

Dec 29, 1905

How "Smackover" Got Its Name

By ROBERT JOSEPH BROWN.

During the summer of 1905, while I was in El Dorado representing the Arkansas Gazette, I sauntered across the square to the offices of Bunn and Patterson, attorneys.

Judge H. G. Bunn, after a brilliant legal career, had come to El Dorado to pass the evening of his eventful life. Judge W. E. Patterson, at that time mayor, also was a lawyer of more than local renown.

On this occasion a chance reference to the abundance of game in the surrounding country and the good hunting along Smackover creek brought from me a laughing comment on the name "Smackover." I had heard several versions of its origin and spoke of them somewhat skeptically.

Judge Patterson was busy in the office library at the moment and Judge Bunn was my immediate host. From him came a ready response to my request for the historical facts. He disposed of the conflicting anecdotes with a good humored reference of the progress of human nature to dramatize the romantic, fantastic and fanciful imaginings of the individual whenever an appropriate subject presented.

In Fred W. Allsopp's "Folklore of Romantic Arkansas," he makes casual reference to a story that the name "Smackover" was a corruption of the French designation given long ago to the dense sumach growths which shaded the meanderings of a creek marking the boundaries of Union and Ouachita counties. Several other suggestions as to the origin of the name are interesting, but seem to have no authentic basis of fact, and all of them, as I listened to Judge Bunn, so many years ago, were mentioned by him, and dismissed with a tolerant smile and a wave of the hand.

"When I came here," he said, "Arkansas was alive with game, but nowhere else was there such abundance, nowhere else such natural game preserves as around these parts."

In reminiscent mood then, he told of hunting experiences, and of the alluring opportunities persisting, even to that moment.

Deer seemed to challenge the ardor of the hunter more than anything else, and as they were depleted more and more, and



JUDGE H. G. BUNN.

sometimes disappeared entirely in many sections, they took refuge in the friendly thickets of the Union county bottomlands. Deer thrived in this locality because the forage was good, the shelter was ideal and the difficulties of following and locating them were many.

French "voyageurs" and old-time settlers of French extraction or direct descent left the earliest and most persistent impress upon the colloquial vocabulary and geographic nomenclature of Arkansas, as well as all the other states subsequently carved out of the original Louisiana Purchase. These French-speaking pioneers were the first and most patient followers of the game trails of Arkansas, and long after the once abundant supply of game had diminished to the apparent vanishing point, they knew where the best that remained could be found.

By word of mouth and by personal experience this information was current among the hardy settlers, and those who knew, agreed that the "covert," (as the Frenchmen called it), the almost inaccessible

sible hiding place where the deer were still abundant, was among the dense sumach thickets in the creek bottoms near the site where the county seat of Union county is located.

It was a territory that tried the skill and courage of the most experienced, but the rewards of the successful hunter were in keeping, and from a period so remote that local history, legend and rumor have no accurate date to affix, the "sumach-covert" was known widely as an unfailing source of venison supply for those who

were real hunters and frontiersmen.

The name was French, and was pronounced "s-h-o-o-m-a-c-k-c-o-v-e-r-t," with the "o" in "overt" emphatically long, and from the first, passing as it did from mouth to mouth, spoken with eager excitement by earnest men of little learning, for the most part it always sounded, to the average listener more like "Smackover" than anything else. So Smackover it became, and Smackover it is, and that is how it originated.

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COUCH SEES UNLIMITED POSSIBILITIES FOR

Gives Views On Future Of Arkansas

Special to the Gazette.

Pine Bluff, Feb. 1.—Possibilities for industrial development in Arkansas are unlimited, and with the state celebrating its centennial of statehood this year, this is a particularly appropriate time to consider the many opportunities that offer themselves, says Harvey Couch, president of the Arkansas Power and Light Company.

Mr. Couch views the situation not only from the industrial angle as a utilities magnate, but from the civic angle as head of the centennial celebration.

"Although the payrolls of Arkansas increased in 1934 more than 27 per cent over the preceding year, and totaled more than \$26,000,000, there is no reason to believe that we can not more than double them in the next 10 years," he declared today in an interview.

"Arkansas is strategically located in respect to raw materials and the developing markets of the Southwest, which is now the most rapidly developing section of our country, and with our low living cost, our large supply of native white labor, cheap power and fuel, our possibilities are unlimited."

Sees Splendid Opportunities For Smaller Industries.

Mr. Couch can see great possibilities for development of our agricultural, animal, forest and mineral products, and, along with these, our manufacturing industries. There are many opportunities for the development of small industries in the state, he thinks.

"Too often," he said, "we think of establishing an industrial enterprise, but instead of going about it ourselves, we look for someone from New York or Pittsburgh or some other place to do it. That is a mistake. We have just as much ability right here at home. And most small enterprises can be financed in the community."

"We need talent at home. There is a great need for excellently run industries using raw materials and producing needed articles for the communities they serve. There is unlimited opportunity for the small but conscientious industry. We must all turn our efforts toward increasing the opportunities for each citizen to become and to remain independent. And I believe it is up to the small industry to re-estab-

lish the high standard of living to which this country has always rightfully laid claim instead of—to borrow a phrase—continuing 'the charity that seems to bring prosperity to all.' So just what is a small industry? It is any industry where one or more are employed to prepare or manufacture an article for market.

Sees State's Future Depending On Industrial Development.

"We now have adequate transportation facilities, good roads, a network of electric and gas lines, and rapidly developing markets. In Arkansas and adjoining states are over 20,000,000 people, and within 500 miles of Little Rock there are 32,000,000 people, more than one-fourth the population of the entire United States. In Arkansas and the three adjoining states of Louisiana, Texas and Oklahoma, there is an annual spendable income of over \$5,000,000,000. Arkansas alone has \$350,000,000. There is no reason why the natural resources of Arkansas should not be fully developed, and its future de-

pends principally upon the initiative of its people. Its future can be assured by the development of its industries.

Discusses Development Of Agricultural Products.

"With our fertile soil and favorable climate, we can produce a wide variety of products. We have a growing season of about 240 days and during this period we have 31 inches of rain with an average temperature of 68 degrees. Although our canning industries have grown in recent years, we should increase them. There are tremendous possibilities for new industrial uses for agricultural products. Soybean oil are

SEES UNLIMITED OPPORTUNITIES



This layout, prepared especially for the Gazette's Manufacturers' Page, shows some of the many utilities that Mr. Couch is interested in.

used extensively in paints and varnishes. Peanuts could be crushed to produce oils and other products. Corn can be made in glucose, starches, and alcohol.

"The textile industry at present is over-developed, but there is no reason why needle work industries should not operate profitably manufacturing shirts, dresses, overalls, frocks, and other articles. We should also be able to produce at home plow lines, ropes, and other cotton goods.

"Although we have a number of cotton oil mills in the state, there are no refineries for the production of oleomargarine, lard compound, and possibly soap. Cotton linters also offer possibilities for the production of batting, stuffing for cushions and upholstery, felt and artificial leather, and conversion into plastics.

Dairy Products Offer Numerous Advantages.

"In recent years the plastic industry has grown to an annual value of over \$2,000,000, and synthetic materials produced from cotton or wood fibers have replaced steel, copper, glass, and rubber in furniture, wall panels, hardware, automobile parts, safety glass, and other articles. Rayon, artificial silk, explosives, and celluloid are other possibilities.

"In recent years creameries and cheese plants have been established throughout the South and some of these have come to Arkansas. As these provide steady income for the farmer running into thousands of dollars daily, every effort should be made to increase the number of cows on our farms in order to make further development

possible. There are 463,000 cows and heifers kept for milk in Arkansas that produced over 1,000,000,000 pounds of milk in 1934, but in Wisconsin the production was over 10,000,000,000 pounds. The manufactured dairy products of Wisconsin are worth twice the value of our cotton. Throughout the country each \$1 spent for dairy feed produced an average return of \$2.50. In Arkansas

there are less than 7,000,000 chickens, while Iowa has nearly 32,000,000. Arkansas has 742,000 thousand hogs, but Iowa has over 6,000,000.

Timber Supply Affords Room for Development.

"It has been predicted that in time our forest crop will greatly exceed the value of cotton, and because of the rapid growth of southern pine in this area, which together with our natural gas and cheap power has attracted paper mills to this area, this appears entirely possible. There is a 200-ton Kraft paper mill at Camden and a 100-ton mill under construction at Crossett. The mill at Camden has already attracted a plant for the manufacture of paper bags, and the mill at Crossett will round out the industries in that territory which already include a chemical and finishing plant in addition to the saw mill. The saw mills at Crossett, Warren, and other locations have demonstrated the wisdom of a reforestation program, which will perpetuate our timber industries.

"Although our stands of virgin timber have been largely depleted, our present stands and future growth indicate that the production of lumber in Arkansas is likely to increase and to make possible the development of extensive woodworking industries.

"With so large a supply of raw material and with rapidly developing markets, the furniture industry in Arkansas should grow to many times its present size. There are possibilities in the production of other wood products such as portable houses, wagons, toys, wooden freight cars, automobile camp trailers, and baskets and crates. The people in the Ozarks have demonstrated the possibilities of manufacturing in the home and we have examples of possibilities of enterprising individuals in the manufacture of wooden parts for threshing machines, bows and arrows, baseball bats, fishing poles, and many other accessories.

"Our oak is admirably suited for furniture and flooring. Gum is used extensively in furniture veneers and interior finish. Cottonwood is adapted for

veneers, crates and baskets. Elm is suitable for the manufacture of wooden heels and many other specialties.

Decline in Value Of Mineral Products Cited.

"Although in 1925 our mineral products were valued at over \$87,000,000, in 1933 this value was not quite \$13,000,000. Drilling for oil and gas is still active, coal mines are being enlarged, cinnabar mines are being developed, and there appears to be a possibility that mining operations will be resumed in the lead and zinc fields of North Arkansas. With an improvement in general conditions, the demand for aluminum will probably be followed by more extensive production of bauxite as current production is less than half that of 1929. The presence of bauxite may lead to the development of chemical and abrasive industries in the state.

"There are possibilities in further development of the limestone deposits and glass sands in the manufacture of glass, of the chalk deposits in the manufacture of rock wool, of the limestone deposits in the manufacture of carbide, of the granite deposits in the manufacture of feldspar, of the zinc sulphide deposits in the manufacture of sulphuric acid, of the slates in the manufacture of roofing materials, of the silica deposits in the manufacture of washing and cleansing powders, and of the clays in the manufacture of pottery. The brick plants at Malvern, the potteries at Benton and Camden are forerunners of the possibilities of clay.

"It is not generally known that Arkansas produces anthracite coal equal for domestic heating to that produced in Pennsylvania, and there are possibilities of increased income through the manufacture of coal briquettes. The oil refineries produce a wide variety of products and it is likely that the asphalt will find increasing use in the manufacture of roofing.

"The recent completion of chemical plants in Louisiana for the manufacture of caustic soda together with the sulphur and salt in that region indicates that the chemical development of the Southwest may lead to the estab-

lishment of any additional plants in Arkansas.

Many New Manufacturing Fields for State Suggested.

"In 1933 there were approximately 820 establishments employing 26,000 people with annual wages of over \$14,000,000, producing products valued at over \$81,000,000, of which \$37,000,000 was added by the process of manufacture.

"Sometime ago we sent out a questionnaire to newspapers and business men asking what articles they thought could be profitably manufactured in Arkansas. They suggested the following: Newsprint, ink, envelopes, gummed paper, carbon black, cotton, twine, work clothes, rayon, hosiery, underwear, overalls, dresses, muslins, other cotton goods, dyeing and waterproofing, glassware, chinaware, clay products, wooden toys, desks, chairs, furniture, brooms, brushes, soybean flour, paints, var-

nishes, canned fruits and vegetables, cotton seed oil products, candles and confectionary, baseball and golf equipment, cotton goods, fancy sawed wood and paneling, and the development of lignite, phosphate, zinc, lead, and manganese ores.

"That these resources can be developed within our own state and by our own people is illustrated by the fact that only one per cent of the manufacturing establishments in the United States have over 1,000 employees, and over half of all employees work for companies with less than 250 on their payrolls. Three-fourths of all industries employ 20 or less and over 2 million organizations are not even incorporated.

"With business now about halfway up from the depression bottom of 1933, predictions for 1936 of a 100 per cent increase in residential building, a 20 per cent increase in automobile production, a 10 per cent increase in business conditions as a whole, and large sums of idle money in the banks, the prospects are innumerable for men with industry, intelligence, and integrity."

Russian Engineers to See Mineral Deposits in State.

Three Russian mining engineers who are touring America, studying geological formations and mineral deposits, will visit Arkansas, George C. Branner, state geologist, was informed yesterday, but no approximate date for their arrival was given.

The word came from Frank L. Hess, principal mineralogist of the Bureau of Mines at Washington. He said the Russians were mainly interested in Arkansas's deposits of nepheline syenite, mercury and titanium oxide, and in the diamond mines of Pike county.

