The Manufacture of Artificial Rock a New Industry for the South.

University, Va., August 17.

Editor Manufacturers Record:

I have read with interest the article appearing in the MANUFACTURERS RECORD of August 12, dealing with "Another Source of Wealth for the South." Dr. J. S. Grasty, the author of the article, has ably presented the underlying conditions of an "infant industry" that promises to become an industry of magnitude in the near future.

The manufacture of artificial rock has been pursued successfully for many years in states where an abundance of hard rocks abound. But in the Coastal Plain, which occupies a large percentage of the area of the South, the manufacture of artificial rock has been essentially limited to the making of brick and concrete blocks. While the manufacture of these products has long been an important industry in the Coastal Plain states, yet due to the absence of hard rocks in most of the Plain there has been no material satisfactory for highway construction and railroad ballast. As a result materials have had to be transported long distances by rail to many localities, and in other places sand, gravel and cinders have been utilized. Slag and clinker, formed by burning clay, will serve admirably for these purposes.

As pointed out by Dr. Grasty, the manufacture of slag and clinker may be carried out readily and cheaply in northeastern Louisiana because of the presence of thick clay deposits and of an abundance of natural gas. However, extensive clay deposits, probably as suitable for the manufacture of slag and clinker, exist in all of the Coastal Plain states, and while gas is not available in many places for burning clays yet, methods employing incineration with the utilization of other fuels ought not to be difficult to devise.

I have watched with interest the experimental stages in the development of the process Dr. Grasty has outlined in his article and I feel confident that the industry, which promises soon to be firmly established, will mean much to Louisiana and other Southern states.

ALBERT W. GILES,

Professor of Geology, University of Arkansas.
Formerly Professor of Geology, University of Virginia, and State Geologist of Virginia.

Ceramic Industry Is Cited as O

Vast and Varied Deposits of Commercial Clay in Ark... ous Possibilities to Capital Disposed to "Take a Ch...

Democrat
6/10/28

Plans Survey to Determine Material Best Suited for Commercial Uses

IN LINE with Judge Mann's industrial development solution of Arkansas' pressing economic problems, Dr. George C. Branner, state geologist, offers an interesting and plausible suggestion. It concerns the development of new industries around the vast and varied deposits of commercial clays which now lie virtually untouched for want of intelligent initiative and capital disposed to "take a chance" while other states with less favorable opportunities are reaping enormous returns in this promising field.

The jurist presented a significant and challenging array of facts tending to show that there can be no sound progress and prosperity for Arkansas as long as our present unfavorable trade balance continues, and that the only hope of relief lies in the direction of industrial development with its promise of substantial population increase. He cited official figures showing that our imports exceed our exports by more than $54,000,000 annually, and declared that Arkansas was "getting by" on capital borrowed from other states on public bond issues.

The geologist is persuaded, after making a careful analysis of the situation, that the unfavorable balance in trade would be materially reduced if the clay deposits of Arkansas were utilized to the full limit of their possibilities. He believes, in fact, that the manufacture of ceramic products is one of our most logical and promising fields for industrial development, pointing to Ohio, with an annual output of clay products valued at close to $100,000,000, as tangible evidence of the rich possibilities that lie in the manufacture of the almost innumerable commodities that have clay as their base.

Ohio's long list of clay products includes drain tile, fire proofing, table ware, sewer pipe, porcelain plumbing fixtures, flower pots, faience tile, floor and wall tile, stoneware, chimney tops and what not, whereas the clay products of Arkansas are limited at the present time to brick, hollow building tile, drain tile and a small amount of pottery, despite the fact that clays suitable for all purposes are found in abundance in this state.

"There is practically nothing in the line of clay products that we are not in a favorable position to manufacture," Dr. Branner declared. "We have almost unlimited quantities of clays for every purpose in close proximity to railroads and natural gas lines, and with these three essentials assured—raw material, fuel and transportation—I can see no reason why many of the products we now import from other states could not be manufactured profitably and big outside markets developed as well. I believe it is high time for us to start something along this line before other states 'beat us to it.' The possibilities are here and it is up to us to develop them along sound and intelligent lines."

Survey Is Planned.

To this end the state geologist is laying plans for a comprehensive survey of the commercial clays of Arkansas, with emphasis on the deposits that are most favorably situated and chemically suitable for industrial purposes. He is now seeking a competent ceramic engineer to take charge of the work which will start as soon as a properly qualified expert can be located. Two young graduates have already been tentatively employed to assist in the work. Both are about to complete courses in ceramic engineering, one at Ohio State University, the other at the University of Illinois. Having no such department, the University of Arkansas was not in a position to furnish men with the required training.

The aim of the survey will be to make a complete collection of clays that occur in adequate quantities in the vicinity of railroad lines in localities which offer a suitable fuel supply such as natural gas and cheap coal, with special regard to the former, which is considered the ideal fuel for clay burning the supply is plentiful and cheap. The report will afford definite and reliable information on the distribution, quantity and relative suitability for the various uses to which clay is put. Specimens of all favorably located deposits will be submitted to laboratory tests, the results of which would furnish a valuable guide to future development.

The need for a report of this kind has been keenly felt for many years, according to Dr. Branner. Numerous inquiries regarding the commercial possibilities of the clays of Arkansas are received, but the department is seldom able to answer them fully and specifically because much essential information is lacking the reports now available. The last general report on the subject was written by Dr. John C. Branner, father and predecessor of the present state geologist, and published by the United States Geological Survey in 1908. This report was not based on detailed work, funds for its preparation having been limited, and it lacks much information essential for the guidance of future development. Moreover, modern chemistry has discovered methods of handling to good advantage grades of clay that were regarded as of little or no value at the time the elder Branner prepared his report.

Only Brick and Tile Now Made.

Thus far the development of the ceramic industry in Arkansas has been largely confined to the manufacture of brick and building tile. In this field Arkansas stands out rather conspicuously. The largest producer is the Acme Brick Company, which operates five plants in this state, manufacturing face brick, fire brick, common brick, hollow building tile and drain tile for agricultural use. The face brick made at the Perla plant of this company is famous for its fine quality. It is advertised in trade papers of national circulation and is in demand throughout the United States. In recent months large orders have been shipped to Albany, N. Y., Seattle, Wash., and Jacksonville, Fla., to mention only a few of the many widely scattered points where Arkansas brick has successfully competed with other big manufacturers. One of the Perla plants is said to be the largest "light-burning" brick factory in the world.

Thus the situation that existed 10 years ago, when Arkansas was almost entirely dependent on outside sources for its face brick, has been reversed, and the state now exports this commodity extensively. The face brick that went into construction of the A. O. U. W. building came from a Pennsylvania plant, there being no Arkansas concern capable of filling the requirements at that time. Arkansas would still have been importing its face brick but for the vision and initiative of a group of men who saw an opportunity and grasped it. Arkansas is still importing other clay products that could be produced equally well at home because these attractive opportunities have been ignored.

For while this state manufactures all the brick it uses and more, the story is quite different when it comes to floor and wall tile, stoneware, tableware, terra cotta and the long list of other ceramic products for the manufacture of which the clays of Arkansas are well suited. According to Guy Dickinson, vice president and local manager of the Acme Brick Company, an excellent grade of terra cotta for building purposes could be made from certain clays of Hot Spring county which occur in almost inexhaustible quantities; the paleozoic shales of the Arkansas valley would make good floor and wall tile, and Fort Smith would make an ideal location for such a plant by virtue of its cheap natural gas and transportation facilities.

A Terra Cotta Plant.

"There are only a few terra cotta plants in the United States," he said, "and it is not unreasonable to assume that an Arkansas plant could compete successfully over a wide surrounding territory. There are few standard sizes, most of it has to be made to order, making it rather an expensive product when used for building purposes. Its manufacture demands highly skilled labor and costly machinery, but nevertheless I am inclined to believe that an expert analysis would reveal a promising opportunity for Arkansas in this line."

But the story goes much farther than the production of building materials. It covers an astonishing number of other commodities which also have clays such as are found in Arkansas as their base. There is tableware, for one thing. Last year Arkansas imported tableware valued at close to $2,000,000, much of which could have been made from raw materials found at home. The possibilities of our clays cover virtually the whole range of pottery, with the possible exception of the finest grades of chinaware.

There are no figures available on imports of porcelain plumbing fixtures and electrical appliances, but the total would doubtless be an imposing one which would swell the unfavorable trade balance quite materially if the figures were known.

