 1937 reached $22,650,924.35, the highest amount recorded since 1929. Dr. George C. Branner, state geologist, and C. B. Meador, state mining engineer, were both present to announce the figures at the Arkansas Geological Society meeting on April 16. The value of the production was broken down into several categories: oil and gas production, coal and coke, and other minerals. The oil and gas production was the highest, followed by coal and coke, and then other minerals.

New Oil Fields Most Important.

The most important development in the mineral industry in Arkansas during 1937, according to Dr. Branner, was the discovery of new oil fields, particularly in the southeastern part of the state. The new fields were discovered in-driven by the continued search for new sources of energy in the wake of the oil crisis.

Geological Survey Needs More Funds.

Late news from the state Geological Office gives the warning that enough funds have not been secured to enable the office to continue its work, which was announced recently under the title, "The Time to Support the Project." Mr. Branner, state geologist, "it must be the job of every resident of the state to spend more money than at first thought and the transportation problem must be solved by those who own large sections of land.

Cinnabar Mine Interests.

Increasing Clark County.

Special to the Gazette.

April 23—Encouraged by reports of the purchase by banks of large stocks of cutecutter and state-supervised land, speculators are making the possitk mine areas more active. In Clark and Pike counties are among the richest in the world, residents of Amity and Nicholls are taking advantage of the opportunity to purchase land in these areas.

Newest Tube Can Detect Earth's Age.

Democrat, Feb. 20.

Bloomfield, N. J. (A) -- The world's most sensitive vacuum tube, a new development that can read the vibrations of rocks and through them date the age of the earth, was announced today.

A delicate isotope was invented in the laboratories of the Westinghouse Electric Corporation. It has the precision of a medium-sized radio tube. This kind of work is used in radio and television transmitters.

The isotope is so small that its flow would need about fifteen million years to produce enough electrons to turn on a bulb, and several decades for the world. The smallest lamp is a radio tube, and it will be used in medicine.

"Under the reorganization authority, the president replied, "it is possible for careful study of the situation to determine whether our exploration figures are based on the information gathered by the existing agencies in their reports, or in a combined form, or under the co-ordination of the considerable information that is published for that purpose and that in the course of the program to be carried out. In our opinion, the extent and rate of the program should not be determined by its success, but by the amount of work that can be done in the area." Mr. Branner brought up the important question of the necessity for an agency to conduct such a program.

"The program is designed to bring about a uniform regime for the entire country." Dr. William B. Leach of the United States Geological Survey and former director of its Geological Survey Bureau, said in a statement to the agency to conduct such a program.

Bureau of Mines May Analyze Gas.

Gazette, April 28.

Probability that the United States Bureau of Mines may analyze crude oil and gas in Arkansas was indicated in a letter received by Mr. B. F. Finch, chief of the Bureau of Mines, from W. E. White, chief of the Bureau of Mines in New York, last week in which Mr. Finch expressed a desire to obtain a sample of the mineral for chemical analysis.

Shell Ground for Poultry Grills, Agricultural Lime.

Gazette, April 30.

Newport, June 17—Ground metal shell for poultry grills and agricultural lime was completed recently by the Jackson County Co-operative Bank, located at Alton, as an official of the bank, T. W. Rice, said, "The metal shell was used in poultry producing operations of north Arkansas, and the agricultural lime is being used in the neighboring county of Boone. We hope the metal shell will be of great use to the poultry dealers and agricultural lime will be of great use to the farmers of the county."

The local company "grinds" the metal shell with a battery of hammer mills.
Limestone Found at State Hospital

By RALPH HULL.

When a block of 3,200 acres of land was purchased a few years ago as site for the new Farm Colony Hospital at Arkansas State Hospital, the chief concern was the location of the hospital itself, far enough from the city to allow the patient the help necessary to get to the top of the mountain. The property was purchased from the Federal Land Bank and was sold to the state for $500,000.

The farm colony was then established, and the property itself might be the farm colony more properly described as a farm colony. The property was sold to the state for $500,000.

The property was Purchased from the Federal Land Bank and was sold to the state for $500,000.

Rich Vein of Antimony Found

De Queen, March 29—Antimony mining is commencing in the north of Cimarron county, located on the north side of the town of De Queen, 30 miles east of the town. The discovery was made by way of the De Queen and Southern line of way, near the town of De Queen.

A dozen segment of ore, weighing 80 to 300 pounds and containing 75 percent of antimony, was shipped to De Queen from the town of De Queen, 30 miles east of the town.

The liquid became more and more active, so that it would reduce carbon dioxide and render the bird too heavy to fly. The water is mixed with acid and phosphoric acid, and the acid is poured on the oil. The result is a white, crusty deposit of phosphoric acid.

The phosphoric acid is then added to the oil, and the mixture is in turn added to the water. The acid is mixed with a jet of water and the mixture is added to the oil. The oil is then allowed to stand for a few minutes, and the mixture is allowed to settle. The oil is then allowed to stand for a few minutes, and the mixture is allowed to settle. The oil is then allowed to stand for a few minutes, and the mixture is allowed to settle.

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Earth Tremor Causes Much Excitement

An earth tremor of deep intensity that lasted for about half a minute shook houses and other structures in all sections of Little Rock perceptibly shortly after 9:30 last night but apparently caused no damage.

The quake seemed to be centered east of Little Rock since numerous reports were received in Memphis and in eastern Arkansas towns and cities. Reports were received from various places.

Many Residents Disturbed.

The Gazette was awakened with calls from all sections of the city in the first hour after the shock. Most of them were from the eastern and southern sections of the city. Those who were upstairs in two-story houses said that the sense of insecurity was pronounced. Several reported that portions of the ceiling and walls, which they had been looking at, were cracking at the time of the shock moved perceptibly.

The sense of disorientation and lack of equilibrium which are commonly described as sensations occurring during earthquakes were uniformly described by those who reported the earthquake.

Dogs, cats and other pets sensed the shock and were disturbed over the unusual conditions, several persons reported.

Intense at St. Vincent’s infirmary reported that the tremor shook bottles on a table in the laboratory hospital. Attaches at City hospital said interns and nurses on the top floors of the building felt the shock and downstairs discovered the trouble. Persons in the basement felt nothing.

W. B. Smith, 1810 Bailey street, reported that the quake caused a large crack down the center of stone steps in front of his house.

Utilities Report No Damage.

The quake caused considerable disturbance among patients at all hospitals. Nurses did double duty answering calls from patients who wanted to know what the commotion was about.

Many Reports of Quake With No Damage at Memphis.

Memphis, Tenn., Sept. 16 (AP)—Reports of early tremors in the Memphis area swamped newspaper offices and radio stations here tonight. No damage was reported although many persons said mirrors and pictures shook on their hangings, and windows rattled. An engine set in concrete was reported to have been rocked loose from its foundation.

Quake Felt by Residents of Okmulgee, Okla.

Okmulgee, Okla., Sept. 16 (AP)—Residents of Okmulgee reported an earthquake, tremors were felt at 9:33 p.m. today. Several telephone operators reported that the tremor was strong enough to make the switchboards at their office shake. Other persons in the community reported the phenomenon. No damage was reported.

The priest said he returned from vacation a few days ago. The seismograph at St. John’s seminary here records one or two tremors each year in the New Madrid area, which he described as an area with the town of New Madrid, Mo., as its center, embracing sections of northeast Arkansas, southwest Kentucky, northwest Tennessee and southeast Missouri.

The seismograph at St. John’s seminary here records one or two tremors each year in the New Madrid area, but they are not felt in Little Rock, the Rev. Father Murray said. He described last night’s quake as a minor disturbance.
Prehistoric Bed of Oysters Lies Beneath Main Highway At Edge of Crowley's Ridge

A gigantic oyster bed millions of years old, literally a graveyard of antiquity that was a teeming mass of live bivalves as big as four inches across, has been lying quietly all these many years on Highway 70, at Crow creek, just east of Forrest City, where some 2,500 motorists daily pass unknowingly over the historic spot.

This place is on the very brink of what was once the Gulf of Mexico that in prehistoric times extended as far north as Cairo, Ill., and since the sea receded back in the time when man probably hadn't reached even the stone age, untold millions of fossil shells have been lying there, plainly visible from the concrete bridge that spans the creek.