Dr. Branner said that the nepheline

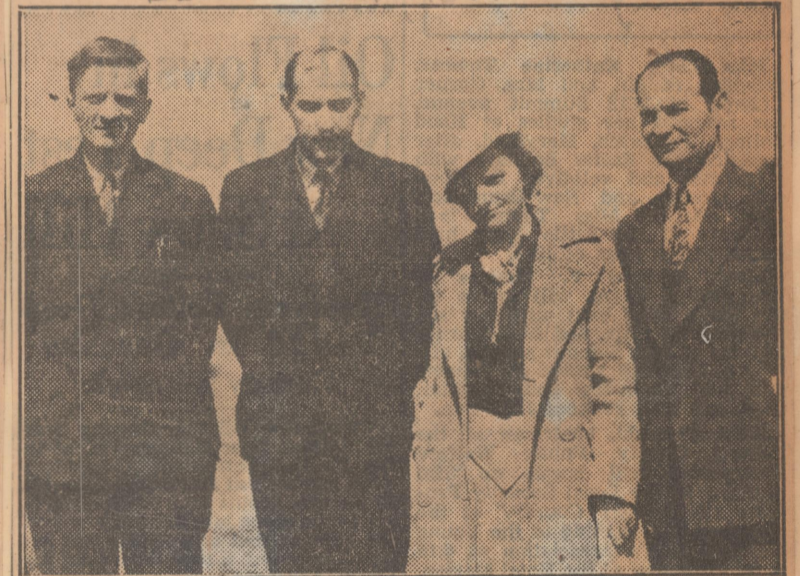
syenite is in Pulaski, Saline and Hot Spring counties. It is much like granite and has been used for building stone. It recently has been found of value in the manufacture of glass.

The titanium oxide is in Hot Spring county. It is used in the manufacture of steel. The mercury deposits are in Pike and Howard counties.

The Russian visitors are Dr. T. A. Solutzev, Dr. M. V. Bessova and Dr. K. A. Simonov.

Russian Engineers Here

Democrat 4-19-36



Left to right: Dr. T. A. Solutzev, Dr. K. A. Simonov, Dr. M. V. Bessova and Mr. Korsun.

Three Russian geologists and mining engineers arrived yesterday to spend about a week in Arkansas, inspecting geological formations and mineral deposits in the state. None speaks English and they are accompanied by H. C. Korsun as interpreter.

The group is making a 12,000-mile tour which will carry them across the United States, up the Pacific coast and into Alaska. In Arkansas they are especially interested in in-

spection of deposits of nepheline syenite, mercury, titanium oxide and diamonds.

Methods of mining in America are being studied by the workers with the view of purchasing equipment which they believe will be of benefit in similar operations in Russia, Mr. Korsun said.

The picture was taken while the group stopped in Little Rock yesterday to confer with Dr. George C. Branner, state geologist.

Large Negro Populations In 15 Cities

Washington, April 11 (AP).—The migration of Negroes from Southern fields to Northern industries has given eight large Northern cities a Negro population more than half of which was born outside the state in which the city is located.

The migration reached its full force during the boom wage days of the World war and has kept up with less force since then. During those days, labor contractors swept through the South enlisting workers and sending them to Northern industrial plants. Some of those who went returned to the South later, but most of them stayed to be followed later by relatives.

A study by the Census Bureau today supplied figures showing the population make-up of 15 cities that have a Negro population of more than 50,000. The 15 were New York, Chicago, Philadelphia, Baltimore, Washington, New Orleans, Detroit, Birmingham, Memphis, St. Louis, Atlanta, Cleveland, Houston, Pittsburgh and Richmond.

How Migration Went.

Some of the figures disclosed by the study were:

More Virginia-born Negroes live in New York than do in Norfolk.

Almost as many Mississippi Negroes are in Chicago as are altogether in Vicksburg, Meridian, Greenville and Natchez.

More Georgia Negroes are in Detroit than are in either Augusta or Macon.

About as many South Carolina Negroes are in Philadelphia as are in Charleston.

Virginia sent more Negroes than any other state to New York, Philadelphia, Baltimore, Washington and Pittsburgh.

Mississippi gave more than any other state to Chicago, Memphis, St. Louis and New Orleans.

Georgia Negroes predominated in Detroit, Cleveland and Birmingham.

South Carolina Negroes went principally to New York, Philadelphia, Washington, Detroit and Baltimore.

Louisiana Negroes went mostly to Chicago and Houston.

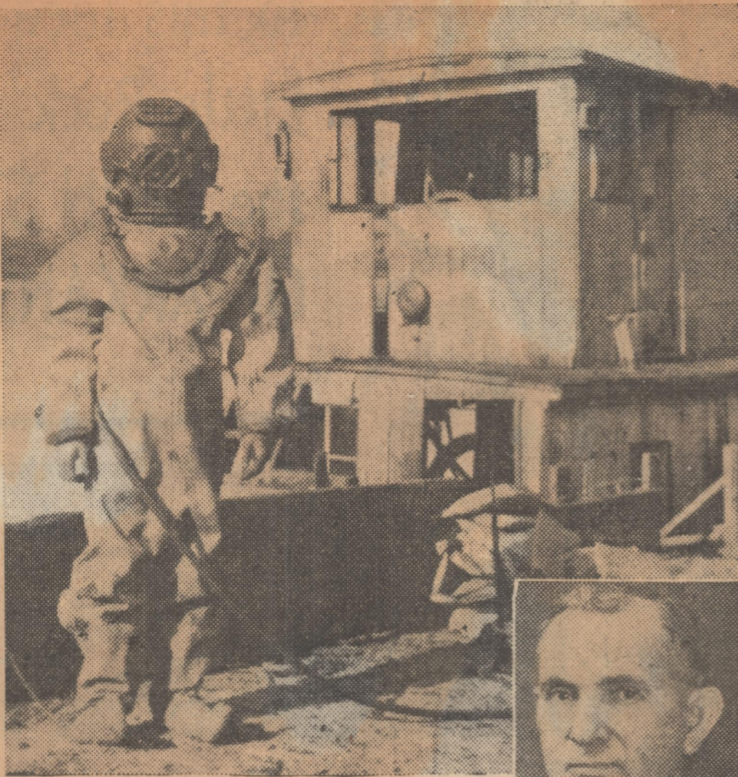
Arkansas Negroes.

Arkansas sent them principally to Chicago and St. Louis.

Those from Tennessee chose Chicago, St. Louis, Cleveland and Detroit.

On the other side, less than 20 per cent of the Negroes in New Orleans, Birmingham and Richmond were born outside Louisiana, Alabama and Virginia. And the Atlanta Negro population was almost completely native Georgian. Just seven per cent came from outside the state.

MUSSELS THEIR BUSINESS



A diver on the White river who harvests mussel shells for making pearl buttons. At the right, Sol Heinemann, veteran Arkansas mussel dealer.



Newport Firm Keeps Many Workers Busy

May 3, 1936

Newport, May 2.—An industry that is probably known better out of the state than it is in Arkansas is that of producing mussel shells and making buttons.

Sol Heinemann of Newport is probably the South's oldest mussel shell buyer, having been in the business more than 25 years. He owns the controlling interest in a button cutting factory at Newport that has grown from five to 24 machines that keep 26 men employed. A. P. Humphreys is the other owner of the enterprise.

Mr. Heinemann has shipped shells all over the United States and to several foreign countries. In fact, 90 per cent of the shells in this territory have been purchased by him. For a year or more before the button factory was opened in Newport, he had been wondering why, instead of shipping his shells to Northern factories and receiving a comparatively low price for them, he could not have the buttons cut out and make a larger profit. When Humphreys came down from Missouri last June to buy a load of shells for his five-machine button-cutting factory there, the two men made a trade and Humphreys moved his machines to Newport. Heinemann installed 11 more machines, and in December eight more were added.

Button Factory One Of Busiest Spots at Newport.

The factory is one of the busiest places in Newport. With rows of machines along two sides of the small building, a row in the center, and a man at each machine, the whirring and humming of tiny saws cutting through shells precludes any desire for conversation. Minute drops of moisture spray the air as the water-soaked shells are cut. Humphreys, who serves as foreman, stands nearby. When the button slugs are cut, they are placed on burlap sacks to dry. The sizes range from 16, a rather small size, to 30, a large-sized button. Only one button can be made from each slug, although sometimes the slugs are an inch thick.

"The shells must be thoroughly soaked in salt water before they are cut," Mr. Heinemann explained, leading the way across the yard to a small building crowded with barrels in which shells of all sizes and kinds were soaking. "They really should soak three weeks, but sometimes we are in such a rush to get them out that they are allowed to soak only three days. This winter I had the only individual stock of shells in the South. In December I had 100 tons, to use until March or April in making buttons."

Mussel Shells Sent To Many Foreign Countries.

Shells mean more than just shells to Mr. Heinemann. There are the pretty delicately tinted A-1 shells, which sell for \$100 a ton, and which are shipped to France, Austria, and Belgium to be used in making knife handles and umbrella handles. Before the Ethiopian war, Italy was a big outlet for these shells, and the Balkan states are still a good market. The button shells, which are referred to by such amusing names as "grandma," "pocketbook," "elephant ear," "pimple back" and "cucumber," according to their appearance, range from \$10 to \$20 a ton. Then there are the shells from which come lustrous,

often valuable pearls to add to his collection.

Unusual Collection Of Pearls Accumulated.

Nearly everybody has a hobby; but few hobbies as inspiring and profitable as Mr. Heinemann's are as closely associated with the task of making a living, or depend on it so much. Shortly after he bought his first shells 25 years ago, he bought his first pearl; and two and one-half years ago he started a pearl collection that now is one of the most complete in the United States. It consists of approximately 1,500 pieces, bought from White and Black river workers and wrapped, gleaming and beautiful, in folds of white tissue paper. One paper contains 400 or 500 pearls. Of these 1,500, all except his "freak" collection are for sale. That collection, some 40 or 50 pieces of peculiar shape and coloring, he prizes above price.

One of the most interesting pieces in the "freak" collection is the only one not found in either White river or Black river. A rectangular piece about two inches long and less than an inch wide, its raised center is the perfect figure of a mummy. Originally it came from the Atlantic ocean; Mr. Heinemann bought it from a man in New York.

Two small pearls shaped like human heads; one shaped like a right hand; and four "human teeth" (one such a dark pearl that Mr. Heinemann calls it "decayed") are included in the collection. Among the other pieces are a bull's face with horns—the pearl which started the collection of "freak" pearls one and one-half years ago; a red-tinted penguin; a bird's wing, brownish-purple in color; the head of a race horse—perfect, even to the bridle which can be plainly seen; a dove, speckled perch, beetle, snail, seahorse, coon's foot, maple leaf, turtle, and Indian arrowhead, club and headgear. All of them came from the White and Black rivers, and all, strangely, are formed so nearly like the objects they resemble that their identity can easily be guessed.

Pearls from White and Black river are valuable. For 30 years men have been treasure-hunting in the beds in front of Newport. Mr. Heinemann tells of a Newport Negro who sold for \$1,800 a pearl which its buyer eventually sold for \$5,000, and which finally was priced by Tiffany's, New York city,

at \$20,000. The largest sum Mr. Heinemann ever received for a pearl was \$1,000. Last year he sold for \$275 a pearl which once would have brought \$2,000 or \$1,500.

Gathering Mussels Gives Employment to Many.

Back of the button factory and the pearls—and responsible for them, too, in a way—are the men who, every sum-

mer, drag the rivers or dive into their depths for shells. Last year 25 divers were at work in the White river at Newport, in addition to numerous other men who used the older and less dangerous method of "tongueing" for the shells.

Men were "tongueing" for shells when Mr. Heinemann came to Newport some 30-odd years ago. The method is simple, effective and without the dangers associated with diving. Hooks are attached to a long bar, which is lowered into the water and dragged. The muscles snap on the hooks, find that they can not get off, and there they are.

Regardless of how they are obtained,

when the mussels are brought to shore they are placed in the cook-out, or boiling vat. This kills them, and they then can be examined for pearls. All of the men employed in gathering shells know about Mr. Heinemann's freak collection, and are constantly on the watch for such oddities.

"I buy pearl slugs and sell them by the ounce to Bombay, India," Mr. Heinemann said in discussing the pearl and shell business. "What do they do with them? I wondered that, too, for a long time. Then I learned that Hindu doctors have the idea that pearl slugs will cure diseases, and they grind up the slugs, burn them, and treat their patients. Once I sold slugs to them for as high as \$10 an ounce; now they bring only \$4."

Sand and Gravel Business Gives 15 Men Work.

The button factory, pearl collection, and shell industry are not Mr. Heinemann's only interests. Soon after he first came to Newport years ago, he entered the sand and gravel business, and he has never forsaken it. Today he has two dredge boats on White river, with 15 men employed on the boats and in the plant.

"I hauled the first load of gravel on White river," Mr. Heinemann mentions modestly, in a reminiscent voice.

And that is not all. Besides his pearl and gravel interests, he buys and ships pecan meats; and just a few years ago he manufactured furniture on a small scale. The pecan business occupies a great deal of his time; during the fall and winter he had 100 families employed over the county, and eight girls in the office assorting the pecan meats for the drying trays. This year he bought between 150,000 and 200,000 pounds of pecans in the shell. The pecan meats are shipped to Philadelphia, New York and Chicago.

Some day Mr. Heinemann may manufacture furniture again. He has a few walnut pieces of his own manufacture in his home today—a bedroom suite, a dining table, chairs, and a coffee table with exquisitely inlaid top. His manufacturing machinery was destroyed by fire, but back of his house is a barn filled with 17,000 feet of walnut lumber. At present, however, furniture is forgotten; the button factory, pearl collection, and sand and gravel business keeps Mr. Heinemann occupied every minute.

Copies of State History Received

First copies of a brief history of Arkansas, published by the federal government and being distributed throughout the nation as a Centennial feature, have been received in Little Rock.

The history was compiled by W. F. Hall, state elementary school supervisor, and Mrs. Hall, journalism instructor at Little Rock Junior College. Publication of the volume was sponsored by the State Department of Education.

The book, bearing the title "Arkansas—A Study of Its Growth and Accomplishments," contains 50 pages of historical information. A full-page picture of the state capitol is included.