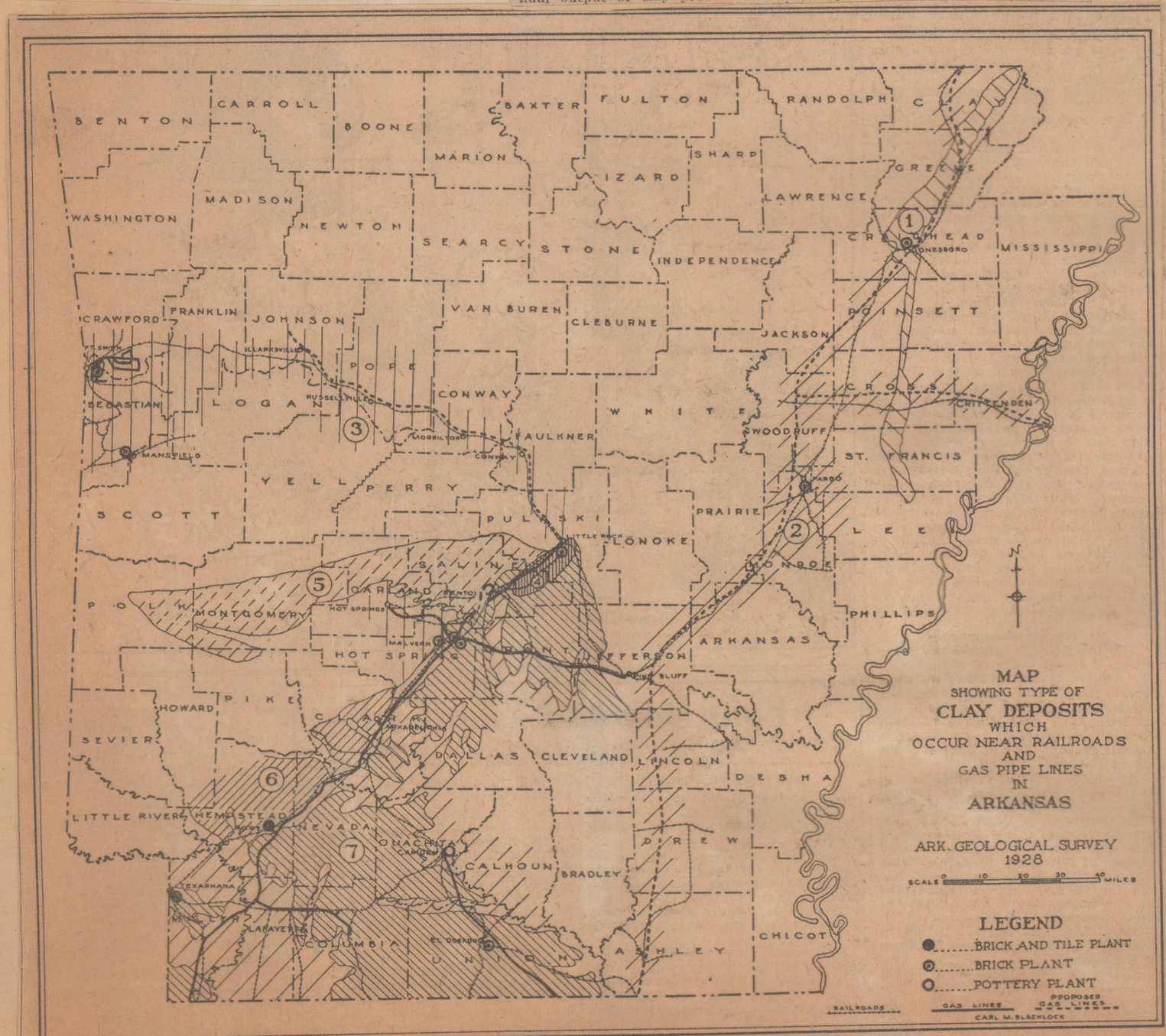
The states that rank as the largest producers of ceramic products are Illinois, New Jersey, Ohio and Pennsylvania. Missouri, California and New York are also big producers, especially of brick and tile. To make a few comparisons: Ohio, which is by far the largest producer of clay products, shows an annual production valued at approximately $98,000,000 against a total of $1,698,000 for Arkansas. In Ohio there were 393 clay product plants in operation in 1925, as compared with 14 for Arkansas. In Ohio the value of the clay products other than brick and tile amounted to $40,389,000; in Arkansas their value was so small that the figure was included in the "undistributed" figure for the whole United States.

A significant feature of the government report from which these figures were taken is that the clay products production of adjacent states such as Oklahoma, Louisiana and Mississippi is negligible in the pottery line, indicating good possibilities for Arkansas to build up a large trade territory close to its borders, not to mention the home market.

Other Clay Product Plants.

The only other clay products plants in Arkansas other than those devoted to the manufacture of brick and building tile are those of the Niloak and Eagle potteries at Benton; the new pottery works at Camden, which manufactures vases and other ornamental glazed ware principally; the drain tile plant of the Acme Brick Company at Fort Smith, and the Texarkana Pipe Works at Texarkana, making sewer pipe. In addition to these there are a few small, widely scattered plants making crockery and other crude clay utensils.

Three hundred and ninety-three ceramic plants in Ohio and 14 in Arkansas. This despite the fact that "the clays of Arkansas constitute one of her greatest natural assets," to quote the 1927 report of the state geological survey on the "Mineral Resources of Arkansas." This dispite the fact that "excellent coal is obtainable from the fields in the western part of the Arkansas river valley, and oil and gas from fields in Union, Ouachita, Columbia and Nevada counties." And while we are reflecting on the neglected opportunities that surround us in this field, the gas fields that supply Fort Smith and vicinity with an abundance of cheap fuel must not be overlooked; nor the big pipe lines that enter this state from the Louisiana fields; nor the important new gas field in the vicinity of Clarksville, with its promise of a new gas line along the Arkansas valley all the way to Little Rock, through a region rich in shales suitable for the manufacture of clay products that have thus far been wholly ignored in our half-hearted development of our natural resources.



Shaded areas Nos. 1, 2, 6 and 7, lying in the coastal plain, are the most important clay regions of the state. No. 2 is a fresh water overflow area, its clays consisting for the most part of buckshot suitable for brick making, a mixture of high grade brick and tile clays lying west of the White river. The higher portions of No. 1, known as Crowley's Ridge, is made of principally of loess soil, which makes an excellent brick clay. The lower portions of the ridge contain fire clays of good grade, while pottery clays probably lie in the more deeply exposed portions. Area No. 7 contains the best clays in the state, both in point of quality and quantity, affording raw materials for the manufacture of porcelain, terra cotta, floor and wall tile and pottery of practically every description. No. 6 is similar in many respects, with large amounts of brick and tile clay and a large deposit of high grade kaolin in Pike county, near Delight.

In No. 3 the clays consist principally of shales, also alluvial clays of comparatively recent origin in the lowlands. They are suitable for tile and fire brick as well as for common and face brick.

Area No. 5 in the Ouachita mountain region, contains many beds of shale suitable for the manufacture of brick, while Area No. 4, located on the coastal plain beds, contains some primary and pistolitic kaolin and bauxites that are important from the standpoint of ceramic production.

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ARKANSAS' "BEST BET."

It is a human frailty with which most of us are afflicted that we should fail to see that which is closest to our nose. Our "best bets" are too often those which we overlook merely because of inability to bring our highly touted "vision" into focus.

Perhaps that is platitudinous. If so let it be, but it suffices to launch us into a discussion of what apparently is an exemplification of the truth we have mentioned.

On the first page of this section there appears a story written by a Democrat reporter after an interview with George C. Branner, state geologist. Accompanying that story is a map which deserves careful study.

Attention is called to the statement of Circuit Judge Richard M. Mann, in the Sunday Democrat of May 27, that Arkansas' imports exceed its exports by more than $54,000,000 annually, then the story says:

"The geologist (Mr. Branner) is persuaded, after making a careful analysis of the situation, that the unfavorable balance in trade would be materially reduced if the clay deposits of Arkansas were utilized to the full limit of their possibilities. He believes, in fact, that the manufacture of ceramic products is one of our most logical and promising fields for industrial development."

Mr. Branner cites Ohio, with an annual output of clay products valued at close to $100,000,000, as tangible evidence of the rich possibilities that lie in the manufacture of the almost innumerable commodities that have clay as their base, the story tells you.

It might be pertinent at this point to mention some comparisons which Mr. Branner presents: Ohio, which is by far the largest producer of clay products, shows an annual production valued at $98,000,000 against a total of $1,698,000 for Arkansas. In Ohio there were 303 clay product plants in operation in 1925, as compared with 14 for Arkansas. In Ohio the value of the clay products other than brick and tile amounted to $40,389,000; in Arkansas their value was so small that the figure was included in the "undistributed figure for the whole United States.

Mr. Branner plans an early survey of those vast fields of clay which have been virtually "unscratched." When that survey has been completed whether we overlook this latest one of the many apparent "good bets" depends upon whether we are really seeking opportunities to develop our state. That there is a market for such products is evidenced by the statement that the clay products production of adjacent states such as Oklahoma, Louisiana and Mississippi is negligible in the pottery line—and we might add Arkansas itself to the list.

Mr. Branner, as a geologist, sees no reason why ceramics is not among the means to a prosperity end in this state. If there are causes such as business, social or otherwise why it is not, then why can't they be remedied?

Plan Under Way to Save Large Sums to Arkansas

Surveys of Clay Deposits, Designed to Furnish Definite Information on Possibilities of Manufacture of Clay Products Are Begun.

Gazette 7/28/28

State and local surveys of clay deposits, designed to furnish definite information on the possibilities of the manufacture of clay products in Arkansas, may result in thousands of dollars being kept in the state which are now going to outside states in payment for clay products.

The state of Arkansas is planning a statewide survey through the Arkansas Geological Survey which will begin August 1. The work was to have started July 1 but the services of a geologist had not been obtained on that date.

When the survey starts a competent geologist will be on hand to locate the different clay formations. Samples representing the various clays will be obtained and sent to one of three laboratories of national reputation where they will be tested.

The test report will contain information on the physical properties of the clay with recommendations as to the uses of each clay as well as procedure for correcting any defects. The reports will be signed by a competent ceramist.

C. of C. Plans Survey.

Although nothing definite has been done, a tentative plan is being considered by the Little Rock Chamber of Commerce for an exhaustive survey in this vicinity in which from 50 to 100 samples may be obtained.

Much data on the clay situation in Arkansas has been gathered by H. L. Winburn, ceramic engineer with the Arkansas Geological Survey. He points out that it is estimated that Arkansas manufactures enough brick for its own consumption and a surplus which would supply a state five times as large.

A churn and stoneware plant is being planned at Camden. Good art pottery is manufactured at Camden and Benton and some fire clay is mined in the state. There are 20 ceramic plants in Arkansas, three at Fort Smith, four at Malvern, one at Benton, one at Camden, one at Little Rock, one at Pine Bluff, one at Fargo, one at Jonesboro, one at El Dorado, one at Hope, four at Texarkana and one at Perla.

Much Indian Pottery Found.