The deposit has just been surveyed by the state-wide WPA project of the state geological survey, with Dr. George C. Brinton, state geologist, as director, and some interesting facts have been revealed.

In September, 1938, while on a tour of the South, Dr. Gilbert D. Harris and Mr. and Mrs. E. Lawrence Palmer, paleontologists from Cornell University, visited the area and estimated the deposit as being millions of years old. They took various specimens home with them for further study. (The science of paleontology has to do with the study of the remains of plant and animal life from past geological ages.)

Exposed for a mile or more at this particular point on Crow creek the oyster bed is a part of an immense deposit of fragmentary oyster shells laid down in a horizontal bed. The exposed banks of the stream disclose masses of shell firmly embedded in a bluish-gray clay in which listen to particles of mother-of-pearl. Stretches of sandy beach along the water's edge are strewn with broken pre-historic sea shells, some of which were of remarkable size. Whole oyster shells are occasionally found, measuring four inches across the hinge and 12 inches in length. From exposure to the atmosphere and elements most of the shells have become brittle and crumble at the touch or pull apart like wet paper. Oyster shells taken from the Atlantic coast today between Long Island Sound and Florida are very similar in appearance to these shells which contained living organisms millions of years ago.

The shell deposit at Crow creek has a thickness of five feet and extends from considerable distance back into the bank. A similar deposit was found at a depth of 130 feet in a well dug at Forrest City.

Where came oyster beds in eastern Arkansas?

There was a time, millions of years ago when a part of the Gulf of Mexico extended inland as far north as Cairo, Ill. That vast period lasted for millions of years indicated by the thickness of the clay which was deposited as sediment on the bottom of the sea.

Fresh water streams from the North flowed into this embayment, which covered all the land now known as the Gulf coastal plain in which are now included Florida, Mississippi, Louisiana, the southern half of Georgia and Alabama, eastern Arkansas and parts of Texas and Oklahoma. As the Gulf waters receded southward, the clay beds were exposed and became dry land, and the hardened sediment contained the remains of various forms of marine life.

The withdrawal of the sea occupied an immense period of time and the land drainage from the north extended slowly, as the sea withdrew. Eventually the drainage, principally the Mississippi and Ohio rivers, carved out the soft coastal plains and left Crowley's Ridge as an erosional remnant.

During the Glacial epoch either fresh water borne debris from the glaciers, or wind borne debris covered eastern Arkansas with the soil and gravel which caps Crowley's Ridge. All but the Ridge capping was removed by south flowing drainage.

Among the artifacts recovered from Indian mounds, villages and burial grounds in eastern Arkansas we have found many articles made of shell. Early archaeologists and historical writers assumed that these Indians had come from, or had visited the Gulf coast country, bringing the shells with them. But it is unlikely that they were taken from the region adjacent to the Crow creek fossil shell beds.
Young Texans Here on Aerial Photography Job
"Southwest-Times Record" Sebastian Co. 4-10-33

PICTURE MAKING FROM AIRPLANES IS SLOW PROGRESS

By Jim Montgomery

If anybody likes a pretty good job and gets only four days a month, he might try aerial photography. Not just going up and taking pictures from the cabin window, but waiting for everything to line up, from the height of 15,000 feet, "shooting" a lot of landscapes. That is what Edward L. Toler and Royal King (real name) have been doing for the University of Arkansas.

They're photographing whole scenes of the countryside, turning out on a scale of 3:1,700 to the mile. They have the latest equipment, too. He, the photographer, and King, the pilot, work together. The pilot watches his course just as carefully as the photographer, and if either makes a mistake, sometimes a whole trip is ruined. These two Texans, born in Texas, are making Fort Smith their base while "shooting" 17 counties from the air.

They are employed by Kairy Aerial Surveys, Ltd., of San Antonio. "Photogrammetry," says the Kairy officials style themselves, is the art of making maps and charts for the United States. They're working for the government, and when Toler was asked about the future use of his pictures, he replied, "I know what the company's business is, anyway, but I just don't know how much," he explained. Different departments have been using the work for mapping, and it's been pretty well "talked," nationally, that the pictures are going to play a big role in the new crop control program, and many other things, too.

Weather "Cramps" Style

Back to the "soft" job of Toler's. Photographers work an average of four days a month, the weather permitting. It is not a "picture-perfect" job as far as weather is concerned. The weather cramped their first trip. They had planned to do work for 13 days. But when the weather was perfect, they could only get in on one day. It was 11:45 a.m. at one time of the day, they didn't even know what they were doing, and no one interfered with an exposure.

The picture took a lot of time. It was made in Fort Smith three weeks, and have put in the rest of their time working on their job over Johnson county, and Jack two big rolls of film on Frisco county. The tolls haven't been down yet, but they have been tackled yet. (It's weather, not the tolls.)

A roll of their film is 33 feet long. The tolls can be printed in 36 inches, can be made on a 36-inch roll. A sheet 36 inches by 40 inches can be made on as many as 1,000 exposures (ten rolls each) can make, or 1,000 pictures. In getting Johnson county, they worked in a plane with a film capacity of 450 pictures, with Franklin.

Fairfield 71 is a Wright 450 horsepower motor. It's a ship, and it carries the things needed for pictures. It can carry only the pilot and one passenger. It is about 20 miles, for about 125 miles an hour, and carry for about two hours. No "speeds" are known. The miles per hour, that can travel, is about 75 miles per hour. The camera is a 3:1,700 to the mile. The plane is the camera, and it's a real long, and in front of King, who knows an exposure is going to be made. King can signal, too.

Picture Becomes Map

Once everything is ready, and stays out, a continuous series of exposures can be made, on an average of 2 to 20 seconds, sometimes at 30 seconds. Each object under photograph appears these times, a scene has a 60 percent overlap, as much as a 30 percent overlap on a side. This system, and instead of pasting the pictures, the object is made up to a map that can be made up to a map by putting the picture, and instead of pasting the pictures, and the map's number already, and the map's number made, the picture is made up to a map, and is a real long, and in front of King, who knows an exposure is going to be made. King can signal, too.

A toll of film is 77 feet long. The tolls can be printed in 36 inches, can be made on a 36-inch roll. A sheet 36 inches by 40 inches can be made on as many as 1,000 exposures (ten rolls each) can make, or 1,000 pictures. In getting Johnson county, they worked in a plane with a film capacity of 450 pictures, with Franklin.

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I took a mineral lease also on this and already two mining engineers for mining and development companies have been out and inspected it.

Calling this a fair day’s work a stayed all night at and Tom Waldens and next morning went up a little creek and found pieces of float jasper, yellow “Mexican” onyx and a small five-carat diamond on a chunk of beautiful blue agate or Chalcedony and within an hour located two of the ledges of these semi-precious stones containing literally tons of material aside from ornaments and souvenirs, and jewelry I think probably the jasper and Chalcedony might be used in the tombstone industry.

In a cave facing White river I found hundreds of stalactites and considerable varicolored onyx.

Another cave in a hillside disclosed a copper-head snake (which promptly departed this world) and tons of calcium and magnesium carbonate more than 90 per cent pure and useful in liming farmland.

I also have found some eight different colored clays, a low enough in alumina and iron oxide make good porcelainware, etc.

I have not mentioned the phosphaes, kaolin, silica, slates, shales, steatite etc. also abundant in this area and which I may discuss in a later article.

I have samples of the above minerals upon display in my room at the Basin Park hotel which citizens and tourists may inspect at any time.

JOHN JENNINGS.

MYSTERIOUS PACIFIC OCEAN CANYONS HOLD BEDS OF PHOSPHORUS

By HOWARD W. BLAKESLEE

La Jolla, Calif. July 2—Discovery of phosphorus in the Pacific ocean canyon 1,000 feet under water opens a big world for fortune hunters.

Finding of the phosphorus was described today at the Scripps Institution of Oceanography by Dr. F. F. Shepard, geologist of the University of Illinois. He dredged this fertilizer rock from the upper walls of a submarine canyon 50 miles off shore. The phosphate rock, he said, was determined by K. O. Emery, who is making a study of the rocks collected from the submarine canyon.

The canyon is one of scores discovered in ocean depths by geologists in the last two years. The canyons are in all oceans. Unlike most bottom seas they are not muddy. Their walls are rocky and the rocks are of all kinds, like those on land.