Fifteen thousand copies of the book are being mailed to other states. Only about 500 are to be mailed to Arkansas but copies may be obtained direct from the Government Printing Office at Washington at 15 cents each.

U. S. PURCHASE OF MOUNDS PROPOSED

May 29, 1936
Congressman D. D. Terry has introduced a bill in Congress to provide a \$20,000 appropriation for purchase of the Toltec mounds in Lonoke county, to be established as the Arkansas Mounds national monument. The mound area is a part of the Toltec community. The mounds are nationally known for the Indians relics found in them and scientists from several states have explored them. At one time tactics of out-of-state scientists who stripped the mounds of valuable relics aroused a protest from members of the University of Arkansas faculty.

sales. May 21, 1936

INCORPORATION MATTERS.

The following incorporation papers were filed in the office of Secretary of State Ed F. McDonald yesterday:

Ozark Land Company, Little Rock, articles of incorporation; capital stock, \$300; incorporators, Roy Holland, John M. Moose and Alvin E. Bell.

Payne Amusement Company, Mena, articles of incorporation; capital stock, 2,000 shares without par value; incorporators, E. C. Payne, Leila Payne and Hal DeLongy.

Pulaski Bauxite Company, Little Rock, articles of incorporation; capital

stock, \$10,000; incorporators, Herschell Bricker, Paul B. Martin Jr., and Arthur O. Sanders.

Colored Men's and Women's Civic Club, Inc., of Marked Tree, an organization to act as intermediary between gratuitous minded contributors and indigent persons, articles of incorporation; capital stock, \$5,000, incorporators, Prentiss Hines and 19 others.

H. F. Trotter, Inc., Pine Bluff auto shop operator, articles of incorporation; capital stock, \$25,000; incorporators, H. F. Trotter, Lucille S. Trotter and F. G. Bridges Jr.

Spur Distributing Company, Inc., a Delaware corporation, filed an amendment changing its capital stock from 1,000 shares of preferred stock with a par value of \$100 each and 200 shares of no par value stock to 400,000 shares without par value.

The Electric Vacuum Cleaner Company, Inc., a New York corporation with headquarters in Cleveland, O., filed notice of entry into the state and designated G. B. Rose of Little Rock as agent for service.

Pillsbury Flour Mills Company, a Delaware corporation with headquarters at Minneapolis, Minn., filed notice that the Pillsbury Flour Mills, Inc., has been merged with the former company.

COPIES OF STATE HISTORY RECEIVED

The Arkansas Centennial Commission and the state Department of Education yesterday received the first copies of a brief history of Arkansas, "Arkansas—A Study of Its Growth and Accomplishments."

The booklet was written by W. F. Hall, state elementary school supervisor, and Mrs. Hall, instructor of journalism in Little Rock public schools. The booklet was printed by the United States Government Printing Office in Washington, D. C., where copies may be obtained.

Many copies have been sent to schools all over the United States by Senator Joe T. Robinson. Printing of the book was authorized by Senate Resolution 275.

Visit Office Here

Two Chinese geologists, who have been attending Columbia university in New York City, called today at the office of Dr. George C. Branner, state geologist, on a tour of several states. One of the visitors, Sen Chu, is a member of the geological survey of China. He was accompanied by Keng Chang. While in Arkansas they will inspect the bauxite mines at Bauxite in Saline county, and also the cinnabar deposits near Amity en route through the Ouachita mountains to Oklahoma.

Arkansas's Archeology Archives

By
MISS
ANNETTE
HARLEY

The State University's Archeology Museum
Is Now Housed in New Improved
Quarters.

For seven years the Archeology Department of the University of Arkansas, of which Dr. S. C. Dellinger is the head, has been carrying on the work of retrieving from the ground the unwritten records of the early Indians of the state.

The discoveries made are now housed in the new museum in the Vol Walker Memorial Library building completed last summer. The museum is filled with modern glass cases in which are arranged the most interesting of the numerous discoveries.

For the convenience of observers, the displays in the front of the museum are objects of the mound builder types, found in the eastern and southern parts of the state. Those toward the back are from the much more ancient and primitive bluff dweller types, found in the mountains of northwest Arkansas. Most of the displays consist of artifacts—anything made by man—and accompanying diagrams showing how the Indians fashioned them. Incomplete products found show the methods of manufacture.

Several of the exhibition cases containing finds from the mounds are devoted to stone artifacts. Because, like all primitive people, the mound builders used stone weapons and utensils extensively, and because stone is durable, hundreds of these artifacts have been unearthed in Arkansas. In one case, occupied by weapons of war and hunting, are skillfully chipped arrowheads and spearheads, distinguishable from each other by size and weight; a few rare remains of spear shafts, decorated with carving and showing traces of the grasses that bound the parts of the spear together; and a celt, or ungrooved axe, which, when hafted with wood, was a formidable weapon. On the lowest shelf of this case are the bones of game found around the ancient village sites, indicative of the kinds of animals the Indians hunted, and a human pelvis with an arrowhead embedded in it, mutely witnessing the efficacy of this weapon in war.

Other cases of stone objects display household and farming implements, ceremonial instruments, and ornaments. The implements are usually rougher than the weapons. The types exhibited are stone knives, spades, hammerstones, and grooved axes. The finest of all stone work appears in the ceremonial instruments, large, thin blades with tiny geometric points, usually found in the graves of chieftains and priests and made of crystal and beautifully colored stone. Tobacco, a crop indigenous to this hemisphere, was used in many ceremonies, such as described by La Salle, and other explorers. Many pipe bowls,

either carved of stone or molded of clay and decorated with paint and carving, are displayed in one of the mound builder cases; the stems, seldom preserved, were of reed. In another case are ornaments, and two stone effigies; one effigy is a head carved of stone, the other a squatting figure with perforated ears, once decorated with pearls, and worshiped by the Indians. The ornaments are ear-plugs, beads and gorgets, that is, pendants. There are charms, too, such as boat stones, which the Indians believed prevented drowning.

The mound builder Indians made and used pottery extensively. An unusually large amount of it is found in Arkansas, and in variety of form it surpasses that of many other ancient cultures. One of the most interesting cases devoted to ceramics in the Arkansas museum is that showing how the Indian women made pottery—much of it beautifully even and rounded—without the aid of the potter's wheel, which was unknown to them, by coiling rolls of clay to build up the sides. Another case explains and shows the three distinct types of Arkansas pottery. Separate cases are then devoted to each type. Eastern Arkansas pottery is coarse, irregular, and the linear designs on it were roughly incised before firing. The Indians of this region, especially around the St. Francis, were, however, clever at modeling effigy pots to represent human heads, kneeling figures, birds, frogs, shells and fish. The so-called head and tail effigies, where the handles of the pots resemble the head and tail of some animal, are abundant. Some of the most unusual of the effigies have been gathered into a separate case.

The Ouachita pottery, found south of the Arkansas river, is more skillfully wrought, is finer in texture, and is decorated with engraving. The third type displayed is the Arkansas river pottery which is characteristically large, and vividly painted with red, white and tan representations of the sun, the four winds, clouds, or other conventionalized elemental designs. These patterns denote sun worship, and therefore show the influence of the Mississippi river culture, with its intimate contact with the Aztec civilization of ancient Mexico. A few pictures of the plumed serpent, which was an Aztec god, have been found on pottery in Arkansas.

Some of the other cases illustrate evolution in pottery forms, distinguish the different types of linear decoration, and display unusual ceramics of complicated forms which seem to have been made rather to demonstrate the skill of the potter than to be used much. For instance,



Dr. S. C. Dellinger, archeologist at the University of Arkansas examining some Indian pottery found in this state.

there is one vessel composed of a bottle superimposed on three other bottles which serve as legs.

Maps of the mounds excavated, showing the original position of the artifacts taken are displayed.

The Ozark bluff dweller culture, located in northwest Arkansas furnishes more examples of the textile arts than do the mounds, although the bluff dweller remains are far more ancient. Basketry and clothing have been well preserved in the dry bluffs, where they have been sheltered from dampness and wind. This culture bears many resemblances to that of the basket makers of the arid Southwest, who were the forerunners of the cliff dwellers, or Pueblo Indians. The basket maker culture has long been considered the most ancient known culture of North America, but the Ozark bluff dwellers are now thought to be equally ancient, both dating back to at least the beginning of the Christian era. Many examples of the weaving done by the bluff dwellers has been collected by the Archeology Department of the university, and put in the museum display cases. The clothing found consists of woven grass moccasins, fiber loin cloths, and a grass headdress. Large pieces of deerskin are found in the burials of these people, in positions indicating that they wore leather leggings and capes, sewed with thongs.

Many of the baskets exhibited resemble the work in woven cane bottoms of chairs. Clear designs are visible in some of the pieces, accentuated by the use of opposite side of the splint in the warp and weft. Other woven utensils displayed are bags, for gathering and storing seed, and fish traps.

As these people were too primitive to make pottery, woven baskets and bags were very useful to them. Closely allied to their extensive use of woven artifacts in their daily life, was their peculiar burial custom. Back in the dry bluff shelters, beneath ashes, debris and leaves, the dead bluff dwellers, well preserved because protected from moisture, are found buried in woven fiber bags, on woven mats. Many of the burials, mats, bags, mummies and all, have been placed intact on the shelves of the cases in the museum. In one exhibit a mummified dog can be seen lying at the Indian's feet. Babies are found buried on their little woven cradles.

Besides textiles, the bluff dwellers made stone knives and spear points. They did not have the bow and arrow, but used the

A recent photograph of the archeology museum at the University of Arkansas.

atl-atl, a notched board which has the effect of lengthening the throwing arm, to project spears. They decorated themselves with bone ear spools, and shell beads, and amused themselves by blowing cane or reed flutes. Examples of all these artifacts are in the cases relating to the bluff dweller culture.

Both in the dry bluffs inhabited by the bluff dwellers, and in the mounds of the mound builders, discoveries have been made of grain and other foods eaten by the prehistoric Arkansas Indians. Since food is such an important part of any people's daily life, a large case is used to display not only the relics of food found, but the various implements which the Indians used in agriculture and food preparation. There are spades—one made of a buffalo shoulder, one of stone—and stone manoes and metates between which Indians ground corn, acorns and other seeds for meal. Grains are displayed in the pots and bags in which they were found. Other implements displayed are cooking pots, shell spoons, clay ladles, a wooden stirrer, and firesticks, for lighting fire by friction. Other remains showing the foods these people ate are corn, beans, acorns, sunflower seeds, cultivated lamb's quarter, squash, egg shells and fish bones.

Another special case is devoted to Indian children. On the top shelf of this case are little toy ceramics found with their burials in the mounds, and a small leather moccasin lined with soft fibers, from the bluffs. On this shelf is a skull showing the results of head-flattening, a practice prevalent among the mound dwellers, and a diagram showing how the flattening was accomplished by strapping boards to a baby's head. On the second shelf is a chart of a child's skeleton on which are placed in the relative position in which they were found the artifacts from a child's grave in a mound. These artifacts are toy pottery, ear plugs, discoidal (game stones), and a perforated stone pendant. The bottom shelf displays two bluff dweller child burials, one in which the remains are on a cradle, one where they are in a woven bag. The bluff dweller cradles were woven of bark on cane or wooden frames, and look like sturdy trays. Devices made of twisted grass were also used as cradles for carrying the baby.

The rest of the display room is given over to exhibits concerning natural history, such as birds found in Arkansas, mounted by Trusten Holder, department taxidermist.

Besides the display room, there are offices and work rooms where research studies are made. In these rooms are filed the data cards carefully gathered with the objects excavated, and here are stored many bones, pots and stones not on display. Many scientists from out of the state come here to do research work. Some of the research subjects that have been worked on this year are the size and physical development of the Indians in Arkansas, the diseases which affected them, and the origin of the plants they used for food. No less than 12 papers on the results of research done here have been written by Dr. Dellinger and other scientists.

The display room of the museum is open not only to research scientists and students in the archeology course at Arkansas, but to any visitors interested in seeing the remains and works of the earliest inhabitants of our state.

Arkansas Rich in Huge Mineral Deposits

Arkansas Democrat

June 14, 1936

Exploration of Resources Advocated in Hope of Finding New Uses for Products--Diversity of Rock Important

By George C. Branner
(State Geologist.)

During the last century the use of minerals in the United States, and in the world generally, has increased at a continually accelerating rate, due to the steadily increasing use of metal machinery, of mineral fuels, and of metal and non-metal mineral products in nearly all types of construction. It is a fact of great significance that the value of the minerals produced in the United States since 1910 was greater than in all history, and, in much the same way, in Arkansas the value of the minerals produced since 1925 was greater than the aggregate value of all minerals produced before that year. Consideration of the development of the mineral resources of Arkansas is, therefore, particularly appropriate at the present time when long-term plans for the most advantageous use of the natural resources of the state are being formulated.

A discussion of our mineral resources can well be undertaken from three points of view:

- First: Physical basis.
- Second: Profitable development within our economic system.
- Third: Future development.

First, as to the physical basis of our mineral resources, the rocks which make up the surface of the state, and from which all of our mineral wealth must be derived, may be divided into two great divisions:

1. Sedimentary rocks which consist, for the most part, of either consolidated or unconsolidated particles of sand, clay and lime.
2. Crystalline rocks which are hard rocks consisting of masses of the crystals of various minerals.

The sedimentary rocks, which were laid down as sediments in salt or fresh water bodies, extend over 99.9 per cent of the surface of the state, and may be divided into two classes:

1. Those which make up the lowland area in the southern and eastern parts of the state (Gulf Coastal Plain), and which consist, for the most part, of unconsolidated clays, sands, marls and chalks of relatively recent age. These cover approximately 27,610 square miles, or 52 per cent of the area of the state.