Much Indian pottery has been found in Arkansas, Mr. Winburn said, which is made of native clay. The pioneer white settlers also made brick, samples of which still are in existence. These settlers also made pottery but discontinued to do so with the advent of the railroad which made it easy for them to import products from other states.

The growth of clay products has been very gradual and no great progress can be hoped for until the clays are tested and classified. Deposits of bentonite recently have been found in Arkansas.

Arkansas contains much pottery clay, the exact properties of which are unknown. The state manufactures no yellow ware, although some was made during pioneer days. No roof tile is manufactured. This requires an unique clay in that it must have unusual strength. Roofers say that about $25,000 per year leaves Arkansas for roof tile, most of which goes to Kansas.

No enamel brick or glazed brick are made in the state. Neither is terra cotta made here, but is shipped from the North. The state provides a good market for terra cotta.

No wall and floor tile is manufactured in the state, and it is estimated that $80,000 per year goes out of the state for this material. Some decorative tiling is manufactured at Camden. Fire brick is manufactured to some extent at Perla, which are for the most part hand moulded refractors. No silica brick or refractory ware is made in Arkansas.

Sewer pipe and fireproofing is manufactured at Texarkana. Face brick is manufactured at Mansfield, Fort Smith, Perla, Malvern, Hope, El Dorado, Texarkana, Fargo and Jonesboro. Drain tile is manufactured at Texarkana. No paving brick is manufactured in the state. Neither are stoneware bottles, smoking pipes, door knobs, marbles, chemical stoneware, earthen cooking and serving ware not whiteware. It is estimated that approximately one million dollars worth of whiteware is brought into the state annually. This includes cups and saucers and such utensils.

Among other ceramic products not manufactured in the state are electric and gas heating porcelain, chemical porcelain and filterware.

TEST PROVES VALUE OF CLAY AT STAMPS

Firm to Manufacture Bricks and Tiles May Be Organized Soon.

Gazette 7/28/28

Special to the Gazette.

Stamps, July 27.—The test of clay deposits near here made by the Stamps Chamber of Commerce and interested persons from Indianapolis, Ind., recently, were completed with such favorable results that the organization of a firm to exploit the clay commercially will likely be perfected in the near future.

Seven different clays were burned in a beehive test kiln built of fire brick. A slow wood fire was put in the kiln for the first 24 hours, then changed to a fierce gas heat of 2,500 degrees, at which point the fire brick of which the kiln was made began to fuse and the kiln crown melt while the native clay was unaffected, thus proving its value as building material.

The expert who conducted the experiment reported to the Stamps Chamber of Commerce that the Lafayette county clays were the best he had ever tested and that these clays could be used in the manufacture of blackface building brick, fire brick or paving brick, as well as hollow building tile and drainage tile, as well as flower pots.

The kaolin-talc, of which there are large deposits, and which was tested for porcelain or white ware, also proved satisfactory. The Indianapolis men are expected back in Stamps after August 1, at which time negotiations for a series of brick and tile kilns will be taken up.

Many Requests for Clay Samples Received at Stamps.

9-23-28

Special to the Gazette.

Stamps, Aug. 22.—Since the Stamps Chamber of Commerce began its survey of resources of Lafayette county, and made a test of various clays, many requests have been received for samples, from various parts of the country.

Both the pottery and brick trade have become interested, and are asking for shipments ranging as high as 1,000 pounds for laboratory tests. The requests have come from New York, Indiana, Ohio, Missouri and Kentucky. The manufacturers of whiteware are especially interested in the blue and chalk-white clays found near Stamps.

Sept 7 — 1928

Incorporation Matters. 9-7-28

Niloak Pottery and Tile Company, Benton, was incorporated yesterday with $100,000 capital stock and $72,500 paid in capital by C. D. Hyten, Cora Z. Hyten and W. J. Whitthorne.

Stamps Clay Products Interest Outside Industries.

Gazette 10/17/28

Stamps, Oct. 16.—The Chamber of Commerce is in receipt of several pieces of pottery manufactured from clays found in the vicinity of Stamps. There seven of these clays, each of which is given a good report, and the manufactured samples include common and fancy brick; art pottery and crockery ware.

The plants that have made these test samples have become interested in the Stamps raw material and also in Stamps as a location for a plant, and negotiations are now under way looking forward to the establishment of such an industry.

NEW NILOAK PLANT STARTED AT BENTON

Pottery Company Incorporates With $100,000 Capital Stock.

Special to the Gazette. 9-7-28

Benton, Sept. 6.—With filing of articles of incorporation at the state capitol in Little Rock, the Niloak Pottery and Tile Company broke ground on its building site near here for the construction of a new $20,000 factory. The petition for a charter shows that the company has a capital stock of $100,000 and a paid-in capital of $72,000.

Plans for the new plant, which will be located on the Little Rock highway about a half-mile from Benton, are arranged to allow for expansion as the growth the business warrants, C. D. Hyten, official of the company, said tonight, adding: "We intend to make our new factory one of the show places of this section. The entire property surrounding the building will be landscaped to enhance its attractiveness."

The plant, which is now being used in Benton, will continue to operate, but will manufacture only stoneware after the new factory is completed and equipment installed for producing "Niloak" pottery.

Although the company has just filed a petition for incorporation, it has been operating for many years, and the clay goods produced are well known throughout the country.

RICH KAOLIN CLAY DEPOSIT LIES IDLE

Lack of Capital May Force Owner to Use Valuable Material for Bricks.

Gazette 12/10/28

Special to the Gazette.

Jonesboro, Dec. 8.—Down on the Cotton Belt railroad, at what is known as the "Overhead Cut" near Gilkerson, is a vast deposit of kaolin—the clay from which is manufactured the highest quality of chinaware. In this deposit is a million tons of the material. Geological maps show that the entire peak of Crowley's Ridge is underlaid with clay that varies in grade from good ironware material to the finest of kaoline.

Ben Brookfield, who has ranged this entire section through many years, discovered and now holds a lease on the kaoline deposit near Gilkerson. He has subjected it to many tests and in every case the clay has more than measured up. This deposit is devoid of foreign substances. Pure, 100 per cent kaolin is represented by every spoonful of the chalklike material, he says.

Discovered in the richer sections of America, it would cause a rush of capital, organization of a great chinaware manufacturing plant and a fortune for all who touched it. Here, with limited capital and fear of speculation, probably it will lie for many years to come, an undeveloped opportunity.

Mr. Brookfield says he intends to sell the clay for the manufacture of brick.

When the Cotton Belt made the cut at Gilkerson, trainloads of this kaolin were hauled away and thrown upon the railroad dump. The trains use for ballast a material which is worth almost as much as the train.

It would require about $200,000 to build machinery and erect a plant to manufacture chinaware. The market already is in existence, for every home uses china.

"Bentonite," Highly Valua[illegible] Mineral, Believed Found i[illegible] Arkansas Counties

That certain Arkansas mineral deposits heretofore believed to be common fuller's earth may actually be bentonite, a highly valuable substance for which there is a brisk growing demand, especially in the manufacture of rubber tires, "beauty" clays and glazed ware, now seems probable, according to Dr. George C. Branner, state geologist.

A sample recently forwarded by Dr. Branner was declared to be bentonite by no less an authority than Charles F. Binns, director of the New York State School of Ceramics, but despite the findings of the expert the state geologist is not yet fully satisfied in the matter and feeling that further versification is necessary he has subbitted samples to four other authorities for laboratory tests.

If the mineral proves to be what the New York ceramics expert says it is, the discovery may well be one of considerable commercial importance to the state, Dr. Branner says, since the conditions under which the deposits were found indicate the possibility of its occurance in large quantities in a certain section of central Arkansas within a few miles of Little Rock.

One outcrop of the substance was found near Little Rock. Another was accidentally discovered in Hot Spring county. The two spots are about 30 miles apart but the fact that both appear at almost exactly the same distance below the base of a geologic formation of cretaceous age leads Dr Branner to believe that there may be an intimate relation between the two, his theory being that they may be connected by a continuous deposit.

Assuming a deposit of such extent, properties worth millions of dollars may now be owned by people who are as yet wholly unaware of the mineral value of their holdings, provided, of course, the mineral were of such grade as would make it suitable for commercial use.

"I believe you have here a valuable mineral," Binns wrote the state geologist a few days ago. "Its use in the suspension of enamels, in increasing the plasticity of short clays and as an ingredient in glazes seem to afford quite promising possibilities."

Worked as Fuller's Earth.

The sample which Binns passed upon came from the Hot Spring county occurence. The other deposit, which lies in Saline county, was discovered many years ago but believed to be common fuller's earth. It was actually worked as such for several years, but abandoned in 1904. Strangely, the difference between fuller's earth and bentonite does not appear in chemical analysis. The two are chemically almost identical but possess certain widely divergent physical peculiarities which are only revealed in special tests, such as those made by the New York ceramic expert.

The term "bentorite" was originally applied to a greenish-yellow exceedingly plastic, clay-like mineral found in the Laramie and Big Horn basins in Wyoming. Geologists define bentonite as a "clay-like mineral or group of minerals consisting essentially of hydrous aluminum silicate, usually containing from five to ten per cent of alkalies or alkaline earth oxides." It is usually characterized by very fine grain size, high water content, high absorptive powers and high plasticity.

In addition to Wyoming, bentonite has been found in California, South Dakota, Montana, Arizona, Utah, Texas, and Tennessee and Canada, but the supply of good commercial grade, however, is so limited that powdered bentonite brings $30 or more a ton in Eastern markets.

Until recent years the uses for bentonite were few and relatively unimportant, according to Raymond B. Ladoo, general manager of the Southern Minerals Corporation, whose book entitled "Non-Metallic Minerals" has this to say regarding its utilization:

"Within the last few years the unusual properties of bentonite have attracted considerable scientific attention, and a systematic research has been undertaken to study this material and to develop the best methods for its utilization.