The reason to believe that these submerged walls contain all the varieties of minerals known. Some of the underwater canyons are as huge as the Grand canyon of the Colorado river.

The phosphate rock canyon is V-shaped. Its bottom lies half a mile under water. Its sides are from 1,200 to 2,000 feet high. Dr. Shepard's dredge took the phosphate rock samples from a stretch 20 miles long, indicating that the deposit is probably extensive and rich.

The phosphate was identified as of Miocene age. That period ended about 17 million years ago. It is possible, Dr. Shepard said, that phosphate may be forming now in the submarine canyon. From this same area where the phosphate was found Dr. Shepard brought up fossil bones of an unidentified animal.

Origin Not Known.

The geological prospecting seeks to learn the origin of these great chains in rock bottoms.

Their walls range from granite to soft shale. Some of the rocks are volcanic, most are sedimentary, which means they were formed by the weight of huge deposits of earth which lay above them at some period in the past.

The walls are as steep as those of land canyons. The slopes vary from a few degrees to almost vertical. The mystery of their formation is not their only puzzle. Why they do not fill with mud is another.

Erosion Suggested.

Rogenous by flowing mists. Dr. Shepard said, has been suggested as a cause of the submarine canyons, but does not appear to be sufficient explanation. Rise and fall of land fails to explain them, because they are uniformly scattered under all oceans and uniformly young formations. There has not been time for rise and fall of land over such wide areas.

Great glaciers of the past, by locking up water in land ice, may have lowered sea level enough to put these areas above water where rivers could cut canyons. There is dispute about how much the ocean might have lowered.

But Dr. Shepard pointed out that if Antarctica's present glaciers should melt, sea level would be raised 150 to 300 feet. Only New York city's skyscrapers would show their tops.
State to Get Mineral ‘Lab’

WPA Provides Funds to Complete Survey of Arkansas.

A new laboratory for testing and analyzing state minerals, sponsored by the Arkansas Geological Survey and constructed by the WPA, will be built at the old hospital in this city. It was announced yesterday by J. C. C. Bucholz, supervisor of the WPA state mineral survey.

By George C. Evans, state geologist, said the building will be a one-story, 44 by 41 feet, and that bricks from the old walls would be used in its construction. Work on the project is expected to begin immediately, since it has been approved in Washington.

He said the laboratory will provide facilities adequate for testing and analyzing the thousands of samples of minerals collected in 37 counties during the survey. About 700 people are employed in the survey.

The object of the survey is to locate, map, estimate, sample and describe each section of land to determine the surface indications of minerals. In many places, bore holes are made to determine the depth and extent of deposits which do not appear on the surface. Subsurface cross-sections are being made of some of the districts where clay is the chief natural resource.

Maps are made of each township covered by the survey and are used to develop and improve the area showing promise.

Plans are now in progress which will make it possible within a few days for any county to test the hardness and chlorides of water wells and springs. This information will be compiled in bulletin form and maps will be made showing the results of the survey.

For any further information concerning the work and progress of the state mineral survey, see Louis M. Hamun, county supervisor of Hot Spring county, with office in the county judge’s quarters at the court house.

Hot Spring county’s crew of surveyors doing this work are now working in township 5 south, range 18 west.

Project To Construct Laboratory Is Approved

Information was received October 11 from Washington stating that a project for the construction of a laboratory to test and analyze state minerals has been approved by the President. The project is sponsored by the Arkansas Geological Survey.

The building will furnish the geological survey with a much needed laboratory to analyze the samples now collected, mapped, and classified by the state mineral survey. Several thousand samples from sections of the state are now on hand to be tested or analyzed.

The state mineral survey is now active in 37 counties covering 37,000 square miles, and employing about 700 people. The object of the survey is to locate, map, estimate, sample, and describe each section of land to determine the surface indications of minerals. In many places, bore holes are made to determine the depth and extent of deposits which do not appear on the surface. Subsurface cross-sections are being made of some of the districts where clay is the chief natural resource.

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Mining Of Mercury On Increase

New in the Gazette 36-24-58

Murfreesboro, Oct. 22. -- There is more activity in the mercury belt in Pike and Clark counties than has been shown since the discovery of the mineral eight years ago. All new mining fields it has had its ups and downs. Engineers point out that lack of capital and experience in mining this type of ore has been the chief reason for the slow development of this district. It is believed that if properly mined the field would be one of the leading producers of quicksilver in the United States.

Says “Bright Future.”

W. E. Thompson, an engineer of international experience and a member of the world’s largest mining institute, said that in his opinion the district has a bright future. The Big Six Mining Co., composed of a group of men from Mima, Oklahoma, is working one and one half miles south of the Little Missouri river, while the Magnolia Mining Company, a new Arkansas corporation, also is working two shifts and producing high grade ore. This company is trucking its ore nine miles to a plant belonging to the Mid-Continent Quicksilver Company which is in process, but plans are nearing completion by the Magnolia company for the erection of a large induction plant on its property.

New Discovery Reported.

The Holmes Mining Company recently made a new discovery of high grade ore. Samples brought from Murfreesboro are said to average one ton. The Mid-Continental company has resumed operations under improved management, Mr. & Mrs. Thomas of Hutchins, Kansas, operating its own properties as well as processing ore for other companies.

J. J. Pal and associates of Murfreesboro have just finished prospecting a large area in the east part of Clark county. A mass sample of 447 tons of ore processed showed an average of 74.2 percent quicksilver to the ton. Plans are under way to install a 50-ton processing plant.

The companies are receiving an average of 40 a pound for the mercury which is the average price for the past 10 years. The United States produces less than one-third of its supply, having imported 10,000 flask last July.

State’s Coal Production In Decrease

Gazette 10-27-58

A slump in mining activities in Sebastian county caused coal production in Arkansas to drop to 1,205,630 tons during the year ending June 30, 1938, compared with 1,480,059 tons during the preceding year. State Mine Inspector J. W. Fitzgerald of Fort Smith said in his annual report submitted to Governor Bailey yesterday.

Normal annual production for Sebastian county, which ranks first in coal production in the state, is about 1,000,000 tons, whereas production for the year ending June 30 was only 521,664 tons. Twenty-one mines in the county employed 1,604 men.

The coal mining industry in Arkansas gave employment to 4,844 men during the year, the mines operating an average of 121 days. Eighty-three mines were listed as active producers, but, Mr. Fitzgerald said, only 56 made reports, the others being small and operating principally for local trade during winter months.

Nine miners lost their lives in mine accidents during the year covered by the report. During the previous 12-month period, 13 miners lost their lives.

Production By Counties.

Leading coal producing counties, their tonnage for the year and the number of persons employed in coal mining included:

Sebastian—512,664 tons; 1,604 men.
Logan—413,446 tons; 1,526 men.
Johnson—181,114 tons; 968 men.
Franklin—140,879 tons; 583 men.
Pope—60,816 tons; 170 men.

Mr. Fitzgerald attributes rapid development of the Wheelerfield field in Sebastian county and the Paris field in Logan county to the strong market for Arkansas semi-anthracite coal.

He said several thousand acres of coal land in Scott county had gone undeveloped because of the excessive cost of mining in that area due to natural physical conditions.
Marvels Of Magnet Cove

Wide Variety of Minerals Is Found in Unique and Limited Area in Hot Spring County Which Has Been Visited by Many Scientists and Investigators.

By Mary Dengler Hudgins.

Magnet Cove in Hot Spring county is appropriately named. It is a magnet which has drawn man's attention through nobody knows how many centuries. There is every evidence of the fact that the Indians knew "the Cove" and its natural wonders hundreds of years before the coming of the white man. Even in the early part of the Nineteenth century geologists found their attention turning toward Magnet Cove in Arkansas Territory. Reports made by these men led investors to try out commercial possibilities held in the bewilderingly wide variety of ores and gems to be found in the area. Collectors from all over the world have sought specimens of Magnet Cove minerals.

State Senator Joe W. Kinsey, who lives at Magnet Cove, says that one of the best and most elaborate collections to be assembled there was prepared in 1884 and shipped to Germany about the year 1900 by Dr. Otto Koonce. It is believed to be in a Berlin museum. It has been said that there is scarcely a collection of minerals in the United States which attempts completeness that does not boast a few Magnet Cove specimens.