2. Those which make up the highland area in the western part of the state (Paleozoic). These consist of consolidated and usually hard sandstones, shales, slates, limestones, and dolomites of ancient origin, and cover about 25,710 square miles, or 48 per cent of the area of the state.

The crystalline rocks, which were formed by the cooling of molten masses, make up less than one-tenth of one per cent of the total area of the state, being exposed over about 15 square miles.

Diversity of Rock

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

In the lowland (Gulf Coastal Plain) portion of the state are found the fuel minerals: oil, natural gas and lignite; and the non-metallic minerals: clay, marl, chalk, fuller's earth, sand and gravel.

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

The crystalline or igneous rocks, although of small area extent, have produced important minerals. These are bauxite, syenite or granite, titanium, and diamonds.

Concerning the second major consideration first referred to as profitable development of the state's mineral resources within our economic system, a perspective of the development which has a place and an understanding trend may be obtained from the value of the 55-year production from 1880 to 1934, inclusive.



ARKANSAS STATE PLANNING BOARD
MINERAL RESOURCES

LEGEND

	SAND AND CLAY		MANGANESE
	CLAY		ZINC AND LEAD
	LIGNITE		PHOSPHATE
	CHALK		GYPSUM
	CHALK, CLAY AND MARL		ANTIMONY
	CHALK		ASPHALT
	SHALE AND SANDSTONE		PERIDOTITE
	SLATE AND SHALE		CHROMIUM-BEARING ROCKS
	COAL		FULLER'S EARTH
	LIMESTONE		GRANITE
	DOLOMITE		BAUXITE
	GLASS SAND		
	MARBLE		

DATA FROM ARKANSAS GEOLOGICAL SURVEY 1936

The following conclusions appear to be outstanding:

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

Producer of Fuel Minerals

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

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

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

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

4. Of the value of metallic minerals (\$36,213,639) produced in Arkansas during the 55-year pe-

riod, bauxite used in the manufacture of metallic aluminum has represented 72.2 per cent of the total; zinc, 14.6 per cent; manganese and manganiferous ore, 8.9 per cent, and lead, 0.6 per cent. The remaining 3.7 per cent is made up of quicksilver, antimony, iron and silver ores. The production of metallic minerals was strongly influenced by the high prices of metals during the war, the maximum all-time production of zinc ore occurring in 1916, lead and manganese ores in 1917, and bauxite in 1918. The maximum production of manganiferous ore, however, occurred in 1929.

In order to form a perspective as to the importance of the mineral production in the state with reference to the production of other basic commodities, Plate 7 has been prepared. This indicates that the value of minerals produced has risen from one and one-half millions in 1880 to more than 87 millions in 1925. This figure for 1925 represented more than an eighth of the aggregate value of all the basic commodities in the state, which include mineral, agricultural, timber and manufactured products. Or, comparing the rise of mineral values to agricultural values exclusively, we find that, in 1899, the mineral values were a little more than one-fiftieth of the agricultural values, while in 1925 this proportion had risen to about one-third.

Taxes Are High

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

is a remarkable record for an agricultural state. It should be remembered, however, that about 90 per cent of the above amounts were paid by the oil industry.

The number of persons employed by the mineral industries in 1929 was 7,391. The wages paid them was about \$7,563,000, and this furnished support for about 37,000 persons.

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

city governments, to employment, railroading, merchandising and banking.

The third major consideration first referred to has to do with the future development of the mineral resources. This involves consideration of policies which may expedite their development.

Reserves of mineral resources available for future development occupy the following general classes:

1. Reserves practically unlimited for any demand.

Non-Metallic Minerals.

Chalk, marl, clay, glass sand, limestone, marble, dolomite, mineral waters, slate, building stone,

Kempner's

The Most Beautiful Store in All Arkansas

Kempner's has meant the utmost in better footwear in Arkansas since 1892. Originally, only shoes and hosiery were sold by Kempner's, but today, answering the demands of their friends and customers, other merchandise has been added. Here you will find the most beautiful Ladies' Ready-to-Wear and Millinery departments and most up-to-date Men's Furnishings department and Ladies' accessory department.

Established close to a half century ago in the same location it now occupies, the New and Greater Kempner's of today stands as a monument to the foresight and faith of its founder. Its progressive business policy is a tribute to the late Ike Kempner, whose activities contributed much to the progress of Little Rock and Arkansas.

Today, Kempner's operates stores in Little Rock and Hot Springs and are appreciative of the privilege of having contributed to the progress and development of Arkansas.

Mississippi River
At Lowest Stage in
11 Years at Memphis

Memphis, Tenn. (P)—The Mississippi river today stood at its lowest level here in 11 years. The gauge showed .1 foot above the zero level, the lowest reading since September 15, 1925, when it was .6 feet below zero. With the "father of Waters" at such a low stage, shippers were having difficulties, and the U. S. district engineers kept dredge-boats working at top speed. Heavily loaded barges were forced to carry half loads over low points in the channel, doubling back for the other half load.

Sites for Markers
In Clark Selected

Arakelphia—Marking sites placed at several historical points in Clark county in the near future by the Centennial Commission. Sites selected for marking are the old Jacob Barkman farm and Indian trail near the Caddo river, four miles north of Arkadelphia; DeSoto Bluff, formerly called Big Bluff, on the Ouachita river, half a mile north of Arkadelphia, where DeSoto and his men are said to have camped after leaving Hot Springs in 1542, and the old salt mine two miles west of Arkadelphia, where salt was made for the troops during the War Between the States. Jacob Barkman and his family settled on the Caddo river in 1806, and this settlement was the first permanent white settlement in Clark county. It later became the first postoffice, the first courthouse and the first stage coach station in the county. His grandson, W. E. Barkman, is vice president of the Elk Horn Bank and Trust Company of Arkadelphia and another grandson is James S. Barkman of Little Rock. DeSoto Bluff, where the famous explorer and his men are supposed to have camped, has been a favorite picnic spot for Arkadelphia young people for years. It is close to the town and only a quarter mile from highway No. 67, but still retains its wild beauty. It overlooks one of the prettiest curves in the Ouachita river, and many trees in the vicinity are carved with initials, some of the dates of which go back many decades. College student organizations still hold many of their annual picnics there. The salt mines were first operated here in 1811 or 1812 by John Hemphill, but it is said that DeSoto bartered for salt with the Indians in this vicinity in 1542. The salt mines, as operated by John Hemphill, are said to have been the first commercial industry in the state of Arkansas. During the War Between the States the Confederacy had charge of the mines and manufactured salt for the Confederate army. Improved methods in manufacturing salt at New Orleans finally forced the Arkadelphia salt works to suspend.

Fresh Water Sponges Found In
Washington County Stream.

Special to the Gazette. 9-30-36 Fayetteville, Sept. 29.—Fresh water sponges, the first ever reported from Arkansas, have been found growing in the east fork of White river, near Elkins, by Dr. David Causey, professor of zoology in the University of Arkansas and Harold Eldson, graduate student, now principal of the Crawfordville High School. The sponge colonies were found on the under side of stones in shallow water. The flat branching colonies were a dirty white in color. The strongly spined skeletal spicules made the identification certain. Science Magazine says: "Although reported in recent years from such far apart localities as Russia, Germany, Turkestan and China, fresh water sponges appear to have been found in the United States only four times; twice in Illinois, once in Delaware and the present collection in Arkansas."

Much Interest in Arkansas
Mineral Exhibits.

Special to the Gazette. Oct. 6, 1936 Yellville, Oct. 5.—Natural resources of Arkansas, represented at the convention and exposition of the American Mining Congress held in Denver, Col. the past week, received much favorable comment from miners and industrialists throughout the country, it was said by J. H. Hand, who was in charge of the display and who represented Arkansas by appointment of Governor Futrell, on his return home tonight. The Arkansas exhibit was arranged by the Ozark Mine Owners League, of which Mr. Hand is manager and whose headquarters is at Yellville. The display was typical of Arkansas zinc deposits. Only one other Southern state was represented at the congress—Alabama, with Erskine Ramsey, Birmingham industrialist, attending. The largest attendance in the history of the congress was reported by Mr. Hand with about 2,000 mine operators and investors registered. While representation of gold, silver and copper held the lead, much interest was shown by industrialists in the possibilities of mining ventures in new fields which offer the same basis for industrial development. The premium quality of north Arkansas zinc ore placed on display won

admiration not only from mining men. Mr. Hand said, but also from publishers of the Denver Mining Record. A portion of the Arkansas exhibit was presented to the Record office for display, while the remainder was given to the University of Alabama. Mr. Hand, who served several years on the Board of Governors, Southern Division, of the Mining Congress, which held its 1930 convention in Little Rock, said that a healthy sentiment is being shown for mining investments that show evidence of merit, and that Arkansas, with its diversified mineral resources, reaching into about 50 counties, is in line for a strong play along development lines. Several new companies have come into the state during the past year, he added.

INCORPORATION MATTERS.

The following incorporation papers were filed in the secretary of state's office yesterday: The Silver Hollow Mines, Inc., of Rush, Marion county, articles of incorporation, capital stock, 2,500 shares without par value; H. C. Urschel, Loma P. Urschel and A. W. Bachman, incorporators. 10-4-36 Bear State Oil Company, Texarkana, articles of incorporation; capital stock, 10,000 shares with a par value of \$10 each; incorporators, M. D. K. Fitzwater, W. C. Medley, J. G. Cubage. Ohio Mining Corporation, Rush, Marion county; articles of incorporation; capital stock, 5,000 shares without par value; incorporators, H. C. Urschel, Loma P. Urschel and C. H. Watson. Arkansas Salvage Company, Inc., North Little Rock, articles of incorporation, capital stock, \$5,000; incorporators, Jim S. Porter, B. T. Jackson and E. L. Kirkham. Ioway Pearl Button Company, Muscatine, Ia., notice of entry into Arkansas, with an operating office at Brinkley, J. H. Lockwood of Brinkley, resident agent. The following corporations filed notices of dissolution or withdrawal: U-Drive-Em Corporation of Pine Bluff; F. Strauss & Son, Inc., of Little Rock; Cook County Mill and Lumber Company, of Chicago; Nashville Warehouse and Elevator Corporation, Nashville, Tenn. Colonial Baking Company of Little Rock filed notice of appointment of George M. Hunter of Little Rock as resident agent to take the place of N. Bayard Clinch.

Figures Fish,
Fur Income At
\$5,000,000

Arkansas's commercial fishing and trapping industries will bring approximately \$5,000,000 into the state during the fall and winter, Grady McCall, secretary of the Arkansas Game and Fish Commission, estimated yesterday. He said around \$3,000,000 worth of commercial fish, buffalo, cat, drum and carp, will be sold, mostly outside the state, between October 1 and March 15, and that \$2,000,000 worth of furs will be sold during and immediately following the trapping season, which will open December 1 and continue to January 31. Trappers will be allowed until February 10 to dispose of pelts. Hundreds of persons began working as commercial fishermen yesterday in the northeastern and southeastern sections of the state and Arkansas fish will be shipped to eastern markets in carlots during the next five months. Commercial fishermen are required to throw back fish under 16 inches long.

admission not only from mining men. Mr. Hand said, but also from publishers of the Denver Mining Record. A portion of the Arkansas exhibit was presented to the Record office for display, while the remainder was given to the University of Alabama. Mr. Hand, who served several years on the Board of Governors, Southern Division, of the Mining Congress, which held its 1930 convention in Little Rock, said that a healthy sentiment is being shown for mining investments that show evidence of merit, and that Arkansas, with its diversified mineral resources, reaching into about 50 counties, is in line for a strong play along development lines. Several new companies have come into the state during the past year, he added.

First Volume
Of Elevation
Survey Ready
Democrat 10-22-36
Entire Work to Contain
Nine Volumes on
Counties of State.

The first volume of a set of nine volumes containing data on 14,421 grade elevations in Arkansas has been completed under the direction of Dr. George C. Branner, state geologist, by WPA workers. Several months has been spent assembling the information which is based on surveys made over a period of years by the United States Coast and Geodetic Survey, the U. S. Geological Survey, United States army engineers, the Arkansas Geodetic Survey, railroad engineers, and other civil engineers in private work. The publication of the nine volumes will be completed by December 1, George A. Rogers, who has assembled the data with personnel from the WPA. The report when completed will be submitted to Gov. J. M. Futrell and copies will be available for distribution to interested agencies. The report combines into one unit all of the grade elevation data which is available from the various surveys and when completed detailed information will be available for each of the 75 counties in the state. Volume I, which has been completed, contains data on Clark, Calhoun, Columbia, Dallas, Hempstead, Lafayette, Little River, Miller, Nevada, Ouachita and Union counties all in South Arkansas. Volume II, which will be completed next week, will contain reports on Ashley, Bradley, Chicot, Desha and Drew counties. The rest of the state has been divided into sections with the following counties listed as follows: Volume III—Arkansas, Cleveland, Grant, Jefferson and Lincoln. Volume IV—Lee, Lonoke, Monroe, Phillips and Prairie. Volume V—Crittenden, Cross, Jackson, St. Francis and Woodruff. Volume VI—Clay, Craighead, Greene, Lawrence, Mississippi, Poinsett and Randolph. Volume VII—Baxter, Benton, Boone, Carroll, Cleburne, Crawford, Fulton, Independence, Izard, Madison, Marion, Newton, Searey, Sharp, Stone Van Buren, and Washington. Volume VIII—Conway, Faulkner, Franklin, Johnson, Logan, Pope, Sebastian and White. Volume IX—Garland, Hot Spring, Howard, Montgomery, Perry, Pike, Polk, Pulaski, Saline, Scott, Sevier, and Yell. A separate map is shown for each county with detailed information concerning each established elevation in the county. A graphic relief map of the entire state shows elevations of 2,000 feet and higher, and 500-foot variations down to 500 feet above sea level, and also elevations higher, and lower than 250 feet. The reports are mimeograph form, except for the larger maps and the cover, which were printed.