Bentonite in Paper Making.

"Tests seem to show that the addition of small amounts of bentonite to the clay used as a paper filler greater increases the percentage of filler in retention in the finished product. Some paper companies have experimented with this material and claim the additional advantage of complete suspension in water and the production of a paper of superior 'feel.'

"The Forest Products Laboratory has also developed a successful process for the de-inking of news print and other types of printed paper in which bentonite plays an important part. Bentonite is now used successfully in the refining of oils, particularly petroleum products. It is reported that the material is from five to 16 times as efficient as the best fuller's earth for this purpose.

"Considerable quantities of bentonite are now used as facial and 'beauty' clays and as a basis for massage creams. In the manufacture of soap it has been proved that some bentonites can actually replace 25 to 50 per cent of the soap substance, producing a soap equal to or superior to the ordinary soap.

"Owing to the extremely fine grain size of bentonite the question has [illegible] suitable [illegible] used as [illegible]ords, tex- [illegible] molded [illegible] seems to [illegible] in the [illegible]igh pras- [illegible]pplication [illegible] smaller [illegible] be used; [illegible]cing the [illegible]cal and chemical porcelain, abrasive wheels and graphite crucibles with bentonite is being considered.

"It is reported that some bentonite can be used as an ingredient in a superior adhesive paste, particularly for sticking paper to metal. It is claimed that labels pasted on iron with this paste will not curl up and drop off.

"Other uses suggested for bentonite are: as a bond in molding sand; as a base for the precipitation of lake colors; as a base for printers' ink; as a heavy lubricant or grease (mixed with oil); and as a filler or dressing for leather."

Dr. Branner has become so keenly interested in the subject as a result of the apparent discovery of the mineral in this state that he is preparing a paper on the subject of bentonite to be read at the meeting of the American Institute of Mining Engineers in New York the latter part of this month.

CERAMIC INDUSTRIES TURNING TO

Eastern Potteries, Like Cotton Mills, Seeking Better Labor Conditions, Cheap

—Survey Shows Ideal Conditions in Arkansas, and State Geologist Re

April 11, 1926

For the same reason that the textile industy is moving southward from the New England states, there has begun a migration in the same direction of the great pottery manufacturers from along the Atlantic coast, these factories seeking to get nearer the supplies of raw materials, labor and fuel, and to keep in touch with the centers of consumption. During the past few months the state geologist, George C. Branner, has received scores of inquiries about locations for prospective plants from manufacturers in other states.

This unusual activity concerning one of Arkansas' most abundant mineral resources recently induced William Crooks, president of the Crooks Engineering Company of Little Rock and Pine Bluff, and consulting engineer of the Arkansas Light and Power Company, to make an exhaustive survey not only of the clay resources of the state, but of the fuel situation and the transportation facilities, and the report of this survey shows that in the territory along the Cotton Belt railroad, between Pine Bluff and Camden, there are advantages for the pottery industry not to be found anywhere else in the United States. and where large commercial potteries may be established wth the certainty of obtaining close at hand the finest quality of clays, which compose 50 per cent of the material used in this industry, with abundant supplies of flint only a short distance away and easily reached by convenient lines of railroads; with beds of feldspar in two neighboring states, as close as they are to any other pottery-producing section! with natural gas at a low rate for fuel, supplemented by unlimited supplies of coal in the western part of the state, and with the development of water transportation on the Ouachita river, from Camden to the Gulf, promising a low rate for the movement fo the products of the potteries to the seaboard and thence to the distant markets. By rail this section is in close touch with the southwestern United States, which is rapidly developing as a market for the higher grade pottery products, especially such goods as are used in building construction, hollow tile, terra cotta and plumbing ware.

Labor Situation Is Atrtactive.

In making this survey, Mr. Crooks found that the pottery manufacturers are most interested in the apparent abundant supply of native white labor, which is preferred in this industry, as it is in the operation of cotton mills, because of the higher order of intelligence, the quickness with which the new hands become skilled in the work and the more agreeable dispositions of the workers, which counts so much for efficient operation and the industrial contentment of the workers. It is said that there is in Calhoun, Hot Spring, Saline and Ouachita counties enough white labor to man half a hundred big pottery plants.

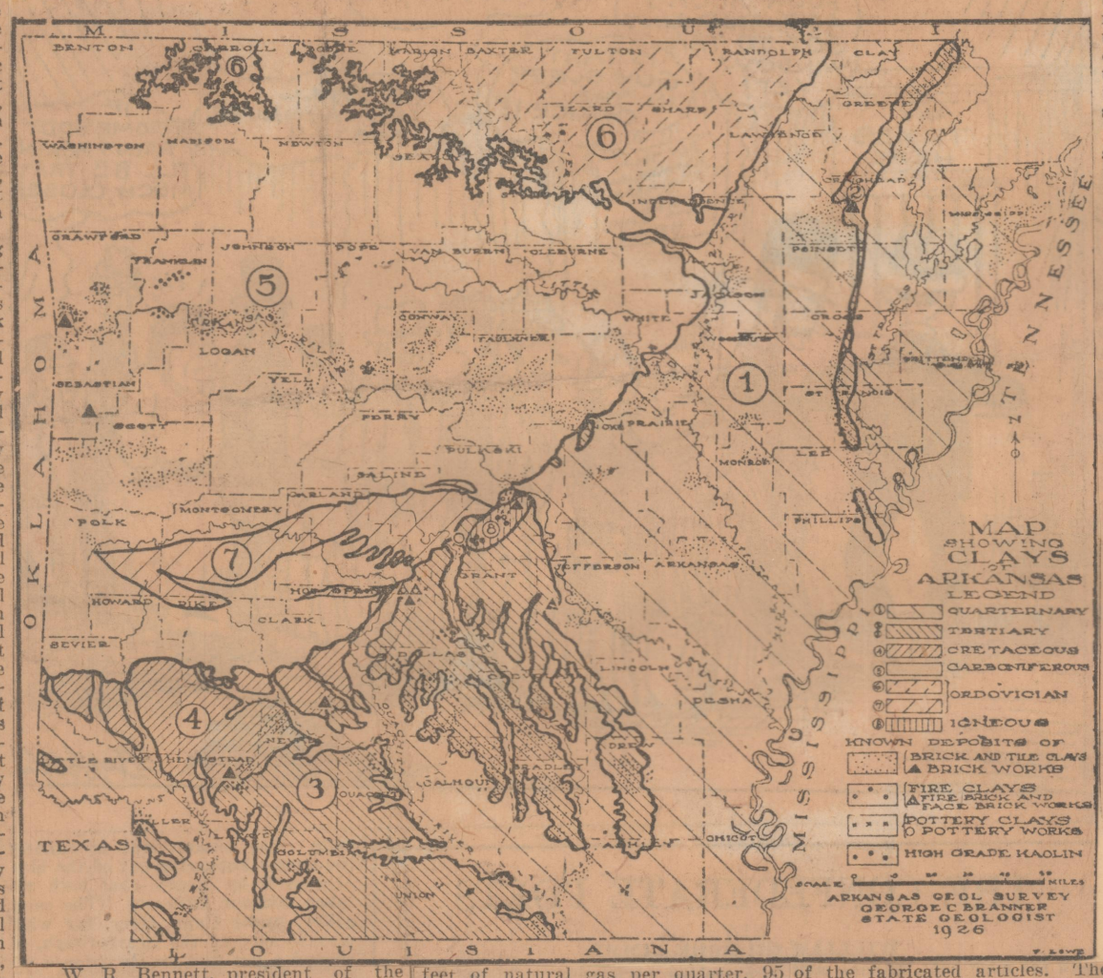
As a result of extensive studies conducted by the pottery companies to determine what constitutes the most economcal unit to install, it is found that a pottery employing approximately 300 persons is the minimum size, and that as rapidly as operatives can be trained this unit should be increased to 400 or 450 employes. This would mean that a pottery plant at each one of the small towns in the clay belt would give employment to practicaly all of the labor in the community not otherwise occupied, with probably larger plants in the biggest towns, where a greater number of workers might be obtained. The labor question, which is one of the most troublesome for the industry in the Eastern states, seems to be the easiest one solved in this territory, a point that appeals forcefully to the manufacturer.

It is said that Thornton, which little town recently suffered the loss of a great lumber mill as the result of a fire, will be the first to make a trial of the pottery industry and that a movement already has been started to locate a plant there. It is probable that Camden and other cities conventient to the gas fields and the Ouachita river, will be benefited by the movement southward of the pottery industry, for the advantages of these localities stand out prominently in the recommendations of the engineers and the reports of the geologists.

Need for Pottery Products.

There seems to be a great opportunity for the development of industries that will make a specialty of structural pottery such as terra cotta, building tile and sanitary goods, rather than of art pottery, household ware or brick, for the present industries seem to be more than supplying the home demand for these products.

ARKANSAS RICH IN CLAYS



W. R. Bennett, president of the Acme Brick Company of Fort Worth, Tex., which recently obtained control of the Arkansas Brick and Tile Company, in a letter to George C. Branner, state geologist, says. "In the manufacture of brick and tile, Arkansas is about as well off as any state can expect to be. Practically all of the state consumption is manufactured within the borders of the state and there is a very large and growing exportation of these products to other states.

"There is no doubt but that in other than heavy clay products, such as common brick, hollow tile and face brick, that the ceramic industry in Arkansas is lagging. There is unquestionably great opportunities for the manufacture of pottery of all kinds, and probably other than the heavy clay products, such as conduit, etc."