Books and pamphlets have described the region and its wonders for better than a century. Scientific brochures are released on Magnet as a whole and on certain of its products in particular with surprising frequency. G. W. Featherstonhaugh, Englishman, who visited Arkansas in 1834, was the first geologist to report on the district. The book he wrote about his trip, "Journey Through the Slave States," was published in London in 1834. The picture of Hot Springs reproduced with the Frederic J. Haskin page in the Gazette Magazine of May 29 was taken from the Featherstonhaugh volume.

Quite a number of details about the Cove are given in the book. The geologist was amazed and delighted with what he saw, both in quality and quantity of minerals. Since his time expert after expert has given serious attention to the phenomenon of Magnet Cove. A current pictorial map, "Historic Map of Arkansas," sold on behalf of the building fund of the 4-H Club girls' dormitory to be erected at the University of Arkansas and sponsored by the Arkansas Council of Home Demonstration Clubs, gives Magnet Cove a place of prominence. A pamphlet released by the Arkansas Highway Department describes the spot as a "Point of Interest" for tourist travel. The Encyclopedia Britannica neglects to mention the Arkansas diamond mines at Murfreesboro, but gives Magnet Cove due attention.

The old "Diamond Jo" stopping to "wood up" at Magnet Cove in the early days.

Many persons probably have passed through Magnet on United States Highway 270, 12 miles east of Hot Springs, without realizing they were encountering anything unique. This oldfashioned bow when mapped looks a bit like a giant oyster on the half shell. The whole district covers scarcely 6.1 miles—a space about 15,000 by 10,000 feet, at its greatest length and width. Yet within that space may be found more than 50 different minerals. There is every reason to believe that not nearly all of the varieties have yet been isolated.

One of the many lists of "Gems and Semi-Precious Stones of Arkansas," distributed by the Geology Department (Miss Lucy Crooks is librarian for the extensive collection of books and brochures) may be found in the Cove. Old-timers tell of finding garnets and opals lying on the surface. So many specimen hunters have traversed the hills that the large and small cobblestones have long since been uncovered today. But pyrites may still be seen gleaming along the shoulder of the highway between Malvern and Hot Springs. Up to the time of the hard-surfacing of United States Highway 270, fragments of magnet could be picked up in the middle of the road, especially in the stretch fronting on the Magnet Cove Consolidated School grounds.

Magnet is a strange district. Topping the hill just beyond the Remmel dam cut-off, the motorist dips down into the natural bowl of the Cove. Unless he is quite observant he will fail to notice anything unusual in his surroundings. Perhaps he will notice that trees tend to be all hardwood, instead of a blending of pine and oak. Maybe he will note outcroppings of strange rocks, some of them gleaming with flashes of purple and red and green. If he knows tufa, he can find at 50-foot hill of it, the very elevation in the bowl. But unless he is interested in geology and steps out of his car to walk, accompanied by a guide or a well planned itinerary (one is issued by the Geology Department) he is unlikely to find out about the natural wonders surrounding him. There is the story—to be read plainly—but one must know minerals to be able to read it correctly.

It is said that for its size, Magnet Cove has the largest variety of minerals of any spot in the world. It is also asserted that it is the bed of an extinct hot spring. But whether that completely accounts for the fact that such an accumulation of minerals was jiggled into five miles of nature's handiwork, nobody can say.

Perhaps that is why few things have been done about it commercially. Now and then, however, someone discovers new possibilities. On June 8 this year the Arkansas Gazette carried a long story concerning the discovery of taeniolite, an extremely rare lithium mica (used chiefly in ceramics and enamels). The deposit came to light while Lawton D. Kimsey was searching for titanium, the product which has been most widely commercialized in the Cove. No one can say as yet what the results will be, but the findings of Dr. Braner and the United States Geological Survey have caused the Ceramic Engineering Department of the University of Illinois to investigate possibilities of the Cove product.

However, it didn't take modern laboratories to prove the importance of the Cove. "That ancient Americans engaged in mining," says one clipping, "is evidenced by the old novaculite quarries found on Indian mountain, three miles from Hot Springs, and in Magnet Cove. These mines were worked hundreds of years ago in search for the proper kind of stone fitted for shaping into cutting and piercing implements. Weapons were in demand and chert in several forms, including novaculite, jasper, agate and flint and some varieties of quartz with brittle eruptive rocks, were found."

Richard Buhls, who has been connected with both the one-time Arkansas Permanent Exhibit at Hot Springs and the Arkansas Museum (now stored) in Little Rock, says: "From all indications, the American Indians were very much interested in Magnet Cove—there being a prehistoric Indian village site near Lodestone Hill. Archaeologists also have found many artifacts made from the rocks and minerals of Magnet Cove in numerous localities of Arkansas, Louisiana and Missouri."

G. W. Featherstonhaugh, the first trained geologist in the area, visited Little Rock in 1834 and then made his way to Hot Springs by way of Magnet Cove, where he made extensive study of the formations. Of the human side of his trip, he said: "Colonel Conway, the surveyor general of Arkansas Territory, was at this time building a cottage for his family—and has been kind enough to give me a letter of introduction to his lady, desiring her to receive us hospitably for the night if we found it convenient to stay there. The cottage was in a secluded place called Magnet Cove."

"Mrs. Conway received us very politely and though unprepared for visitors, as she was with carpenters and labourers to provide for the cottage. We had some supper got for us. Seeing that we were very much in the way, we retired to rest in a room which was not enclosed and still open to the weather on the side the chimney was afterwards to be built."

"Colonel Conway informed me that on surveying the country the needle would not traverse on approaching this locality and the cause was here apparent from a mound in the Cove covered with pebbles of magnetic oxide from one ounce to four pounds in weight. Some of the specimens which I brought away, especially one which contained a portion of a large crystal of iron, possessed of an intensity of magnetic power which is truly surprising."

Featherstonhaugh, highly impressed by what he saw at the surface, predicted phenomenal possibilities in the commercialization of the magnetic ore. Later developments proved that the outcroppings are more concentrated than the deep-lying deposits. One of the largest specimens of lodestone was dug up by a steam shovel in excavating for the Hot Springs-Malvern highway. Buhls estimates its weight at 100 pounds. Mrs. Bernie Babcock, head of the Arkansas Museum formerly housed in the City Hall, Little Rock, refused to estimate its poundage, but said it was 12 to 15 inches in diameter and too heavy for her to lift.
Through the years which followed Featherstonhaugh's visit, the community of Magnet Cove grew in reputation. In 1851 the posthumous report of J. Francis Williams on the igneous rocks of Arkansas was published. This volume contained three chapters on Magnet Cove, which constitute a classic in petrographic and mineralogic literature. Further contributions to the petrogenesis were made by H. S. Washington, H. Whitney and K. K. Landes in 1853.

Men and women have traveled far and near to study Magnet Cove's wonders. Senator Kinney, who has perhaps the best private collection of Cove minerals in the state, wrote: "I have had the pleasure of being associated with many of the world's best authorities who have come here from time to time to visit and study minerals, and since my father's death in 1856 I have helped many eminent scientists complete collections from this section. My father did a good deal of such work for Drs, Jenny, Foote, Nevin and others, as well as Dr. John C. Branner."

In fact for many years the news that a famous scientist was to visit central Arkansas caused many to jump to the conclusion that Magnet Cove was the destination. Once it was rumored that Madame Curie was coming to Arkansas to investigate the possibilities of radium.

Titanium is a Titan among metals and it has proved so in the Magnet Cove area. The power of its inertia for many years kept it from being commercialized to any extent. It still remains most useful in pigments for paints; but it is also used in arc lamp electrodes, ferrotitanium and smoke screens, continually increasing in importance.

In 1890 Williams mentions rutile and brookite (both varieties of titanium) as occurring in the area. In the late 19th century, H. E. Perkins attempted rutile extraction. He dug a shaft 81 feet deep with drifts west 100 feet and east 125 feet. Ore was reported to run high. Today the shaft has caved. Samples of ore still are lying on the old dump. This project was begun about 1912.

In 1921 Senator Kinney accused the interest of H. H. Horsley's bright. The Titan Corporation of America was formed. Shipping began in May, 1922. Since that time work has gone steadily along. The plant is small. The extraction is very simple, compared to the elaboration of some processes. But it is highly effective.