PLANS MARKERS
FOR MINERALS
Gazette 10-25-36

Locations of mineral resources of Arkansas will be marked for the convenience of visitors, Col. John R. Fordyce, of the Arkansas Centennial Commission, announced yesterday. Colonel Fordyce said that he had received suitable texts for the markers from Dr. George C. Branner, state geologist. Saline county will have a marker to Bauxite, from which metallic aluminum is made. It will be located on Highway 67 at the Log Cabin filling station near Bauxite. Magnet Cove, Hot Spring county, where 42 distinct mineral species have been found will be marked on Highway 270 near Cove creek bridge. The diamond mines of the state will be marked at Murfreesboro on Highway 27, 2 1-2 miles northwest of the diamond mines. Cinnabar mines will be marked on Highway 27 in Pike county, manganese on Highway 69 at Cushman, Independence county, and lead zinc on Highway 62 at Yellville, Yell county.

Second Volume on
Elevations Ready
Democrat 10-29-36

Dr. George C. Branner, state geologist, announced today that the second volume of a six-volume report on grade elevations in Arkansas has been completed by WPA employes who have assembled data from various surveys made by federal, state and private agencies in Arkansas. The project is being supervised by George A. Rogers and the information contained in Volume II relates to elevations of cities and towns and other points in Bradley, Chicot, Drew and Desha counties. The eight volumes will contain about 14,000 elevations.

Writes About Archaeology Of Arkansas River Valley

Dr. Henry Mace Payne Addresses
Civic Clubs at Rogers.

Mining Congress

Special to the Gazette. 4-15-31
Rogers, April 14.—Dr. Henry Mace Payne, consulting engineer to the American Mining Congress, delivered an address at a joint meeting of the Rogers Rotary and Kiwanis Clubs at noon today.
Dr. Payne's address was one of a series to be delivered in Northwest Arkansas in connection with an industrial survey by the state Chamber of Commerce. He was accompanied by Dudley V. Haddock, secretary of the state organization. His subject was "The Value of Payrolls."

The archaeology of the Arkansas river valley is the subject of a 200-page, illustrated book written by Warren King Moorehead, director of the Department of Archaeology, Phillips Academy, Andover, Mass., and published recently by the Yale University Press.

The author points out that his work is "in no sense a complete exposition of the archaeology of this great river valley, rather is it the purpose of the writer to indicate the importance of the field, and to suggest future and thorough exploration."

and pottery vessels and pipes found. A few of these have been preserved, but are in the hands of persons living at a distance.

"Thursday morning we went over to the Chickalah valley about 20 miles away. There, on the farm of Mr. Bonaparte Rutledge, is a site where Mr. Harkey of Belleville claims that he found skeletons and pottery vessels years ago. About half way between the towns of Belleville and Havana there is a site on the farm of Shelby Buckman, where numbers of implements in various stages of manufacture occur.

though the Bureau of Ethnology linguistic map includes this region under the area assigned to Siouan culture."

Several pages of the book are devoted to a study of the stone material found in the region of Fort Smith and Yell county. The author concludes that "it is clear that mound art—if that term is permissible—does not occupy the bulk of Arkansas drainage."

After leaving Yell county, the exploring party diverged northward into the mountainous country and there found a totally different culture from that existing to the southward. "In-



The queer-shaped artifacts at the left are chipped a xes and hoes typical of the region between Little Rock and Fort Smith. At the right are six specimens found by G. E. Berson in 1927 in an Indian grave on the banks of the Arkansas river 12 miles from Fort Smith.

by the large number of broken and burned stones, arrow and spear points, and pottery fragments. Village site debris is very heavy and extends into the soil a foot or more. On two sites near Havana in less than three days there were collected more than 500 chipped objects, some 20 larger tools and numerous pottery fragments."

Mr. Moorehead's field notes on this region are interesting:

"Mr. Jefferson Davis of Havana owns a farm on which are three village sites. These occupy points of land or slopes overhanging the Petit Jean valley. His plantation includes about 400 acres. It, and the Berry farm about two miles west of Havana, are the two largest sites in the neighborhood. It seems that there are cemeteries on each of the places, as local testimony is to the effect that bones have been plowed up, and that the bones were used for fertilizer. In 1888 he purchased a 166-acre plantation in Canada and Michigan, went into the lumber business in Markham, America, and after working in lumber camps in Canada and Michigan, returned to the United States in 1844. When but a youth he came to the United States, he was born in Kirk, Scotland, in 1800. Capt. Robert Dollar, largest owner of ocean vessels in the United States, of January, 1928."

Capt. Robert Dollar is Not a Captain. The curious case of Ling, 16-year-old Chinese boy, whose tears would flow from the outer corners of his eyes, came to the attention of the medical world through the eye clinic of the Peking Medical Union hospital, which treated him for an anomalous duct from the lacrimal gland, in January, 1923. The story of this case is contained in the American Journal of Ophthalmology, volume nine, page one.

The Outer Corners of His Eyes. The eastern part of the state are most distinct traces of prehistoric peoples. Their earthworks erected in varying

designs and for purposes suited to their mode of life are plainly discernible to the archaeologists as well as the casual observer.

Toltec, on the Cotton Belt railroad, is located on the old Gilbert Knapp plantation now owned by W. R. McLaughlin, who purchased it from the Knapps in 1888. On this plantation, composed mostly of rich black Arkansas bottom land, is a lake some three miles in circumference, known as Mounds Lake, which is either the line of what was a horseshoe bend in the Arkansas river, or the trace of a dead river. Mounds Lake is horseshoe shaped, covering a space of three miles

"Two or three miles southeast of Belleville is the farm of Mr. Sadler. He is an old Confederate soldier, and the writer had a most interesting chat with him. There is a site covering several acres on his farm from which many implements have been taken, including pipes. The soil is black and the surface covered with flint chips, broken pottery, hammerstones and so forth.

"On the Davis plantation the writer spent two and a half hours searching and secured about 157 specimens. There are small broken human bones scattered through the soil.

"The Berry plantation west of the town is probably the most interesting. There is a long ridge flanking Petit Jean stream distant a mile farther south. This ridge is intersected by a road, Mr. Berry's property being on the west side, and Mr. Walkup's plantation on the east side. Where the road cut through the brow of the hill skeletons were uncovered, and we discovered one protruding from the bank. Whole pottery has been found on the Berry place, and the village debris is thick.

"On the largest site, about two miles from Havana, and upon the second terrace, and at another site some three miles up-stream (both on Petit Jean creek) the writer dug a number of test holes, finding ashpits extending from one or two to three feet in depth. All sites appear to be prehistoric and up to the present time no glass beads or European objects have been discovered. Probably one should assign the occupation to members of Caddoan stock, al-

though it is distinct from the Great Plains culture." The difference, it is reported, is striking.
"Here we find instead of mound-building people, men of the hills who resorted to overhanging cliffs or caverns in limestone ledges and there made their homes."
The objects found and studied showed cruder workmanship than those of the lowlands, but "whether one should maintain that crudeness of form indicates greater age or lower culture, it is impossible to state with any degree of accuracy. Yet our opinion is that these primary forms indicate low cultural status."

There follows an extensive detailed comparison of the material left by the Bluff Dwellers and the artifacts found in the lowlands.

The remainder of the book is devoted to a study of the upper Arkansas river valley.
Reports of archaeologists reveal that bones, pottery and tools of prehistoric peoples of Arkansas are more abundant probably than in any other section of the United States.
Arkansas was once the happy hunting ground of the powerful Osages who occupied the country south of the Missouri river to the Red. The Quapaws, the strongest and most powerful of the nations, were scattered over nearly all portions of the state. The Cherokees, forced out of Georgia and the Carolinas, found a refuge in Arkansas territory. The Hitchitees were removed from the Chattahoochee river section to Arkansas. The Choctaws were moved west after the Cherokees. Of all the tribes connected with Arkansas, except the shadowy Toltecs, the Quapaws are thought to be the most ancient. They attained great power in the early part of the Eighteenth century. However, the Cherokees were the most highly civilized, mingling freely and intermarrying with the whites. A people of force and character, they established schools and printed books. These characteristics are in a measure applicable to the Chickasaws.

The Toltecs, according to the "Lincoln Library of Essential Information," were a cultured race of people who preceded the Aztecs into central Mexico. They were said to be the builders of the marvelous civilization of the Aztecs and were a wandering people, venturesome, and looking far to other lands of conquest. Mexican tradition tells of passage of numerous tribes from the north to the south across the country and of the establishment of powerful states. The Toltecs stand out boldly in their shadowy processions and accomplishment. They traveled extensively and were a commercial people who built cities in territories of their conquests. They were skillful potters, textile workers and great manipulators of metals. Traditions and cultures of the Toltecs are preserved by the Texcocoan people of Texcoco.

East of Toltec 30 or more miles on Lonoke prairie, according to facts established by Mr. Knapp, are mounds that apparently belong to the Toltec system which runs parallel to the Ar-

9932

Archeologist

Arkansas' Least-Long List, Ranging From No Golf Tees Are Turned, Rare

Just to Be Different, We Even Have Herd of Buffalo One of Few in "Wild" State

Democrat

By WILLIAM JOHNSON.

Every Arkansan knows, or should know by now, the matter having been expounded often enough, that his state is a heavy producer of cotton and timber. He probably also knows that Arkansas supplies the country with huge quantities of bauxite, oil, rice, strawberries, peaches and other useful articles of commerce. But the time may come in any Arkansan's life when he will need even more extensive information than that to enable him to squelch someone who speaks slightly of his state. Deplorable as the fact is, there are individuals so sunken in ignorance as to commit that offense. You meet them everywhere. And the law reading as it does, you can only protect yourself against the pests by packing around with you some withering data on the Wonder State's superiority.

Then, if you mention Arkansas' cotton and timber and rice, and are scoffed at, you can fix a steely eye on the scoffer and retort, for instance, in this manner: "Yeah; and did you know, Mister, that the country depends on Arkansas for all its choicest novaculite?" The chances are he will be mildly stunned by that question—a doubter of Arkansas' high standing would naturally be a man of limited knowledge whom novaculite would baffle. And while your skeptic is pawing around in the darkened recesses of his mind, trying to remember whether novaculite is a fish, or a vegetable, or a gem, you can proceed to finish him with a spirited recital on Arkansas' bentonite, pearls and pearl shell, diamonds, dogwood, buffaloes and—but that ought to "cork him up," as Huck Finn would express it.

Arkansas, out of rich resources, does, in all truth, produce an amazing variety of things useful and ornamental. And many of the raw products go to industries which few people know much about, even though they are returned to us in articles of daily need. Others take obscure by-paths of trade to romantic corners of the earth. Ginseng, produced in the Ozarks, and used by the Chinese for medicine, is an example of that line. Only an encyclopaedic mind could grasp all the story of Arkansas' production. It ministers to the necessities and comforts of every race and color of man. Industries from Little Rock to Hongkong are engaged daily in sawing, weaving, smelting, tincturing, grinding, polishing and otherwise processing the vast miscellany of commodities that Arkansas pours into the currents of manufacture and commerce. The entire picture is a picture of all the crafts and arts of civilization.

Some Lesser Known Products.
Let's confine our attention, however, to a few lesser-known items of the state's production. One is the novaculite which you flung at that hypothetical skeptic in Paragraph 2. Arkansas gets special mention for this material in the biggest and hardest books published on rocks and their uses—novaculite being a fine-grained, gritty stone. Its chief use is for whetstones, and the Ouachita mountains have the only true form of it that the United States possesses in deposits large enough to be quarried. Elsewhere, Nature just experimented in making novaculite. When she got her recipe perfected she came to Arkansas and cooked up a tremendous batch of the stuff, and tucked it away for future reference in the hills of Hot Spring, Garland, Montgomery and Polk counties. She figured folks could come to Arkansas for their whetstones.

Eastern industrial centers buy Arkansas novaculite in large amounts, though not as heavily as they did before chemists, the meddlers, discovered how to make composition stones for grinding and sharpening tools. The Arkansas stone is now used only for the finer grades of whetstones. And when it appears on the market in that form the price has taken one of those dizzy leaps which help to give the consuming public its harried look. Arkansas sells novaculite for from \$75 to \$80 a ton. That seems a nice figure to get for a rock which we have so plentifully that we use it in building roads. But if you were to buy back a ton of that rock in the form of whetstones it would cost you \$10,000 to \$15,000. This stamps as a canard the old story of a farmer who bought a carload of whetstones, "because they came cheaper that way." No farmer ever had so much money.

Bentonite names another highly useful article which nature conferred on Arkansas. This is a kind of clay, white and very fine-grained, formed through the ages by the decomposing of volcanic ash. It has more uses than the old-time housewife could find for a hair pin. Bentonite enters into candy, glue, pottery, explosives, soap, phonograph records, massage creams, roofing stuffs, and other products "too numerous to mention," as writers went to say before editors began to slay them for it. The market for so handy an article ought to be good, and is good, according to Dudley V. Haddock, secretary of the state chamber of commerce. Thus far, however, only one small deposit of high grade bentonite has been located and commercialized in Arkansas. This is about 14 miles south of Little Rock, on Highway 167. But hopes are entertained that new and more lavish deposits will be found. Much of the region between Little Rock and Texarkana, northwest and southeast of the Missouri Pacific Railroad, is said to carry the geological ear-marks of being a likely place for bentonite, and here and there in this area promising samples have been dug up.