Mr. Bennett says that the gas rate in central Arkansas is 25 cents, as compares with five to 6 cents per 1,000 cubic feet at Fort Smith, in Oklahoma and in various points in Texas and Louisiana, and fuel being such a determining factor in the cost of heavy clay products, he thinks it naturally has an important influence upon the development of the industry. In southern Arkansas the gas rate, it is understood, is as low as the minimum rate quoted by Mr. Bennett for other sections. Continuing, Mr. Bennett says:

"If the clay products industry continues to develop in the future like it has in the past, unless foreign markets are found, eventually on account of the wide distribution of clays suitable for making heavy products, the ideal situation will be where the state manufactures its own consumption and exports to other states more than it brings in. Generally speaking, each area eventually is going to, more or less, be able to manufacture close at hand its own consumption. Arkansas does not import such articles as mentioned, but on the other hand, exports to other states large quantities."

Fuel Is Major Consideration.

Fuel is one of the controlling factors in the conduct of a pottery industry, because of the immense amount of heat used in th eoperation of the kilns, for that reason the manufacturers are particularly interested in the natural gas supply and are turning their attention either to southern Arkansas or to the country about Fort Smith ,atlhough Mr. Bennett, the state geologist, says that some of his requests are for shale deposits in the vicinty of coal deposits.

According to the returns under the severance tax law, the state produces at present about 17,000,000,000 cubic feet of natural gas per quarter, 95 per cent of which is produced in the southern Arkansas field. The factory rate for natural gas is said to be approximately 5 cents per 1,000 feet in south Arkansas and 10 cents in the western field. At Little Rock, to which point the gas is piped from south Arkansas and Louisiana, the rate is 25 cents per 1,000 feet, which is said to be prohibitive for the pottery industry.

A lower rate on natural gas for Little Rock industries would make it possible to develop the primary kaolin deposits south of the capital city, which are said to be of exceptionally high grade. These kaolins are found in contact with granite and are alteration products like bauxite. Mr. Branner says that there is a possibility of finding high-grade paper clay and art pottery clay in the Saline county granites. The bauxite clays are used for the manufacture of fire brick, but these clays as well as the kaolins about Benton will not reach their highest development until a lower gas rate is obtained, for the reason that the industries will be first attracted to those points which are convenient to the cheapest fuel.

In the western part of the state, while the gas rate is not as low as that of southern Arkansas, the industries have the advantage of supplies of both gas and coal. In the region of Fort Smith, coal and fire clay is found side by side. At Clarksville natural gas recently has been discovered in a region where shale clay abounds. The accompanying map shows the distribution of the various clays and the location of present clay-working industries. In the future development of this line of manufacture in the state, it is understood that the location of plants will depend largely upon the class of product to be turned out, as well as upon the availability of raw materials, labor and convenient transportation facilities.

Products of Pottery Plant.

Some of the purposes for which clay is used, besides for the making of ordinary brick, sewer pipe and conduits, are art pottery, tile, stoneware, enameling, paper filler and coating, rubber, oilcloth and linoleum, paint filler and extender, terra cotta, asbestos products, kalsomine, artificial abrasives, crayons, chemicals, pencil leads, gas retorts, fire brick and flower pots.

American earthenware is made up of materials in about the following proportions: Kaolin, 38 per cent; ball clay, 13.1 per cent; feldspar, 13.4 per cent; flint, 35.3 per cent. The clays are introduced for imparting to the mixture the degree of plasticity required in the molding and shaping of the fabricated articles. The ball clays are very plastic and strong and are used to impart strength to the ceremic bodies. Feldspar provides the vitreous cement necessary to fuse the other or more refractory constituents. It also exercises a decided dissolving action upon the clay substances and the quartz, or flint, contained in the earthenware. Flint is composed almost entirely of silica and may be obtained from flint rock, novaculite or tripoli. Its chief function is to reduce the shrinkage of the body mixture in the drying as well as in firing so as to impart to it a sufficient rigidity so that during the vitrification process, when the kiln temperature is at its maximum, the fabricated articles will not deform by bending or squatting.

No state is richer than Arkansas is the quantity or variety of its clay deposits. There is an abundance of flint in the novaculite hills lying adjacent to the clay beds. The only material used in the manufacture of Pottery that is not to be found in Arkansas is feldspar, which is the least in volume of the several ingredients. This material is to be obtained in the nearby states of Tennessee and Kentucky and is as convenient to the Arkansas pottery as to those of any other states where suitable clays are to be found.

Pottery an American Industry.

"The manufacture of pottery is one of the oldest of the arts," says Mr. Crooks in his report. The Babylonians and Egyptians, some 3500 B. C., made pottery tablets upon which they recorded their various historical events. It is impossible to determine the exact origin of pottery in China, but pottery making was probably carried on by the Chinese at as early a date as by the Babylonians and Egyptians.

"To the average person the term "pottery" probably calls to mind certain articles such as tableware and vases; however, these articles form only comparatively a small amount of the total output of the present-day commercial potteries, and in the last 50 years ceramic engineering has made remarkable progress. The output of the various potteries in this country goes through a very large range of finished products.

"Some potteries devote their entire energies to the manufacture of porcelain insulators for the electrical industry; others manufacture exclusively various articles for the use in homes, hotels and public buildings, such as lavatories, bathtubs, kitchen sinks and laundry tubs. Other potteries confine themselves to the manufacture of interior glazed wall tile, the latter being largely in hospitals, restaurants and bathrooms. Others confine their attention to the manufacture of floor tile, and other potteries manufacture the terra cotta finish used in facing large buildings in place of stone or brick. No matter what type of finished product is manufactured the process is very much the same in each case.

"The idea very generally exists that at some one point there is a clay that is particularly adapted for the manufacture of pottery, and the manufacturing establishment is placed in close proximity to the deposits and the clay mined and carried to the pottery and made into the finished product. This idea is an erroneous one in that the material for pottery making has never been found in a complete mixture in nature, and the actual amount of clay from any one deposit in the higher grades of pottery constitutes a comparatively small part of the total. It has also been found necessary to make a mixture of several different kinds of clays that are perhaps drawn from far distant points. As a general rule, the higher grade pottery is made from a mixture of several grades of kaolin, or pottery clay, and felspar and flint.

"The word 'kaolin' has largely become used to identify almost any white plastic clay; however, a true kaolin is a white clay that has the ability to mix into a homogeneous mass and stand the firing necessary in making the finished pottery. The word 'kaolin' is the English translation of the name of a mountain in China, meaning 'high ridge,' from which China clay was secured by the Chinese and used in their potteries several thousand years B. C.

"True kaolin is not entirely plastic, and it is necessary to add other clays to make up for this deficiency. This is usually done by the addition of what is known as English ball clay. To control the shrinkage of the clay and prevent it from cracking when being dried and fired, another ingredient is added, and it has been found by the potters that pure flint is by far the best material to use. In order to give the body of the pottery vitrification and strength, a certain amount of felspar is added.

"Both the felspar and the flint are tested for impurities, especially the presence of iron oxide, which latter element would render it unfit for pottery purposes. After the pure felspar and flint have been obtained these materials are ground in a mill to a firmness about equal to that of flour, and are shipped to the potteries and stored until it becomes necessary to use them. The various clays that will be used in making the finished product are shipped into the pottery and placed in the storage bins.

"As a rule the clays are, to a great extent, refined, usually by a washing process at the point at which they are mixed, so that only the comparatively pure clay reaches the pottery. The proportions of the clays, felspar and flint used by the potter in making what he calls the 'mix,' are carefully weighed so that the mixture will very closely follow a formula found by test to be best suited to the potters' needs. After these raw materials have been weighed out in the exact proportions, water is added and the materials are thoroughly mixed for about two hours by large revolving paddles, reducing it to a fluid state of approximately the same consistency as cream. In this state it passes over screens that remove any foreign substances that may have remained in the raw materials after the first purification at their source of suppily. After screening the liquid is pumped into presses very similar to the presses used in a cottonseed oil mill. These presses remove all of the surplus water and leave the clay in about the consistency of putty, and in slabs about three feet square and two inches thick. The slabs are then stored in a damp cellar and allowed to age for several months, the aging rendering the clay more plastic.

Work of the Potter.

"After the aging period the clay is molded by the potter into whatever form is required by the finished product. Formerly the forming of pottery was done almost entirely by hand, but in more recent times the process of casting has been perfected, somewhat in the same way that iron is cast. In the older method the clay was used in a plastic state, while in the casting method the sheets of clay are again reduced to a liquid state, and poured

into molds somewhat similar to the molds used in an iron foundry. In either case the semi-finished product is allowed to dry for a certain period and then put through kilns and fired. After the first, or preliminary firing, which hardens the pottery, a final finish is given, often by means of carborundum wheels, or some other form of abrasive. After this the surface is covered with glazing material and the piece of pottery given its final burning, after which it is ready for the market.

"Up to the past few years the only type of kiln known was one similar to that used in the manufacture of brick, and usually beehive in shape. The unburnt pottery was stacked in the kiln and all openings and cracks thoroughly filled, after which the kiln fires were lighted and the temperature gradually raised to about 1470 degrees Fahrenheit, after which the temperature was rapidly increased until the full heat that experience had determined to be necessary was arrived at. The kiln was then gradually allowed to cool off and the burnt pottery finally removed. The time required by such process was usually about six days for burning, and a day and a half after the doors of the kiln were opened.

"In the last few years the process of continuous firing has been perfected and the kilns are made in the form of a long tunnel, with the intense heat in the center. A track runs through the tunnel from one end to the other and the pottery is stacked on cars which run on this track. The tunnel kilns are usually about 400 feet in length. Experience has found that it takes about 56 hours to burn pottery in the tunnel kiln, very materially reducing the amount of time required by the old type of beehive kiln."

Area No. 1—This is the fresh water overflow portion of the Coastal Plain which is comparatively flat over large areas and covered with fresh water sediments carried down by waters which formerly drained from the north across this region. The clays in the eastern portion are as a rule rather low grade buckshot material which can be used for brickmaking. The western and southern portions lying west of White river contain widely distributed brick and tile clays.