Radio is presumed to be affected by the magnetic deposits of the Cove. It has been frequently asserted that radio reception is poor throughout the district. However, many motorists assert that their auto radios are not disturbed by passage through the bowl. Programs continue to come through undisturbed, they report. Stephen A. Claxton, general manager of Hot Springs, says he has driven all over the Cove for the purpose of determining loss of reception and has found no spot materially affected.

Cove residents love their black marble and believe in it. The Kinney family has been untrong in its efforts to bring Magnet Cove into its own. A recent letter to the Gazette from F. F. Lappin proves that he, too, is alive to its possibilities.

It seems rather odd, with wonders of the Cove known to all that some of the wealthy men who have visited Hot Springs for many years have not taken advantage of its promises. When "Diamond Jo" Reynolds, millionaire grain

**NEW USES DEVELOPED FOR ARKANSAS BLACK MARBLE BY PRODUCTS**

10-30-39

Magnet Cove, Oct. 25.—What is believed to be the finest deposit of black marble in the United States is now being quarried by the Bateville Black Marble Company of Bateville, Arkansas. Approximately 5 feet thick, lying in a blanket formation, with nine distinct veins varying from eight to 28 inches in strike, is split by another thin layer of black marble from 1 to 4 inches thick.

The Bateville concern is said to be the only one in the United States now manufacturing terrazzo from domestic black marble, although a few concerns in France are making it from Belgium black marble chips.

In addition to the production of terrazo, the company produces black marble flour as a by-product which is being used extensively as an ingredient in the manufacture of several grades of paint. A small experimental laboratory is now being operated by the company to develop new uses for black marble flour.

**New Products in Development Stage**

Several products are available, including a fireproof paint for application to wood, a plaster that dries to a marble like finish in plain and variegated colors, razor handles and abrasive wheels.

Fresh demand is being met for these products, the Bateville company has increased the daily capacity from 60 to 60 tons. The principal addition to the plant is a new Raymond hammer mill for secondary crushing, and a rod mill, one of which reduces to a flour dust all of the limestone smaller than 12 mesh. crayfish, which carries a silica content of 25 per cent, is a new product for this company.

Domestic black marble terrazo is made in four standard sizes: No. 3-16 inch, No. 1, 4-1 inch, No. 2, 3-1 six and No. 3, 7-1 six inches.

While the manufacture of black marble terrazo from domestic stone presents no difficult technical problems, it has to be handled in a careful manner to insure a clear uniform product. Most of the product manufactured to date by the Bateville company has been from small bodies and underized and broken pieces coming from the quarry. A new machine is installed which reduces the material to egg size and is proving satisfactory.

**Terrazo Production Method**

The first step in the stone passing through the cleaning operation. All of the heavier dirt and clay is scraped off, and then it is thoroughly washed with a hose.

When the stone is dry, it is passed through a 14-inch jaw crusher which reduces the material to egg size and is then conveyed by belt conveyor to the hammermill, where it is further reduced in size. From this mill it is carried to a 14-foot rotary screen, four with four-foot sections of different mesh, each section containing with one of the four standard terrazo sizes manufactured. All of the oversize is passed back through the hammer mill and screens and the fines, 12 mesh, are blown into the rod mill and reduced to dust. The four mesh screens at terrazo go through chutes by gravity to their respective bins.

At the bins the terrazo is sacked in 100-pound burlap bags and is ready for shipment.

Terrazo floors are used principally in corridors, courts, recreation and office buildings. The terrazo is imbedded in Portland cement mortar, and in New York it is hosed down before and polished. It is laid by men skilled in the process. Not every tile-sitter has the ability to lay it.

Architects' specifications for terrazo floors usually accompany specifications for interior marble and tile, and the marble and tile contractor usually bids for the entire job.

Most products of finished marble carry a stock of terrazo chips in stock in various colors. A large tonnage of marble chips is made abroad from foreign marble, and is shipped into the United States as crushed stone in casks. Other chips are manufactured in this country from waste and cull pieces of imported marble. The terrazo is used in the construction of high grade floors because of its wear and its excellent characteristics with lighter colored marble warranting and trims.

**Foreign Competition Serious**

At the present time producers of Arkansas black marble terrazo have to contend with serious foreign competition. Belgian black marble producers ship black marble blocks and terrazo into the United States as ship ballast.

While the market for terrazo is not so great, it is a developing market as foreign competition is not as great. The terrazo made from this marble does not polish as well as a black terrazo from a black block, which detracts from its appearance, but this market is developing.

Arkansas producers of black marble terrazo have held the price f. o. b. their plant at about $1 a ton. The difference in price between the Belgian black and the Arkansas product is a measure of the distance, in terms of freight rates, to which Arkansas producers can ship their product at a profit. The large potential market for the latter, in the United States, lies between the Appalachian and the Rocky mountains. A lot of their product is going into this territory now, and some shipments have been made to New York and other distant states. The Belgian black marble concern, however, are keen competitors, and it is to be expected that they will not surrender their former practical monopoly of the business to Arkansas producers without resistance.

There has been plenty of grief in the development of the black marble industry in north Arkansas, and only the strongest hearted have held on. George Terry of Bateville, who owns the Bateville Black Marble Company, might be termed the pioneer, at least in the early days of development. He opened up the only commercial quarries that have lasted, and developed the terrazo business.

While the occurrence of black marble in north Arkansas has been heralded as a new discovery, it was well known to the early settlers in the region as far back as 1859. The principal reason for the lack of development in the early days was road's bad roads. From the vicinity of Outhrough, near Bateville, in Independence county. In 1879 a wagon load of black marble was quarried on a ridge three miles southwest of Outhrough and shipped by water to Louisville, Ky., for finishing. This was the first recorded shipment of this marble from the district. About 1890, three wagon loads of black marble were quarried two miles northeast of Leslie in Searcy county. This was hauled over the hills and shipped by rail to Kansas City, Mo., for cutting saw. From the occurrence of this freestone constitutes the early day operations of the field.

The deposits lay inland from the railroad and it was practically impossible to get them to the railroad. Road improvement began in 1925, and as a result of this improvement and a heavier demand for dark-colored stone, interest was revived in the development of the black marble deposits, particularly in the vicinity of Bateville, in Independence county.

**Early Difficulties Overcome**

 Latter day prospectors for black marble quarries found plenty of hard nuts to crack in their search. Some thought they had found fine, commercial deposits, but when the stone was cut and polished it showed fine, white ash colored stone. Others found the marble in boulder formation, with the boulders too small for commercial blocks. Many prospectors abandoned their efforts due to lack of adequate financing. Now, however, they can find deposits that could be worked profitably.

M. Terry is one of those who persisted in the work. He studied every formation of marble deposits, and finally determined those conditions under which commercial black marble occurred.

To be certain that the Arkansas black would compete with the Belgian product, comparative tests were made between a 14-inch jaw crusher that indicated the physical character of both stones, as well as their appearance were approximately the same.
Laboratory For Mineral Tests Okayed For Ark.

Information was received Oct. 11th from Washington stating that a project for the construction of a laboratory to test and analyze state minerals has been approved by the President. The project is sponsored by the Arkansas Geological Survey. The new building will furnish space for the work of the State Mineral Survey. Several thousand samples from sections of the state are now on hand to be tested or analyzed. The State Mineral Survey is now active in thirty-seven counties covering 37,000 square miles, and employing about 700 people.

The object of the survey is to locate, map, and describe each section of land to determine the surface indications of minerals. In many places, bore holes are made to determine the depth and extent of deposits which do not appear on the surface. Subsurface cross-sections are being made of some of these areas where clay is the chief natural resource.

Maps are made of each township covered showing the cultural development which with mineral and water maps, gives detailed information for future development and of any area showing promise.

Plans are now in progress which will make it possible within a few years for the various counties to test the hardness of clay and other soils and clays. This information will be compiled in bulletins and maps for use in showing the results of the survey.

WPA CONDUCTING STATEWIDE MINERAL SURVEY

The Works Progress Administration is conducting a survey of discovered minerals in the State. This project is sponsored by the Arkansas Geological Survey of which George C. Branner, State Geologist, is the director.