Mr. Haddock urges any one who thinks he has a deposit of bentonite to send a sample to Dr. George C. Branner, state geologist, Little Rock. The commerce secretary says one feature of the real article, aside from whiteness and fineness of grain, is its ability to absorb water. He explains that it will take up several times its volume of water, swelling as it does so, and becoming a creamy, putty-like mass. One gathers from the talk about bentonite that a man who discovered a few acres of it in his back pasture would soon be financially fixed to thumb his nose at drouths and depressions.

The complete list of rocks, clays and minerals in Arkansas which have interesting and thrilling utilities runs to well-nigh inexhaustible length. Unfortunately, the market for many of these is small or abundantly supplied. Take for instance, the state's large deposits of manganese, one in Independence and Izard counties, and the other extending from Pulaski to Polk county. Manganese is a valuable metal. Industry uses it to toughen iron and steel and to make numerous alloys with copper, zinc and lead. But nature sowed manganese around the country pretty liberally, and the result is a production that keeps prices down to unexciting figures. During the World War the value of this metal soared, and Arkansas exchanged a good deal of it for cash. Owners of our manganese mines were happy then, and could be sold the most expensive makes of cars with little effort. Now the metal is cheap—as what commodity isn't?—and a manganese owner talks just as bitterly as a cotton grower does when someone mentions Mr. Hoover's stewardship of the nation. Nevertheless, a few billion tons of manganese tucked away in the soil is a comfortable possession. Some day it will bring to Arkansas a jingling stream of gold.

Nature's Cache.
And the same thing is true of many other minerals which nature cached in the state's hills and bluffs. Waiting there for industrial need are zinc, lead, iron, antimony, and what metal not, with a rich profusion of stones, clays, chalk and sand. The stones, clays and sand, as well as some of the minerals, are now a source of considerable income. But unless all the industrial prophets are wrong, the annual millions paid into the state's coffers at present by its mineral and rock riches, amount to only a good healthy sample of future revenue from

this source. E. M. McGary, consulting engineer of the Marquette Steel and Iron Company, said in Little Rock recently: "To my mind, south Missouri and north Arkansas constitute one of the greatest, if not the greatest mining fields in the entire world." That is a pleasant thing for Arkansans to ponder on when they feel the depression gnawing at their business vitals.

Meanwhile, we were to glance at some of the state's lesser-known activities. Mussel fishing for pearls and shells belongs in that group. It combines ordinary, back-aching toil with the excitement of playing a roulette wheel. You have to dredge up the mussels out of the river, and that is no mean task, as any experienced mussel dredger will assure you. In return for your labor you may get only the mussel shells, which are worth no fancy sum, though they have a fairly satisfactory market—going chiefly to button factories. But on the other hand, you may find in any mussel a pearl worth several hundred dollars, and perhaps more. One Arkansas pearl brought \$7,500. Hundreds have been sold for from \$300 to \$1,000 each.

Pearl Shell Harvest.
This industry is conducted on the White and Black rivers and some of their tributaries. There are factories to cut the shell into button or "button blanks" at Newport, Clarendon, DuVall's Bluff and other river cities. In 1926, the only year for which we have statistics, the harvest of pearl shell was valued at \$500,000, with an additional \$75,000 for pearls. This gave an average income of only \$200 each to the 2,400 fishermen engaged in the industry, but it was probably a side line for most of them. Besides, an imaginative man ought to get at least \$900 worth of excitement out of the constant possibility of snagging a large pearl.

The pearl fishers must be licensed, and their numbers have been increasing. As a result, the supply of mussels is falling off, though plans are now under way to restock the streams by artificial breeding, as is done with fish. No creature escapes the rampant acquisitiveness of man. The mussel, you would think, should have been safe—a fish "built," as the small boy said, "like a nut," and hiding itself under water. But not even when scientists named it lamelibranchiata Asiphonida was its life spared. People still ate it. And what was more devastating for the mussel, it got the foolish habit of coating a grain of sand that worked into its shell with a lustrous sheen that made it a desirable ornament in the eyes of human kind. Men began to destroy the mussel to get these coated sand grains—pearls. And the mussel added to its own insecurity by foolishly shining up the inside of its shell so that it would make attractive buttons. But probably no matter what the mussel had done, man would have found some use for it. Look how we've made a food out of spinach.

Diamond Production.
The diamond production of Arkansas is a subject with which most citizens of the state are familiar. Aeon ago, Nature, having some idle time on her hands, stirred up a seething volcanic fire covering about 52 acres in Pike county. She threw some form of carbon material into the blaze, melted it down, subjected it to great pressure, and let it crystallize in the isometric system—and if you don't believe it, look in the encyclopaedia. There the stuff lay until along in 1906, when John Huddleston, a farmer, who wasn't looking for any diamonds at the time, picked up some brilliant pebbles in a creek bottom. But diamonds the pebbles proved to be. And since then more than 20,000 diamonds, one weighing better than 40 karats, have been found in Pike and Howard counties. Experts give Arkansas diamonds a high rating, and the field is the only one in the United States. Never forget to fling that at any skeptic who belittles Arkansas. It shows what Providence has in mind for this state (Con. on Page 8, Ed. Sec.)

Arkansas' Least-Long List, Ranging From No Golf Tees Are Turned, Rare

I, who have loved the earth so much, shall have no fear at last
Of the cool brown earth, that will shelter me from every cruel blast;
My bed will be wrapped so sweetly round by the tender teeming mold
Which quickens anew the winged seeds of the primrose and marigold.

I, who have loved the yearly spring of budding leaf and stem,
Shall lay me down with no sad regret, nor wish a requiem;
Knowing my hands, that delved in the earth through life, in death's repose
May give white grace to a lily's cup, or fragrance to a rose.

Maud Chambliss



—providing diamonds, the symbol of wealth, for its people to wear. From diamonds to dogwood may seem like the proverbial step from the sublime to the ridiculous, except to people who have an eye for the beauty that the dogwood puts forth in the spring. Authoritative poets have ranked this above the flash and glitter of the diamond. But no matter—we are talking about the wood of the tree now. Did you know that it goes from Arkansas across the bounding billows to England, where it is prized for making the shuttles used in weaving cotton?—probably Arkansas cotton, too. Dogwood has a toughness which adapts it well to this purpose, we are told, and the supply of trees in merchantable size is too small for the demand. A carload of dogwood logs left Fayetteville only recently, bound for Liverpool. Trees not large enough for shuttle material are bought for making golf tees and other trinkets. It will be too bad if the commercial utility of the dogwood leads to its extirpation, for it is a glory of spring time that we cannot well spare.

But while that threat hovers over our landscape, the buffalo which once roamed Arkansas in thundering herds, and then was all but annihilated, is staging a mild come-back. Several small herds of buffalo now range the Ozarks. There is one of 11 head in Stilwell Park near Siloam Springs, and another of 10 head in the city park at Joplin. It is true, these lordly animals have no money value, unless to attract tourists, and that amounts to something important, but they do have a high sentimental value. Memories of old days and brave deeds hang about those shaggy survivors of the once vast herds of their kind that roamed the Wonder State. And it is good to keep alive the memories of free and spacious times. So far as buffaloes can help, the Ozarks have the largest herd to be found in the central Southwest.

Prospectors Opening Ancient Spanish Mine
Melbourne — Leo Farrington and associates are still working the old Spanish mine on Hell creek, near Sylamore, and have sunk a shaft to the first cave, and are making a drift to a point more advantageous for entering the lower cave, which, it has been decided, was the diggings opened by the Spaniards.

They have been working day and night shifts for nearly two months, and make use of the full 24 hours of each week day. The amount of labor required in working these rock formations is amazing. But the workers are confident in striking the payoff.

Tradition has it that the Spaniards, in the early history of the country, opened a mine here in which they found an unlimited amount of silver. Lead was also abundant, and some gold was found. It is said about 15 persons are connected with the present operation. Most of them live in New Mexico.

Talc B Found in Whetstone
Near Hot Springs.

Novaculite

ette. 7-26-29
July 25.—What appears to be a base suitable for talcum has been discovered in a vein of a whetstone quarry owned and operated by John C. Wolf on the northeast edge of this city.

Samples are being sent to the Little Rock office of the commissioner of mines, manufacture and agriculture, to the University of Arkansas Chemistry Department and to Washington for analyzing. The extent of the vein is not known, but apparently it is a large one. For several years whetstone taken from this mine has been shipped to Germany and to other foreign countries.

Ancient Indian Mines

Arkansas Chert Quarries Worked by the Early Tribes to Get Stones for Agricultural Implements and Weapons — Artisans Sometimes Toiled Many Years on Various Tools, Scientist Says, and Often Did Not Complete Them.

Nov. 6, 1932

By MARY ELISABETH OVERHOLT

Revival of interest in the legendary Spanish mine on Indian mountain two miles northeast of Hot Springs, has uncovered the history of numerous unsuccessful attempts to discover hidden treasures of gold supposed to have been left by the De Soto party, in the tunnels of ancient mines found on this mountain and in Magnet Cove, 12 miles east of Hot Springs.

These old mines have been worked every decade or so since pioneers first discovered them, but there is no record of any treasure being found, nor any evidences of Spanish occupation. The mines are the old novaculite quarries used by Indians hundreds of years ago in their search for the proper kind of stone to fashion hunting and agricultural implements.

Brittle varieties of stone, fitted for shaping into cutting and piercing implements and weapons, were in demand among all North American Indian tribes. Chert, in several of its forms, including novaculite, jasper, agate, and flint, also varieties of quartz, and some brittle eruptive rocks, were used. In North America, the best known beds of these brittle stone are found in Pennsylvania, Ohio, Georgia, Arkansas, and Oklahoma. In Missouri, iron ore in the form of hematite was mined, and red, yellow and white paint materials were obtained from the same source. These are the deepest mines known to have been made by North American Indians in one body, having been extensively tunneled to a depth of 25 feet or more. True, the novaculite quarries on Indian mountain are deeper than this in some places, but they differ much from the extensive tunneling of the iron mines of Missouri.

The Indian mountain quarry contains a variety of chert, which is found in Arkansas in beds of great thickness and undetermined horizontal extent. In some places the novaculite outcrops in ledges 10 to 20 feet high. Doubtless it was some of these outcrops that convinced the Indians they had found a suitable site for a quarry. The largest quarry shows an excavation, circular in form, 150 feet in diameter, and more than 25 feet deep. The surface rocks were removed, and then fires were built on the more solid rocks, water was thrown on them, causing the rocks to break. The use of fire in these operations is evident in some of these quarries, and smoked and burnt fragments of rock testify to the intense heat to which they were subjected.

The bed of novaculite was penetrated, and the limestone beneath worked away, leaving jutting arms of the novaculite. These were hammered off into various shapes and sizes, and the workable pieces were taken to the shops, which were usually only a short distance from the opening of the quarry. Here the slabs of flint were worked and the rough implement or weapon chiseled out. Many failures are recorded in these first shops. The pieces that worked out satisfactorily were moved on to finishing shops at some distance

from the quarry to be completed. Prof. W. H. Holmes, who has spent years in Indian research, said that some of these implements were made quite rapidly, the dressing of the flint artifacts taking comparatively little time, but that some such tools such as axes and blades that were ground down by sandstone, required more than an Indian's lifetime and were cherished possessions, handed down from father to son, and eagerly sought as booty by the enemy. Professor Holmes believes that the Indians rarely worked a piece through to completion at one time, but worked on several during the hours spent in the shop, returning to them later, or leaving their completion to another worker.

In Magnet Cove there is a belt of excavations, 300 to 600 feet wide, the workings following the general strike of the novaculite strata four miles southwest at several intervals, and now filled, but evi-

dently was worked 15 to 40 feet deep in beds that were 100 to 300 feet long. Some of the implements used in quarrying have been found. They are balls of stone, or natural boulders, and vary in size from 1½ inch in diameter to six or eight inches in diameter. As there are no other such stones in the region it is evident that they were brought from the bed of a stream at least two miles distant. In the extent of 1½ miles on the crest of the divide the aggregate quantity of material excavated was 100,000 cubic yards, according to estimates made by Prof. W. P. Jenny, who made a survey of this region.

The finding of iron tools and implements in one of these quarries caused much speculation a few years ago, and gave color to the ever-recurring tale of Spanish mining. Investigation proved them to be tools lost there by pioneers who were evidently bent on discovering what had been mined. It is doubtful if the Spanish party, which is believed to have camped at Hot Springs over winter, found these quarries.

Some students have tried to find evidence that would identify the tribe of Indians which carried on these extensive operations, but Professor Holmes believes the quarry was frequented by many tribes

and by Indians who carried the stone to their home camps hundreds of miles away, or who worked the quarries and sold or traded the manufactured articles to Indians from many tribes. The location made it an ideal ground for such an industry. The winters were warm and pleasant, there was an abundance of water, game, and places of shelter. The Indians believed in the curative properties of the hot springs, and it is not hard to imagine that this made it an especially favored camping site. The abundance of the novaculite, of splendid quality, made it one of the favored quarries of North America.

Arch-

tribal
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People Of The Rocks

Hundreds of Years Ago the Avoyell Indians From Louisiana Came to Arkansas and Mined Novaculite Near Hot Springs, Sending It to All Parts of the Country for Use by Other Tribes.

By JOHN R. FORDYCE

Bozette
Dec. 8, 1935



How strange it would seem today to see a big fleet of dugout canoes, manned by giant Indians and loaded with nothing but huge chunks of rock, floating down stream in Arkansas.

The first thought to come into the mind of a person witnessing such a spectacle would be: "What on earth are they going to do with those big rocks?" It would only be natural.