Area No. 2—The higher portion of this area, known as Crowley's Ridge, is made up principally of loose soil, which forms an excellent brick clay. The lower portions of the ridge contain fire clays of good grade. Pottery clays probably lie in the more deeply exposed portions of the ridge, which are made up of marine Tertiary beds.

Area No. 3—This area is made up of a rolling country and contains the best clays in the state, both in point of quality and quantity. The surface beds are also the marine Tertiary beds. Excellent pottery and stoneware clays are found in Dallas, Cleveland, Hempstead, Bradley, Ouachita, Columbia, Union, Grant, Hot Spring and Pulaski, Saline, Miller, Ashley and Drew counties. High garde kaolins are located in Pulaski county. At Benton an art pottery, known as Niloak, is made from multicolored Tertiary kaolin found at that point.

Area No. 4—In many respects this region is similar to Area No. 3, except that many of the beds are marls, chalky marls and chalks. Brick and tile clays are found however in this district, and there is a deposit of high grade kaolin near Delight, Pike county.

Area No. 5—Clays of this region consist chiefly of shales, which are found in place, and also of alluvial clays of recent age, located in the river bottoms and other low land areas. The clays are widely distributed but there is not a county in which a fairly good brick clay cannot be found.

Area No. 6—This is the Ozark Plateau area, the surface of which is composed largely of limestones, dolomites and a few standstone and shale beds. The clays are evenly distributed, but are of little commercial value.

Area No. 7—In the Ouachita Mountain region the beds are made up of steeply folded novaculite, slate, chert, limestone and shale, but there are very few valuable beds of shale in this region.

Area No. 8—This is a small region in the vicinity of Little Rock, located on the Coastal Plain beds and containing some primary and pisolitic kaolins and bauxites derived fro mintrusions of syenite, or blue granite. There has been no attempt to work these kaolins, which are 15 feet in thickness at some points. They are covered with an over-burden of varying thickness.

Texans Lease Clay Deposits in Pike County.

Special to the Gazette. 1926

Arkadelphia, April 27.—Nearly 2,000 acres near Delight, in Pike county, have been leased by Dallas (Tex.) men for developing the fine clay deposits that underlie the top soil. The leases are six miles from the diamond mine near Murfreesboro, and may be operated within a few months. The lessors have intimated that a railroad will be built into the leased tract.

The clay is said to be highly suited for pottery. Tests also have shown a high per cent of potash.

MAGNOLIA BRICK & TILE CO. EXPANDS

6/14/26

Contracts for Malvern Plant's Output, Manager Chamblin Announces.

Further proving that Arkansas is utilizing its natural resources, B. J. Chamblin, Little Rock manager of the Magnolia Brick and Tile Company, 225 Louisiana street, has announced the beginning of operations at the new Malvern Brick and Tile Company, which is headed by A. B. Cook of Malvern, president; G. A. Callahan of Hot Springs, vice president, and C. A. Bryan of Melvern, secretary and treasurer.

B. J. Chamblin.

The Magnolia Brick and Tile Company has contracted for the entire output of the Malvern plant, Mr. Chamblin said. In 1919, Mr. Chamblin formed a partnership with F. T. Bates, and the Magnolia company was formed. Mr. Bates has charge of the Muskogee office.

The company has brick and tile manufacturing plants at Mansfield and at Sapulpa, Okla., besides having the output of several other plants under contract.

Mr. Chamblin said that hundreds of thousands of bricks manufactured at Mansfield were daily being shipped into the state of Kansas. The immediate territory of the company includes Kansas, Arkansas, Louisiana, Oklahoma and Texas.

Dealers are stationed, Mr. Chamblin said, in all large centers in the Southwest.

The plant at Malvern has been in operation for several months making brick to build new kilns, but for the past month has been shipping face and common brick. This clay has become justly famous throughout the Southwest, and with the manufacture of even better quality brick than ever, the distribution of this material should be extended further, Mr. Chamblin said.

The plant has an unlimited amount of clay land which will last indefinitely, guaranteeing for years to come uniform colors and manufacture. The plant proper is located in close proximity to the clay pits minimizing the distance for the clay to be hauled.

In selecting the machinery and system of burning, Mr. Bryan, who has been connected with the clay industry in Malvern for many years, made an extended trip through the East in search of the latest and best methods of manufacture. The proper burning of brick being the most important end of the business, he devoted most of his time to an examination of the various methods in use and finally decided on the Minter system, the latest development in the industry. By this system the heat from a cooling kiln is led to the dryer or to another kiln just being started to burning. In this manner the heat that is usually lost to the atmosphere is made to perform a useful work and reduce the quantity of gas necessary in burning. This waste is controlled by a system of valves which controls the quantity to be led to the dryer or to the kilns.

Another very important method of control is the system of pyrometers and recorders by means of which the exact temperature in any one kiln may be read at any time so that the amount of heat applied may be controlled exactly. This is quite in contrast to the old methods of brick manufacture, where the results were greatly in question until the brick were cool enough to examine, while with the late methods in use, the quantity of waste, crooked or soft brick is reduced to practically nothing.

Mr. Chamblin states they are now ready to make immediate shipment of matt face brick, common brick, and smooth face brick. The face brick are now made with a new texture which maintains the soft effect in the completed wall, but not so rough as to hinder the bricklayer in laying and cleaning. The shades range in color from extreme light reds to extreme dark or gun metals. A new shading obtainable only with these kilns s a beautiful flashed shade in which several colors may be had in the one individual brick. It is expected that this will be very popular with those wishing to obtain the unusual effects.

To accompany this line of face brick, Mr. Chamblin has announced, the manufacture of a new type of brick at the Mansfield plant. This brick is a hollow brick having the same length and width as ordinary common brick, but four inches high as compared to the standard two and one-quarter-inch thickness of common brick. The weight, on account of the fact that it is hollow, is about the same as common brick and consequently can be handled by the bricklayer with as much ease, but on account of being larger, builds up much faster, reducing the amount of labor required. It is estimated that by using this type of hollow brick, a saving of approximately 10 per cent may be effected. This type of hollow brick has been perfected due to the excessive costs of labor on common brick and in the case of ordinary hollow tile, on account of its weight, unwieldiness and excessive amount of plaster required. This brick is, in fact, a "one hand" unit, which can be used in any place where ordinary brick or tile may be used and at the same time gives the advantages of both.

PINE BLUFF GETS SEWER PIPE PLANT

Gazette 12-28-27

Memphis Concern Will Build Concrete Products Factory at Once.

Special to the Gazette.

Pine Bluff, Dec. 27.—Selection of a site at Fourth and Michigan streets here for a plant to manufacture concrete pipe was announced today by O. H. Miller, president of the Choctaw Culvert and Machinery Company of Memphis.

Storm and sanitary sewer pipe and reinforced concrete pipe will be manufactured. Work on the building and warehouses will begin soon. Oliver Galbraith of Pine Bluff, has been named local representative and state agent for the company and H. E. Johnson, general superintendent of the Hollywood Concrete Pipe Company of Memphis, will be superintendent of the plant here. The plant will employ 25 men.

GUY DICKINSON IS GIVEN PROMOTION

Acme Brick Company Division Sales Manager Is Made Vice President.

Gazette 4/14/28

Election of Guy Dickinson, for the past two years division sales manager of the Acme Brick Company, with offices at 115 Center street, to the office of vice president, was announced yesterday. The election occured at a meeting held in Fort Worth, Tex., last Thursday.

Mr. Dickinson will continue in charge of the company's Little Rock office. He now is the only executive official in Arkansas. M. W. Hardy of Little Rock, and C. J. Mansfield of Warren are members of the Board of Directors.

The Acme Brick Company is a $2,500,000 corporation operating plants at Little Rock, Pine Bluff, Fort Smith, Malvern, Perla, Denton, Tex., Millsap, Tex., and Oklahoma City, Tulsa and Cleveland, Okla. It maintains sales offices and display rooms in Little Rock, Fort Smith, Memphis and the larger cities of Oklahoma, Texas and Louisiana, a total of 18.

The Arkansas plants were purchased from the Arkansas Brick and Tile Company in 1926. Mr. Dickinson at that time was sales manager of the latter organization, a position he had held 21 years. He immediately joined the Acme Brick Company.

Operates Huge Plants.

The company produces face brick, common brick, fire brick and hollow building tile. The Perla plant is the largest plant in the United States for the manufacture of light colored face brick. The common brick plant at Little Rock is the largest of its kind in the South and Southwest.

Forty-five of the stockholders of the Acme Brick Company live in Arkansas. W. R. Bennett of Fort Worth, is president of the company.

Mr. Dickinson, a native of Tennessee, entered the army at the age of 21 and served as a first lieutenant through the Spanish-American war. Leaving the army he worked as an accountant at Milam, Tenn., before entering the service of the Arkansas Brick and Tile Company.

The Pug Mill, a monthly magazine published by the Acme Brick Company, says of Mr. Dickinson:

"His accomplishments as one of the pioneers in the promotion and sale of face brick speak volumes for his foresight and faith in the business—faith at a time when the brick business was in its infancy and was struggling to secure recognition at the hands of both architect and builder in this great Southwest. He was not slow to adopt the improved manufacturing methods as they presented themselves, and his painstaking, careful, conservative treatment of changing conditions during his entire service speak more than words can tell as to his ability and talents."

BRICK PLANT IS TO BE ENLARGED

Gazette 1-11-29

Acme Company Plans to Expend $250,000 on Its Perla Factory.

Directors of the Acme Brick Company have approved plans for additions and improvements at its Perla factory, near Malvern, to cost $250,000, Guy Dickinson of Little Rock, vice president and executive officer for the company in Arkansas, announced yesterday, and work has started on the additions.