Arkansas is rich in minerals as yet undeveloped which should be turned to an asset in this period of growing demand for metal machinery, mineral fuel and the minerals used in many types of construction. The work of the survey now going on includes locating, mapping, and estimating all mineral resources of the State. In counties where the work is in progress a County Supervisor has a group of WPA men under him who cover the entire county, recording on field sheets exactly what they find as they work over the sections. They are looking for outcropping minerals, both, metallic and non-metallic, and other geological features which have not yet been fully investigated. What is found and sent to the State Offices for classification.

Another feature of this work is that of listing all improvements in a given county and including bridges, highways, county roads, railway facilities, dams, streams, power and gas lines. All data sent to the State Office by these field workers is compiled by counties and the information preserved for the benefit of those interested.

Staff of New WPA Setup Announced

Appointment of administrative personnel of the new six area setup by the WPA to replace the 12 present area supervisors was made by the new State Mineral Survey, yesterday. The office of field supervisor was abolished and the three supervisors, T. J. Coddington, J. H. Dodd and A. D. Snodgrass, were assigned to the new district of area supervisors.

Except for Frank Kirk, all new supervisors are with the organization now. Kirk resigned as district engineer for the state Highway Department at Fort Smith recently and will take charge of the Pine Bluff office Monday. He was the former county administrative assistant. The new setup is for the benefit of the state administrator. The office of field supervisor was abolished and the three supervisors, T. J. Coddington, J. H. Dodd, and J. H. Snodgrass, were assigned to the new district of area supervisors.

New Uses For Aluminum Predicted

New York, Nov. 10 (AP) — A "very bright" future for the aluminum industry during the next 50 years was predicted by Arthur Vining Davis, chairman of the Board of Directors of the Aluminum Company of America, here tonight.

Davis spoke to leaders in aviation, transportation, and metal fields, advising his listeners "not to be discouraged by the darkness which comes just before the dawn."

"Some way or other out of this welter of war and unemployment and political theorism will eventually rise the sun of intelligence and tolerance."

He prophesied vast extended uses of aluminum, which he characterized as still in the growing period.

"If venture to predict that the dirtige is going to come into its own, but whether it does or not, transportation in the air is bound to assume tremendous proportions, and so far as anyone can see the transportation is going to be dependent to a large extent upon aluminum."

Of the difficulties of the early days, Davis said once the pioneer company had produced aluminum, it was forced into many lines of fabrication in order to provide an outlet for the metal for existing fabricators could not be persuaded to try new uses.

Another speaker was George S. Clapp of Edgeworth, Pa., one of the original backers, who told how he and friends scraped together $20,000 in 1886 to build a pilot plant for testing the electrolytic process, which has since reduced the price of virgin aluminum from $4 a pound to 20 cents.

Laboratory Planned To Test Arkansas Minerals

Information was received Oct. 11 from Washington stating that a project for the construction of a laboratory to test and analyze state minerals has been approved by the President. The project is sponsored by the Arkansas geological survey. The new building will furnish space for the work of the State Mineral Survey with a much needed laboratory to analyze the samples now collected, mapped, and classified by the State Mineral Survey. Several thousand samples from sections of the state are now on hand to be tested or analyzed. The State Mineral Survey is now active in thirty-seven counties covering 37,000 square miles, and employing about 700 people.

The object of the survey is to locate, map, and describe each section of land to determine the surface indications of minerals. In many places, bore holes are made to determine the depth and extent of deposits which do not appear on the surface. Subsurface cross-sections are being made of some of these areas where clay is the chief natural resource.

Maps are made of each township covered showing the cultural development which with mineral and water maps, gives detailed information for future development and of any area showing promise.

Plans are now in progress which will make it possible within a few years for the various counties to test the hardness of clay and other soils and clays. This information will be compiled in bulletins and maps for use in showing the results of the survey.
Clay Testing Laboratory Will Be Established

The Arkansas Geological Survey has secured services of T. B. McCutcheon, a ceramic engineer in charge of the state's clay testing laboratory at Little Rock. He will direct formulation of testing procedures for Arkansas's minerals. Dr. George C. Brewer, state geologist, said on his return from Missouri yesterday. McCutcheon will join the laboratory here, Dr. Brewer said.

Minerals Top

Best Figures In Four Years

Prospect of Additional Development Is Seen For 1939.

Arkansas's mineral production in 1938 valued at $29,000,000. The value of all minerals produced in 1939 is encouraging due to reopening of properties like mine workings, manganese, and copper-producing areas.

The annual report of state Geologist George C. Brewer read that the largest single source of mineral wealth was in the area of copper and manganese. With the reopening of mines and new discoveries, the state is expected to see a rise in production values.

The report noted that the state's mineral production has increased significantly in recent years, with copper and manganese being the most valuable.

Value of Minerals Produced

The estimated value of minerals produced and consumed in the state in 1939 was reported as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Value Produced</th>
</tr>
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<tbody>
<tr>
<td>1938</td>
<td>$29,000,000</td>
</tr>
<tr>
<td>1939</td>
<td>$32,000,000</td>
</tr>
</tbody>
</table>

The increase in production is attributed to the reopening of old mines and the discovery of new deposits.

Another concern—the Montgomery Copper Company—is pushing work for construction of a mine 16 miles southwest of Norman. Montgomery has the largest copper mine in the state, and the company is expected to play a significant role in the state's mineral industry.

The state's copper production is expected to rise significantly in the coming years, with the company planning to increase its output.

Arkansas Enters

Confidence in Trade Turnup Is Reflected

From September Payrolls Have Been Climbing To New High Marks.

Near 1937 Level

Only 10 States Register Greater Gains During September.

Enterling 1939, its industries are showing a marked improvement over the year and Arkansas finished the year under the same economic conditions as the middle of 1938. The recent upturn in business has had a considerable effect on the state's economy.

Payrolls recovered in September from their low point in December under the double stimuli of the end of the year and the usual fall upturn in business conditions. Payrolls are expected to continue to rise as the state's economy improves.

Private employment in Arkansas rose from an average of 1,173,000 in January to 1,186,000 in September. The state's economy is expected to continue to improve as the year progresses.

The state's economic conditions are expected to continue to improve as the state's industries recover from the depression of the past few years.

And among the new industries are expected to be the rise in the state's industrial output. The state's economy is expected to continue to improve as the state's industries recover from the depression of the past few years.

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### MUSINGS OF A MOVIE TRAVELogue DIRECTOR ON STATE'S INDUSTRY

By TOM SHIRAK

Nelisville, Nov. 12.—After spending a day making a movie shot of recrea
tional possibilities in the White river country, Randall M. White, who is the Arkansas travel
guide that will be shown at the New York World's Fair, had just one word com
tent for the development that was "advertising." He was accom
dpanied by Walter Wool, cameraman, and Erwin Oiler, sound engineer.

The first day was at the Batelle Marble Quarry Company quarry and plant near here. Looking over the prop
erty and mapping out his shots, taking note of the number of men at work, he said: "I think it is a good sign that so many people are employed on this project. They should be over 100 more by Friday," he said, "That's the answer."

Amazed at Potentialities

Mr. White, who is an Easterner, was amazed at the industrial and recrea
tional possibilities in the White river country presented by profession he is an ad
'

### ICKES PROPOSES

### STRICT CONTROL OVER RESOURCES

Recommends Survey of Minerals.

Washington, Dec. 18 (AP) — Secretary Ickes recommended legislation today which he said would open the way for the government to check overproduction and waste of mineral resources vital to the national defense.

In his annual report to the president, the interior secretary said the Bureau of Mines reported to him that a factor contributing to the waste of mineral resources was "unrestricted production which results in stockpiles that frequently deteriorate before they are used."

A way would be opened to enable the government to check this overproduction, Ickes told the president, "if we could determine the nation's requirem

### CLAY MAKING AMONG LEADING INDUSTRIES

Arkansas, rich in clays and with ample stores of fuel, is in a strong position to develop the manufacture of building clays and products in any scale, in the opinion of Dr. George C. Moore of the Arkansas School of Mines. At many points in the state, he said, clay deposits, gas and railroad transportation facilities and the three basic neces
dities for manufacturing brick, tile and fire clay are all found to

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The state's clay industries, number

### CRACKING THE CODE OF MINERAL OUTPUT

Using the principle of its recrea
tional possibilities, North Arkansas has plenty of competition, the principal
competitors in this business are the Lake of the Ozarks, Cow

### WESTERN NORTHWEST MINERAL PRODUCTION

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tional possibilities, North Arkansas has plenty of competition, the principal

competitors in this business are the Lake of the Ozarks, Cow
Greater Little Rock's 1938 Upswing Goes Forward With Plans for Expansion in 1939

Democrat-Journal

Greater Little Rock feels a lift of confidence as it leers into 1939 from the rise of a gratifying upturn of business recorded during the closing months of the past year.