And yet, some 200 years ago such sights were not uncommon in our state. For the rock business was one of the biggest and best in the days before the white man made his appearance, and even for some time after he arrived.

However, it must be explained that this business was not carried on with just ordinary, everyday rocks. It was a highly specialized industry, dealing with only the unusually hard novaculite or flint rock, found profusely around Hot Springs. And its chief sellers were the Avoyells, or the leading traders of all the Indian tribes.

So valuable was this kind of rock, and so scarce in other sections, that the Avoyells traded with it all over the country. It became a sort of barter medium, acceptable in almost any tribe in exchange for other commodities. The mining and distribution of novaculite is one of the most interesting chapters in the history of Arkansas.

Many years ago when I began to climb and wander over the novaculite ridges of the hills around Hot Springs, called the zig-zag range, I was deeply interested in finding pits dug into the exposed rock ledges.

Around these pits I found a great quantity of broken rock chips and sometimes round stone balls made of a rock entirely different in texture. These chips would sometimes be piled up in two mounds about three feet apart, as if someone had been seated between them and pounded larger pieces and then thrown the chips first to one side and then to the other. Sometimes I found unfinished or broken arrow and spear heads, Indian knives and axes. This novaculite occurs in many colors, pure white, deep black, brick red, salmon pink and many shades between.

It was evident that these pits were made by the Indians, as they quarried out pieces of stone for their implements. In chemical composition this stone is almost pure

Eugene Sanson and his sister, Miss Margaret Sanson of near Alexandria, La., of Indian Descent, are shown working on a dug-out canoe with the same tool their grandfather used, an old "howell."

silica and it has a hardness of seven in a scale in which the diamond is rated as 10.

It is therefore quite a mystery how these people with no steel tools and no explosives could have broken off pieces from the ledges. Some grades of this novaculite are very much in demand as whetstones and it is quarried and shipped to various parts of the United States and to Europe.

Many of the quarrymen working here now are the grandsons of the men who first began this work more than 100 years ago. I have talked to some of them and asked their opinion on how the Indians could have carried on the work. They are of the opinion that the Indians must have built fires against the rock faces and then thrown water against the heated rock, causing it to crack off. They might also have driven wooden wedges into the seams until large chunks fell off. The quarrymen said that sometimes they had cleaned out these old pits and found beds of ashes in the bottom, which confirmed them in the opinion that fire had been used by the Indians.

The largest pits all seemed to be located near springs or small streams, which still further indicated that water was used.

There are many of these pits located all the way from Hot Springs to Oklahoma. It is evident that the Indian quarrying must have been going on for thousands of years, and perhaps by thousands of men.

It is evident that these old quarrymen must have come here at certain seasons and spent part of the time in this work. Perhaps a small tribe might have moved in for the summer and while some worked at the quarries, others hunted and may have taken the baths while others kept a lookout for enemies. When natural wealth was found the Indian was willing to let others share in it, especially when he had obtained all he wanted.

There are large pits near the Ouachita river, so it is evident that tribes who came up this river in their dugout canoes could have loaded them down with partially shaped pieces of novaculite and then car-

ried them down the river to their villages located in the alluvial country where there was no rock, out of which they could make their stone implements.

After I began to know more of Indians and their ways, I began to examine their old village sites with a view of determining whether or not they had used novaculite. I have seldom found a site where I could not find some novaculite chips, showing conclusively that the Indians who lived there had either been to Hot Springs or had traded with others who had.

I became very much interested in trying to find out how far from Hot Springs this novaculite had been carried. The Smithsonian Institution reported that specimens had been reported as far East as Virginia, as far South as the Gulf of Mexico and as far West as New Mexico. I have sent specimens of the novaculite to various museums over the United States.

In considering where the greater bulk of this rock could have gone, I took into account that when Hiram Abif Whittington first opened these quarries over 110 years ago, he built bargers and floated cargoes of the rock down to New Orleans, from which part of it was shipped to northern ports and to Europe. The Ouachita river was therefore the probable route which the Indians used and we can visualize fleets of dugout canoes loaded down with novaculite floating down to the villages of the great tribes of Indians who lived in Louisiana along the streams which either flowed into or out of the Ouachita river.

The historians of the de Soto expedition reported large villages and thousands of Indians living in this part of the world. When the French came into Louisiana they also reported finding large tribes. These tribes traded with one another. One tribe made bows out of a tree which grew in their part of the country, called the Bois d'Arc, as we sound it, bow-dock. Another tribe boiled the water from salt springs and made salt cakes which they traded for other things. Another tribe, called the Avoyells, were considered the

greatest traders of them all and supplied the newly arrived French colonists with cattle and horses which they got from the New Mexican Spaniards. No doubt they stole them from the Spaniards, but the French shut their eyes to this and said no doubt the Spaniards had had more than they needed anyway.

I consulted Dr. John R. Swanton of the Smithsonian Institution and he told me that the Avoyells were called the "people of the rocks" by the neighboring Indian tribes; that these Avoyells probably belonged to the Natchez Indian stock.

Last winter I attended a meeting of those interested in pre-history of the Indians at Louisiana State University at Baton Rouge. I read a paper on the de Soto route and told the meeting that this expedition, after it left Hot Springs, followed down the Ouachita river to a point opposite Natchez, Miss.

The Tensas river, the Ouachita river and a small stream called Little river join their waters and form the Black river. This Little river flows out of a large body of water called Lake Catahoula. There is high ground around this lake. I told the historians about the novaculite around Hot Springs and expressed the opinion that this material could have been carried down the river to the various villages which bordered these rivers in Louisiana.

V. H. Evans, who lives in Alexandria, was present and was much interested, and came to see me after the meeting. He said that if Dr. Swanton and I would stay over he would take us out to the shores of Lake Catahoula and show us that the old Indian village sites around there were littered with rock chips and also large rocks of a dense texture which might have been anvils or hammers. There is no novaculite rock source around that area. We remained over and went with him the next day.

The Sanson family lived here and became interested in our trip, gathering up some rock chips for us. They were novaculite and as I examined them I could easily see that they must have come from the quarries around Hot Springs. Later I exchanged specimens of rock with Mr. Sanson and his sister, Miss Margaret Sanson, and there is no doubt that the people of

rocks" sit down and lament because their trade was gone? They did not. They moved over on the Red river near Marks-ville and sent their warriors into far off New Mexico and proceeded to acquire a new trade commodity. They drove back great herds of cattle and horses and brought them back to Louisiana and traded them to the French colonists for guns, powder, lead and steel axes. They refused to lose their business acumen.

There is an interesting parallel in the trading of those early Indian days and that of today. The "people of the rocks" were from outside of Arkansas. They came into another state and took the natural resources out and capitalized on them. Today the same thing is happening. Interests from outside the state are coming in and utilizing our natural resources. It is something to think about.

the rocks once lived around Lake Catahoula.

The Sansons were making a dugout canoe of cypress log, using the same methods and even the same tool—a steel-handle, curved-edge adz called a "howell"—that their grandfather had used.

They are now making a dugout for me and when it is finished I am going to take it over to Hot Springs and try to learn to ride in it. It is said that you have to chew your gum with your front teeth to prevent it from turning over.

These old "people of the rocks" can teach us a useful lesson today. The French came into their country with steel spears and axes and guns. These things at once killed the demand for flint weapons and implements. But did the "people of the

Rare Relics of Prehistoric Race Found in Northeast Part of State



D. Rolland of Jonesboro, who directed many excavations in northeast Arkansas which resulted in the finding of rare relics of prehistoric races, is shown with part of his personal collection. The figures are of stone with eyes of tin or copper.

Sometime in the past ages many centuries ago a giant prehistoric man with rugged features and a protruding jawbone engaged in the art of sculpture. Out of native flint and sandstone, he crudely carved the images of various animals, pigs and water animals, and human masks, and decorated them with eyes of molten tin, copper or gold, and, sometimes he gave vent to his fancy and placed gold rings in their noses. What his tools were is not definitely known, but his crude productions portray the fact that his tools were very crude, perhaps stone instruments aided with the use of water and fire. Sharp flint hatchets and axes were used to cut trees and shape wood, and it is thought by archaeologists today that the thousands of cubic yards of flint taken from the ancient quarries recently explored in Arkansas and in Missouri were quarried with no implements but those chipped from stone.

Relics of that age, old pottery, arrowheads, axes and skeletons may be found in the lowlands of northeast Arkansas and Tennessee and in the foothills along White river.

The rarest and most unusual of these is a collection of carved or chipped images of animals found by D. Rolland of Jonesboro, Ark. These crude figures made of native stone, flint and sandstone were found about three miles south of the town of Jonesboro. Large trees had grown on the site above them, and the roots protruding down among them made excavating difficult. But the determined archaeologist, persistent in his work, kept digging until he unearthed a very rare collection. Rumors and news stories were circulated about these queer figures of ancient art, the Babcock museum of Little Rock bought the collection, and specimens were sent to the Smithsonian Institution where they were pronounced very rare.

Keeps at Work

Though he had received quite a sum for that collection, Mr. Rolland kept at work and soon unearthed other specimens quite as valuable as the first collection. These he sold to a museum in Mississippi, then continued his excavating. Now he has another collection quite as valuable as either of the other two. Human masks and small images of people take first place, but the figures of various animals are very natural, while stone trays, bowls and pestles are well made and well preserved. Eyes of molten metal, tin, copper and gold portray the fact that even very ancient men knew something about the mining and use of metals. Human bones found with the sculpture are enormous in size and impress one with the image of a man of giant stature, eight feet or more in height.

Mr. Rolland is a rather peculiar and unusual character. Living alone in a hermit shack in the outskirts of North Jonesboro, he has spent his lifetime in archaeological research and excavating. Though he has denied himself the luxuries of life and strenuously

labored, digging up mounds and other unique spots of the earth's surface, Mr. Rolland may consider that he has been amply paid. The collections he has unearthed are indeed archaeological treasures and are said to be the only species of their kind unearthed in this region. According to archaeologists of the Smithsonian Institution, they are at least 4,000 years old. Since the mound builders were in existence until about 2,000 years ago, this display of rude art is probably specimens of their handicraft. But since we do not know from whence the mound builders came, how long they remained, or their ultimate fate, we cannot affirm that this is their work.

Evidence of these prehistoric men, many in number, and giants in stature, is found in the caves in the mountains and in mounds in the valleys. Many of these mounds found in northeast Arkansas and Tennessee contain graves of stones set on edge. The simplest of these have six stone slabs, two on the sides, two at the ends, and one on the top and one on the bottom. These graves are found one to a mound or many to a mound, ranged one above another. The skeletons in the upper graves are found buried full length, but those in the lower graves are short and square and the bones in them are cleaned and piled in heaps. It was one of these mounds that Mr. Rolland discovered his rare collections.

Inhabitants Were Skilled

Scientists have little information concerning the civilization of that era preceding the Indian, but it is known that the race of men inhabiting the region at that time were more skilled in art and industry than their successors, the Indians.

Varied articles found along White river where they have been unearthed by the flooded conditions of the river and in the St. Francis region portray a superior skill in painting as well as in pottery. Vessels of a composition of pulverized mussel shell and clay, artistically colored with various shades of stain or paint, probably made of bark or vegetable juices, have been unearthed all along White river. In some instances, different colors of clay seem to have been worked into various designs, and, altogether, the effect is quite beautiful. Extensive excavating sponsored by Dr. Dellinger of the University of Arkansas has unearthed several rare relics of this art and quite a collection has been added to the university museum only recently.

Sculptured objects such as Mr. Rolland has unearthed are very rare and little evidence of the art of molding has been found, but Ollie Schratz of Newport has a very unique relic of this art. It is the very exact likeness of a squirrel head and neck with a nut clamped between its jaws. A durr was used in the molding.

One of the rarest displays of that ancient civilization are the hieroglyphics and pictographs found in the White river section of north central Arkansas. Along Salado creek near Batesville, and on the rocks of Caldwell mountain and the hillside above Suit's

Spring near Sulphur Rock in Independence county, on the face of Penter's Bluff overlooking White river in Izard county, and along

Strawberry creek in Sharp county, are magnificent displays of this art. These pictures cut in rock take the form of crudely drawn animals or animal heads; varied round figures, some like wheels and some like ancient figures of the sun; squares which are divided and subdivided; and figures resembling the tracks of birds, people and animals. One of the rarest of these is a huge human track found near Calico Rock and placed in the Missouri Pacific museum in St. Louis. The pictures cut on flat rocks on the ground are partly covered with dirt and indistinct. These carvings are scattered about over the mountain sides or in the creek beds, as though the crude artists might have engaged in carving and drawing as a pastime pleasure. In many instances, the rough figures are so weathered and marred that they seem almost like the formations caused by weathering forces, but many of them may be plainly seen.

Many Quarries Found

That the ancient American engaged in the mining is evidenced in the old novaculite quarries found on Indian mountain three miles from Hot Springs and in Magnet Cove, 12 miles east of Hot Springs. These mines were worked hundreds of years ago in a search

for the proper kinds of stone to be fashioned into hunting and agricultural implements. Brittle varieties of stone fitted for shaping into cutting and piercing implements and weapons were in demand, and chert in several forms, including novaculite, jasper, agate and flint, also varieties of quartz and some brittle eruptive rocks were used. In Arkansas, great amounts of these brittle rocks were found, and in Missouri, iron ore in the form of hemalite was mined, and red, yellow and white paint materials were obtained.

The largest quarry in Arkansas shows an excavation, circular in form, 150 feet in diameter and more than 25 feet deep. The surface rocks were removed and fires were built on the solid rocks, water was then thrown on them, causing the rocks to break.