The added facilities will increase capacity of the plant from 30,000,000 to 45,000,000 face brick per year, and will make it the largest face brick factory in the United States. Mr. Dickinson said. The plant already is rated as the largest single producer of gray face brick in the country, he said.

The increased capacity, Mr. Dickinson said, will result in the manufacture of products that heretofore have not been made in the Southwest. These products, will consist of brick of new colors and different textures. No increase in the kinds of face brick now manufactured at Perla is contemplated, it was said, as the market for this product now is fully absorbed.

It is planned to make improvements that will increase the efficiency of the plant, improve the quality of products and provide other benefits that accrue from greater mass production.

In addition to the Perla factory, the Acme Brick Company owns and operates plants at Fort Smith, Malvern and Little Rock, in Arkansas, at Bennett, Denton and Wichita Falls, Tex., and Cleveland, Oklahoma City and Tulsa, Okla.

W. R. Bennett of Fort Worth, Tex., is president of the company, and 50 of the stockholders resid- in Arkansas. M. W. Hardy, Little Rock; H. T. McKinney, El Dorado, and C. J. Mansfield, Warren, are members of the Board of Directors.

The company maintains offices and display rooms at 115 Center street, Little Rock.

Venetian Brick Co., Kansas City, notice of entry into the state, with $10,000 of its capital stock to be used in operation of branch factory at Plainview. W. F. West was named as legal agent. Gazette 1-14-29

Discul in

2/20

deeds are his p... friends.

Policeman Goes

Police Sergeaten tickets to sell... been found guilnment. You sold... serve his 18 mthe rest yourself... The jury bef... m back. As a... first heard the... let a woman... our face. You are...

Possibilities for th... development of an entirely new mining industry—one that may well be expected to contribute substantially to the wealth and prosperity of the state in the near future—loom as a result of the recent prospecting activities of Thomas P. Foster of Little Rock in Saline and Hot Spring counties.

After months of patient boring into the soil with a crude hand drilling outfit, Foster and his associates are confident that they are following a trail which will lead to the discovery of extensive deposits of a strange mineral called bentonite, worth $40 a ton in eastern markets at prevailing prices. It has almost innumerable commercial uses, including oil refining and the manufacture of enamels and glazes.

Two outcrops of the mineral have been found at points about 30 miles apart, one about 14 miles south of Little Rock in Saline county, and the other five miles southeast of Malvern in Hot Spring county. A third deposit has been reported in Ouachita county, about two miles from Chidester along the Gurdon-El Dorado branch of the Missouri Pacific railroad. On the theory that all three deposits belong to the same "zone of deposition"—lying in a more or less continuous bed, in other words—Foster is securing leases and mineral rights on intermediate tracts, having first acquired leases on the land where the Hot Spring and Saline county outcrops occur. His drilling operations have already verified this theory to some extent, several intermediate beds of bentonite having been found.

Geologist Identifies Mineral.

That the substance is indeed bentonite, and not fuller's earth as it was previously believed to be, has been amply verified by Dr. George C. Branner, state geologist, whose interest was so thoroughly aroused by the find that he wrote a scientific paper on the subject. It was read and received with keen interest at a recent meeting of the American Institute of Mining and Metallurgical Engineers in New York.

Dr. Branner was the first to point out the probability of the three outcrops being part of the same deposition zone. His investigations revealed the interesting and significant fact that both the Hot Spring and Saline county deposits appear in each case at a distance of approximately eight miles from the base of the so-called Wilcox formation.

Although Foster and his associates are enthusiastic over the prospects, they frankly admit that their development venture is fraught with uncertainty. They realize that further prospecting may dash their hopes, although the results of their explorations thus far have been highly encouraging, indicating a strong probability of extensive if not continuous beds of the substance between the widely separated outcrops on which they have taken leases.

The promoters are seriously handicapped by lack of capital at the present stage of their operations, their efforts to interest investors in the enterprise having been rather disappointing thus far. The leases are being made in the name of "T. P. Foster, Trustee," the intention being to give each investor an equity in proportion to his contribution.

"It is all a gamble, but a mighty good one in my opinion," Foster said last week. "It may develop that there are no deposits sufficiently large to justify the erection of a reduction and drying plant, without which there would be little hope for the enterprise to prosper, except in a small way. I would be the last to represent that this was a 'sure thing,' but I have been scouting around these parts for five years now, looking for mineral development possibilities, and I can truthfully say that this looks like the best proposition I have yet found. I believe that further prospecting will show beds of bentonite amounting to several hundred thousand tons that could be profitably mined."

In the event his future explorations justify his belief regarding the quantity available, Foster hopes to be able to interest enough capital to build a reduction plant in Little Rock. He estimates that the cost of mining at the Saline county property would average about $1 a ton and that the cost of hauling from mine to plant would run at about the same figure.

Uses of Bentonite.

Laboratory tests made here at the L. B. Forbes laboratory show that the Saline county bentonite, after being mixed with sulphuric acid, is 16 times as efficient as imported English fuller's earth in the refining of crude petroleum. It is equally efficient in the process of refining animal fats and could be used to good advantage by packing plants which now depend on fuller's earth in the manufacture of cooking fats, soap and similar products.

Bentonite has about the same consistency as bees-wax when fresh from the ground, but hardens and becomes brittle with exposure to the air. It is highly absorbent when dry, increasing in volume four or five times when immersed in water. When ...ss bank where ...r's patience, skill, the 'feel' of soap and is ...uld be necessary, efficient cleanser when ...boy I remember...ap.

...ner paper entitled "Oc... Bentonite in Southern Ar... is in part:

"... no record of the com... duction of bentonite as ...nsas up to the present although fuller's earth has been mined intermittently in the state from 1891 to 1922. Very nearly all of this was obtained from decomposed basaltic dikes. Recently three bentonite deposits of close stratigraphical relationship have been identified in the coastal plain region of southern Arkansas, which suggests that there may be a considerable quantity of commercial material available.

Location and Accessibility.

"The three deposits are located respectively in the southeast quarter, southeast quarter, Section 13, Township 2 South, Range 13 West, Saline county, the southeast quarter, southeast quarter, Section 18, Township 5, South, Range 16 West, Hot Spring county, and in Section 22, Township 12 South, Range 19 West, Ouachita county. The Saline county deposit is 14 miles by state highway 167 south of the city limits of Little Rock and one mile west by dirt road. This deposit is 12 miles south of Ward switch on the C. R. I. & P. railroad and 11 miles east of Vimy Ridge by dirt road. Vimy Ridge is also on the C. R. I. & P. railroad.

"The Hot Spring county deposit located in the southeast quarter, southeast quarter 18, Township 5 South, Range 16 West, is about 100 yards north of Durian switch on the C. R. I. & P. railroad and on state highway No. 9, five miles southeast of Malvern.

"The Ouachita county deposit has not been accurately located but lies in Section 22, Township 12 South, Range 19 West. It is approximately two miles by road from Chidester on the Missouri Pacific railroad.

Discovery and History of Deposits.

"The Saline county deposit was mined intermittently for two years, 1904 and 1905, by a Chicago firm, the Fuller's Earth Company of America, which, according to statements made by local residents, removed approximately 250 tons during that period. No deferal or state production statistics are available. The material was hauled to Vimy Ridge, where a portion was shipped to Bauxite for crushing and drying and a portion was shipped wet. The material was used for clarification of animal fats and cottonseed oil. A small excavation, about 60 feet long and 70 feet wide, was made on one outcrop of the deposit. The area is now wooded and the excavation overgrown. The identification of this deposit as bentonite was the result of a sample submitted to the Alfred University ceramic laboratory on February 3, 1928, by the Arkansas Geological Survey. The sample was collected by T. P. Foster of Little Rock, at the suggestion of the writer. The identity of the material was later verified by C. L. Thompson of the department of Ceramic engineering, University of Illinois, and W. Harold Tomlinson, Swarthmore, Pa.

"The Hot Spring county deposit was uncovered in June, 1928, during the construction of state highway No. 9. A sample submitted by D. S. McCray was found to be identical with that of the Saline county deposit.

"The Ouachita county deposit was reported by W. C. Spooner, geologist of the Arkansas Geological Survey, while engaged in mapping the Tertiary formations in Ouachita county.

Extent of Deposits.

"The extent of the Saline county deposit has not been determined definitely. Borings have demonstrated, however, that there is at least one acre of this material and the occurrence of the material and topography are such as to lead one to believe that there is very much more than this in this locality. One drill hole shows 12 feet of the deposit and another, 200 feet away, shows 9 feet of the deposit. The thickness at the outcrop is about 5 feet. The overburden varies from nothing to probably 10 feet.

"The area of the Hot Spring county deposit has not been outlined, but the topography and geology are approximately the same as that of the Saline county deposit. Boring in the deposit in the road cut at Durian shows a thickness of 6 feet. The overburden varies with the topography from nothing to about 8 feet.