Profitless gains were marked up in all the main affairs of the two cities as December, 1938, fluttered down from the calendar and January, 1939, smiled its greeting.

Surveying the results of the forward surge that became evident last fall, and taking notice of soothing promises and tokens for the year ahead, business leaders of Greater Little Rock are expressing a faith in the outlook that goes beyond hopeful words into "good works." Substantial additions will be made this year to the expansion of business and industrial facilities which accounted for much of the building boom that flowered out of the fading end of 1938 in the twin cities.

The M. M. Cohn Company announced in December that it will erect a modern five-story-store building on Main Street between Capitol and Sixth, on the location now occupied by the McClellan Variety store and the Sally Shops establishment. The structure is to cost "several hundred thousand dollars."

In the industrial field, the Tuf-Neat Garment Company, Third and Commerce, Little Rock, comes up with a brick and glass building in a new year.

Tuf-Neat to Expand.

Additions to the Tuf-Neat plant, estimated to cost $50,000, will give the company 30,000 feet more of floor space, room for the addition of 150 sewing machines, and opening a part of the ten acres of land on which the plant is situated. The expansion is to be stepped up from 500 to 700, it is reported. The new plans are that are the "embarked quarters under a newly occupied about May 1.

A long-promised federal expansion will be contributed to Little Rock by the National Wood Products Company, which manufacturer kitchen furniture and is ready to go into the new plant to cost around $50,000, in the near future. The company is expected to be finished within six weeks and will amount to a greatly enlarged working force and plant.

Formally, this company sold most of its stock last year to mature in the South west. But the management reports that an exhibit of its products at the National Industrial Conference, Chicago, brought a 200 per cent increase in orders for the last quarter. The plant is expected to be finished within six weeks and will amount to a greatly enlarged working force and plant.

Another industrial plant which will begin the 1933-34 activity in Little Rock is one to make a product lackings for that in refining petroleum. This establishment is bound to be a builder, the Perroel Corporation, to be completed and begun operations in a few weeks.

The plant, which will be located on the Arch Street site about seven miles out of the city, will represent a "substantial investment," officials stated, and will employ some where around 30 men at the start.

Growth of the enterprise is anticipated as the market for its output-a comparatively new product-is developed.

Much improvement was built into the industrial facilities of the twin cities in 1938, which will reflect in the pay rolls and production values of 1939 and succeeding years, it is pointed out.

The Big Rock Stone and Material Co., which distributes a monthly payroll of some $175,000 to around 125 employees, rebuilt its establishment last spring at a cost of $80,000, and now has what is declared to be the largest and most up-to-date equipment of its kind between Chicago and Birmingham.

Lumber Plant Rebuilt.

The L. R. Bruce Co., in the eastern section of Little Rock, restored its big wood-working plant to full capacity by erecting a new modern building to replace one of its units destroyed by fire. Reported to have cost in the neighborhood of $500,000, this structure is used to prepare lumber for finishing into the various types of flooring which the Bruce Co. manufactures.

Rebuilding is under way on another L. R. Bruce building house of the Swift and Co., oil, and meat at the foot of East Seventeenth Street.

Outstanding achievement for 1938 was the opening of the stockyards in North Little Rock, February 1. The pay roll of the yards which runs about $15,000 a year, is a small item of the,$5,000,000 establishment to Greater Little Rock and the agriculture and livestock of a state.

Each month since their opening the yards have written checks for livestock to a total of about $5,000-a little less in some months of unusually light receipts, a little more in other months when the bulk of cattle and horses moved through.

Men who are competent to judge say that the yards should develop into an enterprise handling several million dollars worth of livestock a year.

Building at High Point.

New construction of all types in Little Rock during 1938 was showed to be pleasant figures at the year won along, by such large items as the Sear-Brookstock store, Main and Main, the addition to the South-West Bell Telephone Co., at Main and Main, and the St. Vincent's infirmary annex.

A total of 35 permits for new business structures were issued in 1938.

Aided by public buildings and a swell in residential construction which shrank up robust structures in the first stretch of 1938, Little Rock building permits swept into the last three months of the year to record a 250 in the decline of building permits over the same months of 1937.

In the light of that showing, the flight drop for the whole year under the 1937 building total-amounting to only about six per cent-is regarded as of small weight.

Public building in Little Rock last year included the School for the Blind and city auditorium, on both of which construction work is being done over into 1939.

The F. W. Dodge Corporation, figures stated, and will enter into the typical upsurge of building, said: "It is highly significant that private financed construction in the Greater Little Rock metropolitan area has established a favorable margin over public financed work."

Other Indications Excellent.

And the statement added that there was "no present indication of slackening in the city's upswing of building during the later months of 1938.

Other indicators of business conditions in Greater Little Rock joined with the increase of building in the second half of last year to give further proof of the general improvement under way.

Retail also recorded a definite gain over the holiday end of the year.

Total resources of the five banks in the Twin Cities added up to a gain of almost four million dollars for 1938.

Convenient crowds in the city during the final months of the year gave evidence of a clearing economic sky, in their size and spirit, it was observed, whereas in conversations totaling 17,000 delegates, were reported in 1938 by the local Chamber of Commerce.

For fire whenever, often cited as an index of business, went $50,000 over the 1927 figures, to the highest total for Little Rock since 1907-1908.

On two days during the Christmas vacation in the Twin Cities there were set at the capital city mail-window.

All together, the beginning of 1933 with its rising note in Greater Little Rock's affairs, is in happy contrast to the 1932 marked the opening months of 1938.

Forestry Building

74th Dedication May 2

Subsite 4-B-1-Dedication May 2 for the dedication May 2 and plans for the dedication are in charge of the members of the National Forester's Chamber of Commerce. Floats are to be entered in the parade by the forestry department, the CCC, the WPA, the state park commission, the Arkansas National Guard, the North Arkansas Electric Co. and business firms and civic groups.

An exhibit which is to be planned by the NFA, the FHA, the SCS and other agencies. The exhibits will be housed in the education building at the Arkansas Polytechnic College.

M. & A. Line

Scouting for New Business

Development Program

Under Way: Ore Shipments Increasing.

Harbor—A large timber treating plant at Heber Springs, shipments daily of pyrites of iron, a product which will result in silver ship \...
A $483,000 WPA fund with which the state is to develop industry in counties this year was released to the Arkansas Geological Survey's mineral development section yesterday.

The mineral survey, designed to determine quantities of each mineral available for commercial development and to provide an accurate record of the state's deposits, began January 7, 1938, and cost approximately $411,000 last year.

For 1939, work will include field surveys and analyses of minerals discovered in the state, studies of the areas for use of industrial organizations and state and private agencies.

State Geologist George C. Branner, said, "The work will be conducted in a new laboratory erected by the WPA at a cost of $5,300. It embodies a clay-burning kiln and facilities for chemical and physical analyses. More than 14,000 specimens are to be analyzed. Some samples have been gathered for testing.

Information will be made available to industries which manufacture bricks, china clay, lime, and glass products, and to farmers, and sand and gravel companies.

Water tests to determine supplies made at special laboratories situated at Mena, Jonesboro, Mountain View, Wadesboro, Marshall, Mountain Home, Paragould, Salem, Camden, and Hardy, were also announced.

Other laboratories are being contemplated this year in Conway, Craighead, Sharp, Lonoke, Saline, Marion, Sebastian and Newton counties.

609 Persons Employed.

The survey personnel of 609 persons conducted an investigation of 18,545 square miles in the state during the first year. The work was accomplished by 79 per cent of the total force.

Each county included in the project has an independent organization, consisting of a county supervisor and a staff of 16 field workers, members of whom were obtained by county election.

Report To Be Published.

"The survey has discovered many minerals new to Arkansas," Dr. Branner said. "The miners don't have to waste much time for discovering deposits already known to exist. The detailed information and the analyses of samples collected will constitute a permanent reference work, which, I believe, will be of great commercial development of the state's minerals.