Smoked and burnt fragments of rock testify to the intense heat to which they were subjected. The bed of novaculite was penetrated, and the limestone beneath worked away, leaving jutting arms of the novaculite. Those were hammered off into various shapes and sizes, and the workable pieces were taken into shops where rough implements or weapons were chiseled out. These pieces were then taken to finishing shops where, according to scientists, some of them were quickly made into finished implements, while some tools such as polished axes and knives were ground down with sandstone, requiring more than one man's lifetime. These were cherished possessions handed down from father to son and eagerly sought by the

enemy as booty.

In the Magnet Cove area, the workings follow a streak 300 to 600 feet wide and 15 to 40 feet deep. Some of the quarrying instruments which have been found are balls of stone, or natural boulders, varying in size from one and one half inches in diameter to six or eight inches in diameter. The mines in Missouri are not so deep as those in Arkansas, but their tunnels are more extensive.

The average modern man, finding these ancient weapons of stone, old pottery and carved pictures usually thinks of them only as landmarks of ancient treasures, but train ethnologists and archaeologists of the Bureau of American Ethnology and other institutions find in the study of these old relics a vast field for scientific research. According to Dr. N. C. Nelson of the American Museum of Natural History, the pictographs found in Arkansas are the only trace of that art in this country.

INDIAN MOUND VAULT YIELDS MANY PEARLS

Jack Reed Says Authorities Inform Him Discovery May Revolutionize History Of Western Continent

Fayetteville, Ark., May 31.—(Special)—An underground treasure vault found in the famous Indian mound at Spiro, Okla., has yielded more than 100,000 pearls of immense value, as well as relics of such importance that they might revolutionize the history of the Western continent, Jack Reed, oil man who has charge of the treasure, revealed here Sunday.

The pearls are not of the soft water variety frequently found in Southwestern mounds, but are sea pearls, known in jewelers' terms as oriental pearls because of their perfect size and texture, according to authorities' statements to Reed.

Relics found in the subterranean tomb might have the "utmost bearing" on the pre-Columbian history of America, Reed said he was told by authorities. The treasure not only indicates that a race far superior to the Indian lived in America before the arrival of Columbus, but also might open a new chapter in the history of Christianity, it was learned.

Publication Rights Sold

Publication rights of the discovery of the tomb's treasure have been sold by Reed to the magazine "Fortune," the weekly newsmagazine "Time," and "The March of Time," radio and screen feature, all of which are controlled by the same interests.

The "best experts in America" pronounced the pearls as genuine oriental pearls, according to Reed, and some of the authorities believe they came from the Persian gulf. Practically everything in the mound came from the sea, although the mound is approximately 700 miles from any large body of water, he pointed out.

Reed also quoted the experts as saying that the pearls were drilled with a metallic drill unknown to Indians in the past, and in a manner which proved the driller had a knowledge of geometry. Carvings and engravings on other articles found in the mound are of such nature that museum authorities who have viewed them believe that time will be required to classify the civilization, Reed said. The carvings are of supremely superior workmanship.

Vault Found by Youths

Artifacts shown by Reed to experts at Fordham university, the American Museum of Natural History in New York, Georgetown university and the Smithsonian institute were pronounced by the authorities as "finds of tremendous importance," Reed said.

Reed said he was unable to estimate the total value of the pearls, which are in his possession and in which he owns one-third interest. His pearls are said to be one of the largest collections of oriental pearls in existence, being larger than collections of even the richest Asiatics. Three thousand pearls owned by a Hindu recently were sold for \$500,000, Reed learned.

The treasure vault was discovered several months ago by two youths who had been making excavations in the Indian mound for three years. The vault, 30 feet beneath the mound's surface, was enclosed by large square cedar logs.

Reed is convinced personally that the treasure he controls may be one which was sought by De Soto and Coronado in 1541.

University Leases Mounds

The University of Oklahoma and the Oklahoma Historical society are lessors of a group of mounds near Spiro, including the famous "Spiro mound." The university and historical society submitted a \$600 bid for leasing the mounds, which was accepted May 8 in Le Flore county court.

In May, 1935, the legislature passed a law prohibiting excavations in prehistoric mounds for commercial purposes. Information charges were filed against eight men in January, 1936, and against one woman on May 4, 1936, for alleged illegal digging in the mounds.

Dr. Forrest E. Clements, head of the university's department of anthropology, was instrumental in filing the charges and in submitting the successful bids for leasing the mounds.

Specimens of this collection on display in Arkansas Geological Survey.

Arkansas's Original Temperance Tribe

Magette 7-19-1936

By TOM SHIRAS

The Osage Indians Were the Largest Race Ever to Inhabit This State. They Abhorred the Familiar "Fire Water."

Standing on the fire-baked and blackened earth, caused by old Indian campfires, on the south bank of White river at the mouth of Sylamore creek in Stone county, one can build a rather complete mental picture of the lives and habits of the largest race of people on the North American continent, who once inhabited the White river country. This mental picture is drawn into the sharp lines of reality by the disintegrating skeletons plowed up in the fields or found in caves, weapons and implements used in their daily lives, and by delving into the dusty archives of aborigine history.

Many large skeletons have been excavated or plowed up in the fields bordering the White river, and on creeks. Some have been found in caves and rock houses along these streams. Farmers have thought they were the remains of a race of pre-historic giants who once inhabited this section. No archeologist had been called in to pass an opinion.

One of the most complete skeletons of these large people was excavated a few years ago, in the cave, at Cave City. The man who draped its frame must have been between seven and eight feet high. Three other skeletons were unearthed at the same time but were not so large. Many other human and animal bones, as well as arrow heads and other stone weapons and implements were found during the same excavation.

The huge skeleton brought up the old argument about the race of pre-historic giants, and those who held to this theory

had plenty of evidence. They were right in their deduction, except that these people were not pre-historic, but much more recent. The big skeletons were the remains of Osage Indian braves. The average man of today, standing beside the average Osage brave who lived in the upper White river country, say 150 years ago, would be able in many instances to walk under the

Indian brave's outstretched arm without stooping.

Searching for information about this race of giants who once inhabited the White river country, the writer read an account of the Osage tribe in the annual report of the Smithsonian Institution, published in 1886. This volume was devoted largely to the George Gatlin Indian gallery. George Gatlin was one of the early students of the life of the American Indians, and his remarks about the Osage Indians, made nearly a century ago, throw

much light on this big race of people, who lived in what is now Arkansas.

Dwelling on the Osage males, whose skeletons are now frequently being plowed up in fields along the White river, he says: "The Osages are the tallest men on the continent, most of them being over six feet in stature, and many of them seven. This tribe shave the head, leaving a small tuft on the top which they call the scalp-lock."

Speaking of one behemoth of the tribe, Tchong-tas-sab-bee, the Black Hawk, second chief of the Osages, Mr. Gatlin said: "This dignitary, who is blind in the left eye is one of the most conspicuous figures in the whole country, rendered so by his size, as well as by his extraordinary life. His height is over seven feet and his limbs full and rather fat. He would weigh, I judge between 250 and 300 pounds."

As races go, the Osage Indians were rather a decent race of people. Until they became mixed up with the white man, they were a powerful and warlike tribe.

Writing in 1843 Gatlin said, "At the present time thier case is quite different. They have been repeatedly moved and jostled about from the headwaters of the White river, and even from the shores of the Mississippi, to the headwaters of the Arkansas, Grand and Neosho rivers, where they are now located.

In speaking of the temperance of the Osages Gatlin said: "One admirable trait in their character is worthy of remark, viz, their aversion to ardent spirits. Such is their abhorrence of the 'fire-water,' as they term it, that they cannot be induced to drink it. This may be thought strange but it is nevertheless true. It is generally supposed that all Indians are passionately fond of it, those particularly who are brought more immediately into contact with the whites. We note this as an exception to the general rule."

The Osages had a code of honor, as regards to personal property. Under certain conditions they were as honest as the proverbial "day is long," but under other conditions they were thieves. Commenting on this dual code, Mr. Gatlin says:

"The Osages possess a great passion for thieving, which they gratify upon every occasion; and like the Spartans, they deem it one of the attributes of a great man to pilfer from his neighbor or friend and avoid detection. But, anything placed in their possession they will take the best care of and defend with their lives. When called upon it will be restored, but the next instant they will steal it, if they can do so without detection."

During the latter part of the Osage occupation in North Arkansas, they lived in wigwams in the bottoms along the rivers and creeks. From the old occupation signs at Sylamore, in Stone county, the village there was one of the largest on White river. In their earlier days, there is little doubt that they inhabited the same caves that once housed the bluff dwellers, or "rock shelter" people, who were the first known inhabitants of the hills. Excavations as three cultures occupied them at different times. The Osages were probably the last to use them, which accounts for the shallow depth at which the huge skeleton was found in the Cave City cave.



Osage axes and war clubs.



—From Smithsonian Institution Reports.

Tchong-tas-sab-bee, the Black Hawk, second chief of the Osages, who was seven feet tall, weighing 300 pounds.

Engineering Crews to Determine True North in State's Counties

Engineering crews will be sent into each county of the state to establish, or re-establish "true north directions," to be used as a guide for surveyors in determining the exact boundary lines, it was announced today by Dr. George Branner, state geologist, who said that the WPA state office has approved such a project.

Monuments designating the true north lines will be set up in each county seat. Dr. Branner also announced that R. C. Limerick of the state WPA office has approved a project for completing topographical surveys in the vicinity of England and Lonoke covering about 500 square miles.

Another project calls for re-surveying of about 122 miles of lines previously surveyed by the United States Geodetic survey in three sections of the state. The projects will provide employment for 45 men and the personnel for the work has been selected. Work is to start within a few days and probably will require several months for completion.

Topographical maps

'True North' to Be Indicated in Each County

Dr. George C. Branner, state geologist, announced yesterday that a new WPA project sponsored by the Geological Department to establish "true north" directions in each county has been approved and that engineers will begin work on the project soon. A stone marker, designating true north, will be set up in each county seat, probably on the courthouse lawn.

A project to complete topographical surveys in an area covering about 500 square miles in Lonoke county between England and Lonoke and east of those towns has been approved. A third project calls for re-surveying of about 122 miles of level lines previously surveyed by the United States Coast and Geodetic Survey. About 45 persons have been selected to do the work, all except supervisors and technicians coming from the WPA rolls. Several months will be required to complete the projects, Dr. Branner said.

Report on Test Lake Created in Faulkner County Received

A report received yesterday by Dr. George C. Branner, state geologist, from the federal Soil Conservation Service, showed that 176.7 cubic feet of soil per acre was washed into a test lake created by construction of a dam built below the junction of two small streams which empty into Cadron creek, 22 miles north of Conway. The lake contains 37 acres and the watershed contains about 2,662 acres. The lake was constructed as an experiment to determine the rate of sedimentation and the extent of soil erosion. The report showed

ed that 8.8 tons of sediment had accumulated in the lake since it was constructed.

Bureau Recommending Greater Oil Output

Washington (UP)—The Bureau of Mines announced Saturday it had recommended a daily average production of crude oil at 2,930,300 barrels for December, 60,000 barrels higher than the November recommendation.

The bureau said the daily average production of crude petroleum during the five weeks ending November 7 was about 3,067,000 barrels, or about 35,000 barrels greater than September production. Average withdrawal from domestic crude stocks during this period was about 119,000 barrels daily, indicating a daily demand of 3,186,000.

Bureau recommendations for six leading producing states for December: Texas 1,145,000; Oklahoma 567,000; California 553,400; Louisiana 204,800; Kansas, 155,900; Arkansas, 26,800.

Tests Made at Lake Chicot

Democrat 11-18-36
Federal Engineers Work on Plans for Proposed Seawall.

Lake Village—Government engineers have put a crew of 40 men to work at this place, sounding Lake Chicot and making earth tests below the water level of the lake, with a view to determining the feasibility of a sea-wall in front of Lake Village. This wall has been proposed as a part of the Mississippi river spillway project.

The testing crew will drill underneath Lake Chicot to a depth of 100 feet to ascertain the earth structure beneath the water.

Local people have been advised that several alternate plans for this sector of the spillway are being considered by the engineers. It is said that so far none of these plans is other than tentative and that the government engineers will make no final recommendation until they have made a thorough study of local conditions, and probably then only after consultation with Lake Village property owners.

One of the plans said to be under consideration calls for a levee on the east side of Lake Chicot, opposite the town of Lake Village.

Appraisers and survey crews are also at work in this county gathering data and information which will be submitted to the engineers.

Flood Control

Suit Against Fuel Plant Is Dismissed

Dem. 11-21-36
Fort Smith (AP)—The Dixie Modern Fuel Company's briquette plant operated today under a chancery court decision which dismissed a suit seeking to close it. Chancellor C. M. Wofford dismissed yesterday a suit for an injunction brought by 76 Fort Smith residents who charged coal dust from the plant injured their health and damaged their property. They also asked \$228,000 damages.

The chancellor ruled testimony did not show whether the dust was from the briquette plant or other plants in the vicinity.

Rare Indian Blood Treaty Found

By WPA Workers
Gazette 11-21-36
Washington, Nov. 20 (AP)—The WPA writers' project claimed credit today for unearthing the only Indian blood treaty known to exist. Signed in their own blood by 10 tribal chiefs of the Sioux, the treaty was made with three white men—who signed in ink.

Officials said the paper—"a treaty of peace and friendship made and consummated by William Clark, Marian Edwards and Auguste Chouteau granting plenipotentiary rights by the United States to the Sioux tribe"—was probably signed as early as 1830. It was found by North Dakota researchers in an unclaimed safe deposit box.