Results of the survey, when completed, will be published in a bulletin, under Dr. Branner's direction.

Cutting ceremony was held at 111 North Victory street. Robert C. Beckstrom is state supervisor.

R. E. Van- 

New Forestry
Building Will Open Tuesday

Dedication Program at Russellville Feature of Tech Ag Day

The only building in the United States constructed by the Treasury Department primarily for use as a State Forester's service head-Quarters, the Russellville building, will be formally dedicated at Russellville Tuesday. This building, erected in the administrative offices of the State Forestry, is the former location of the Arkansas Ag. Day celebration this year. The building will be the site of a major dedication, including a parade which will attract many prominent state and federal officials participating in the program will be Congressmen C. C. Roberts, J. B. Gassaway, D. A. Young, and R. S. Forrest, the U. S. Forest Service, and the U. S. Forest Service, Atlanta.

The program will begin at 8 a.m. and the guests will have an opportunity to attend and participate in the program, which will be a program of interest to all Arkansans. The program will conclude with a dedication of the building.

The building, which has been completed at a cost of $150,000, occupies an entire block on West Main street. It is a new departure in federal building design, with native stone and timber arranged in a modern design and equipment. Its simplicity and design reflect the needs of the modern social setting.

Bought for the government a few years ago, the block was cleared last summer, and the remainder of the acres purchased from the city by whom the city is Russellville, was brought in this year.

Sold back to the United States and given to the government for $25,000 to its present owner, the property was

The day's program will open at 8 a.m. with a dedication of the grounds at the U. S. Forest Service, followed by the dedication of the new building by the Soil Conservation Service of the National Youth Administration, Farm Security Administration and the Soil Conservation Board.

At 9 a.m. the new building will be dedicated, and the dedication will include the dedication of the U. S. Forest Service building and the dedication of the National Youth Administration building.

A procession to the steps opened the dedicated building.

The actual dedication of the building will be given by Congressman Terry's remarks and inaugurating the dedication.

Exhibits will be open for inspection at 8 a.m. The building will be dedicated, and the dedication will include the dedication of the U. S. Forest Service building and the dedication of the National Youth Administration building.

At 9 a.m. the new building will be dedicated, and the dedication will include the dedication of the U. S. Forest Service building and the dedication of the National Youth Administration building.

The dedication ceremonies took place at 9 a.m. The dedication was followed by a brief address by a representative of the Soil Conservation Service, and a dedication of the building.

At 9 a.m. the new building will be dedicated, and the dedication will include the dedication of the U. S. Forest Service building and the dedication of the National Youth Administration building.

It is fitting that we should dedicate this day to social and economic development of northwest Arkansas.

Parrade is Colorful.

The Ag Day parade required more than an hour to pass through the city. The floats, headed by more than 100 horsemen, were composed of 30 elaborate floats, entered by various firms and organizations. The floats represented practically all the governmental agencies, businesses and industries and the usual commercial representatives.

The Ozark National Forest float, representing forest and water developments, was judged the winning float of the day. It was a spectacular parade, with a long trailer, covered with pines, and a small vehicle and a miniature pool with an actual waterfall on the car. The pool was surrounded by a group of young women, including Miss Minnie Koe Koons Hicks of Lonoke, and her friends, Miss Minnie Koe Koons Hicks, daughter of Supervisor Koons of the Ozark National Forest.

The floats traveled along the streets to the National Youth Administration, which depicted a "wooden-legged" type of display, and the "free loaves and fishes" idea, one of seven large floats from the "State of Year."
CONSERVATION
IDEA STRESSED
IN CELEBRATION

5/1/31

Throng at Event At
Russellville.

By CLOVIS COPELAND.

The United States Forest Service, in celebration of its 20th anniversary, staged an Agri Day parade in Russellville on May 2. In addition, the Forestry Service put on a ceremony to commemorate the 15th anniversary of the establishment of the Arkansas Forestry Service.

The parade was one of the main events of the celebration. It was held in front of the new forest building on the campus of the University of Arkansas. The parade was led by the Russellville High School Band, and the float consisted of 50 children carrying signs and banners.

The theme of the parade was "Forestry for Future Generations." The floats were decorated with pictures of trees, forests, and wildlife, and the students carried signs that promoted the importance of preserving the forests.

The ceremony was held in the new forest building, which was dedicated to the memory of the late Dr. Robert E. McCrory, a noted forester and educator. The dedication included a speeches by various dignitaries, including Dr. J. R. Smith, president of the University of Arkansas, and Dr. R. E. McCrory, the former head of the forestry department.

Following the dedication, the students participated in an essay contest on the theme of "The Future of Forestry." The winners were awarded scholarships and other prizes.

Prize Winners Announced

The student essay contest was sponsored by the Arkansas Historical Society, and the winners were announced at the ceremony. The first prize was awarded to Jane Smith, a senior at the Russellville High School, who wrote a paper on the history of forestry in Arkansas.

The second prize was given to John Doe, a junior at the University of Arkansas, for his essay on the role of forestry in the state's economy.

The third prize was awarded to Mary Brown, a senior at the Russellville High School, for her paper on the importance of conservation.

Speaking on the occasion, Dr. R. E. McCrory said that the future of forestry depended on the young people. "We must teach them to appreciate the beauty of nature," he said. "We must teach them to conserve the resources of our forests."
LOW PRICE, NOT LACK OF TONNAGE, RETARDS STATE'S ZINC MINING

By TOM SHUMAN
Special to the Gazette

Mountain Home, May 20.—Low ore prices, rather than lack of tonnage, are responsible for lack of development of lead and zinc deposits in several north Arkansas counties, Howard Millar said yesterday after completing a survey of approximately 200 miles and prospects in Marion, Searcy, Newton, Boone, Benton and Carroll counties.

A resident of Murfreesboro, Pike county, Mr. Millar is making estimates of ore reserves in north Arkansas in connection with the statewide mineral survey sponsored by the Arkansas Geological Survey. He will make his final report about August 1, after studying ore deposits in Baxter, Lawrence and Sharp counties.

Development of cheap electricity through construction of proposed power dams on the White river and its tributaries and an increase in ore prices would result in the building up of an important zinc mining and smelting industry in this section of the state, Mr. Millar believes, as a result of his survey thus far.

There has been a demand for several years from investors in zinc and lead properties in the field for some kind of a report on potential ore reserves of the area.

One of Mr. Millar's recommendations for development of the zinc field in north Arkansas is that deep drilling be done on known shallow ore deposits. Most of the ore shipped from this section is zinc carbonate, which usually is found high on the mountains close to the surface.

Most generally accepted theory is that this was deposited by surface waters that had percolated over and through zinc sulphide ore, picking up some of the ore in solution. It is considered possible that valuable beds of sulphide ore lies beneath these upper runs of carbonate.

Expressing belief there is sufficient commercial zinc ore in the north Arkansas field to support a large zinc industry, Mr. Millar said:

"I think central milling plants in each of the several districts will solve the production problem when the price of ore justifies development. Each plant should have sufficient capacity to process and concentrate all the ore mined in a particular district. They either should maintains a cash market for ore or operate on a custom basis."

No large company has operated in the north Arkansas zinc field since the World war. Small operators have no facilities for milling the mill ore produced, hence they mine primarily for free ore, which is found in chimneys, ready for the market as it is taken from the ground. Utilizing the mill ore, which has to be treated before it is marketable, requires much equipment.

Mr. Millar also thinks zinc smelters or electrolytic plants should be operated in the field to convert the clean ore into metal. He said with such plants operating, other plants using zinc as a raw material might locate here.

The metallic content of manganese as well as zinc ores can be abstracted by the electrolytic process, which is one of the reasons construction of White river power dams is being urged. The territory has no coal or gas and use of wood is not economically feasible.

Arkansas carbonate of zinc ores is adaptable to all metallic and chemical purposes to which zinc ores can be put. The best grade of this metal can be processed from virgin ores is obtainable from our zinc carbonates. For this reason the field, with cheap power available, might be attractive to chemical plants.

One of the first efforts to smelt ore in the United States was made in 1857 at Calamine, Sharp county. It was a financially successful venture. A considerable amount of zinc ore was mined and smelted at Calamine in the 1860s and some of it even was shipped to Germany for use in the manufacture of munitions for the Franco-Prussian war.