"The Ouachita county deposit, which was reported by W. C. Spooner, is near the gravel highway between Chidester and McNeil. The

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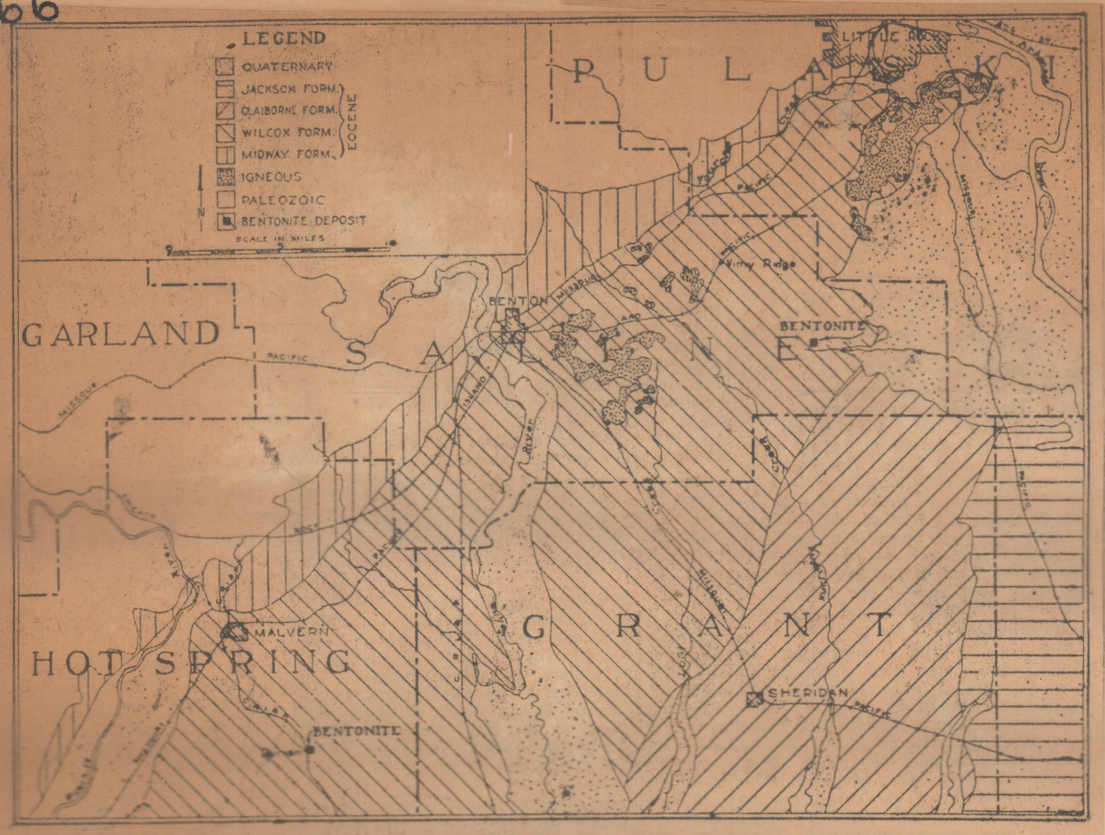


The small solid black squares show the location of the two bentonite outcrops which T. P. Foster believes are connected by more or less continuous beds of this valuable mineral. He holds leases on both these properties and is now busily engaged in acquiring mineral rights on promising intermediate tracts where drilling explorations have revealed other deposits beneath a light overburden. Incidentally, the name "bentonite" was not derived from the city of Benton, near which one of the outcrops occurs, but was first applied to the mineral upon its original discovery many years ago in Wyoming.

thickness varies between 12 and 18 inches.

"An item of considerable interest concerning these deposits is that although the Hot Spring county deposit is about 30 miles southwest of the Saline county deposit, the distance from the base of the Wilcox formation southeast to each is approximately 8 miles. This suggests that they are a part of the same zone of deposition, which may be more or less continuous between these two points and probably connects with the Ouachita county deposit. Some prospecting between these two deposits is now under way. The northeast extention is cut off about 4 miles from the Saline county deposit by Pleistocene lowland beds.

"Assuming this material to be windblown volcanic ash deposited in inland bodies of fresh water, it is probable that the bentonite deposits are lenticular and discontinuous, although W. C. Spooner stated to the writer that his experience in mapping the Eocene deposits of southern Arkansas leads him to believe that these lenses could cover an area equal to a square mile. It appears that the bentonite beds are thickening to the northeast, as the thickness in the Ouachita county deposit is from 12 to 18 inches whereas it has been bored to a depth of 10 feet in Saline county.

"It is not unusual to find that the conditions giving rise to the formation of bentonite may persist over considerable areas. According to a statement made to the writer by W. Z. Miller, 'there are two beds of bentonite, respectively, about 2 and 3 inches thick, which lie, respectively, 5 feet above and 4 to 6 feet below the fence-post marker of the Greenhorn line (Upper Cretaceous) in Kansas. Either one or the other of these bentonite beds is present over an area of at least 35 townships in Rush, Ellis and adjoining counties wherever the Greenhorn line outcrops. This bentonite may be readily persistent over a large area.' According to E. T. Hancock, several thin beds of bentonite occur about 15 ft. above the top of the typical Mowry shale (Upper Cretaceous) and make a persistent marker in the Upton Thornton oil field, Wyoming.

Character of Material.

"The material when penetrated is a yellowish color with a slight green cast and is slightly translucent. It is always damp when encountered, has little plasticity and has somewhat the physical characteristics of a very compact cheese. It is brittle and usually breaks with a conchoidal fracture. The upper portion of the bed is usually lumpy and contains iron discolorations along the seams. On drying the material hardens, cracks and becomes creamy white.

"A report from Charles E. Binns, director of the New York State School of Clayworking and Ceramics, Alfred University, Alfred, N. Y., concerning the Saline county deposit, states:

"'Concerning sample of clay No. 1077, which you sent here and which I pronounced to be bentonite, I believe that you have here a valuable material. Its use in the suspension of enamels, in increasing the plasticity of short clays, and as an ingredient in glazes, seems to afford quite promising possibilities.'

"The occurrence of these three bentonite deposits in what are relatively similar stratigraphic positions suggests that there may be large quantities of this material in a zone following roughly a line connecting the Saline, Hot Spring and Ouachita county deposits with the thicker deposits to the northeast. The material is accessible, easily mined, and may be of future importance."

CAMDEN BOASTS OF ART POTTERY PLANT

Cam-Ark Wares Sold in All Parts of United States and Canada.

FINE PRODUCTS OF CLAY

Skilled Potters From Ohio Teach Arkansans an Art That Reaches Back Into Antiquity.

Gazette 4/10/29

By Fletcher Chenault.

(Staff Correspondent of the Gazette.)

Camden, April 9.—In a world which moves with utmost precision along the well-worn grooves of commerce we seek the gay lights and colors of romance to relieve the monotony of the commonplace in business.

The burghers of Camden, for example, scanning the episodes of the world in their morning papers, wherein Tragedy and Comedy strive for the spotlight, may visualize with pardonable pride the manufactured products of Camden headed for distant markets along all the beaten paths of world trade.

They can shut their eyes and outline a picture in imagination of Camden cotton piled high on the docks at Liverpool. They can fancy long crates of Camden screen doors lying on shipboard in the roadstead of Rio de Janerio, Camden paper stacked in the warehouses of Montevideo, Camden pottery on the counters of Brest, and Camden oil and gasoline afloat in tank ships on the blue Mediterranean.

To what dizzy heights may our ambitions soar! Here a busy little inland city striving for prominence as one of the workshops of the South! And when and if the distant consumers read this article they will receive further assurance, if further assurance is needed, that Camden wares are guaranteed not to fade or rip at the seams, or shrink when washed.

Camden Potters Busy.

But the time has come to pay a justly deserved tribute to the ceramic art, one of the oldest associated with the progress of the human race, and one that can trace its origin to the dust of buried centuries.

Camden lies in the heart of Arkansas' vast clay and lignite beds and is served by the mains of the Arkansas Natural Gas Corporation, and has at its disposal all the electrical energy that can be generated by the mammoth Arkansas Power & Light Company. We find an ideal industrial setting here for a ceramic plant which combines in its products all the intricacies of art and all the utilitarian needs of the trade.

When Jack Carnes, former Ohio aviator, began to receive orders for his wares from fashionable art shops of the East and Canada, he perceived the necessity of adopting a trademark that would insure favorable publicity for his town and state. Consequently, when the Arkansas tourist upends a vase of artistic design in a far city, and finds the words "Cam-Ark" stamped thereon within a miniature outline of the state boundaries, he will not feel, ashamed of this contribution by the state to the art and science of our modern times.

Man's striving for perfection in the fine arts was manifest even back in the Chaldean cities of Babylon and Tyre, whose glories perished long before the light of civilization illumined the world, and in the ruins of those forgotton cities has been unearthed marvelous ceramics of the time.

The same potter's wheel used by the ancients, and the same skilfull methods of moulding clay, may be noted today at the modern "Cam-Ark" plant. But the modern equipment includes also the great kilns heated by natural gas, the hundreds of plaster of Paris moulds, and artists who add their skill with paint and brush to the time-honored skill of the potter.

In addition to painting vases, the artists also must draw designs for art tile mantels. In the Cam-Ark factory 95 shapes and 36 color combinations have been perfected, and others are added to the list from time to time. The wares include jugs, vases, candlesticks, lamps, flower pots, and many other useful and ornamental articles.

These Arkansas products are in favor wherever the eyes of beautiful women are attracted by cleverness of design, and Cam-Ark wares are found on the mantels and center tables in many unexpected places. The mail on the Carnes desk today included an order from the Lord and Taylor art shop in New York and another from an art shop in Victoria, B. C., and it would be safe to assume that Sam W. Reyburn, head of Lord and Taylor, if he had known about it, would have heartily approved the purchase of a manufactured product of his native state.

The Valencia Vase.

More than 1,000 years ago a beautiful wine jug was fashioned for the tender hands of a queen by the skilled potters of Damascus. It was of artistic shape and delicate in design, and it was studded, moreover, in flashing jewels. This vase was seized as the spoils of war at the storming of Damascus by the Count of Valencia, and for many centuries thereafter graced the homes of the grandees of Spain.

This famed wine jug now reposes in the Toledo (O.) Museum Art. Jack Carnes, when he discovered it there, obtained the plans and specifications and ordered his potters to make a replica of the queen's toy, and this replica, moulded out of Arkansas clay by Arkansas hands, some day will grace the home of an American queen, of whom there are many, praises be!

Cam-Ark's skilled potters were imported from Ohio, one of the pottery centers of the United States, and they are training native Arkansans in the trade, who will become, in turn, skilled potters, and who will teach others, in turn, when the fame of Camden's marvelous clay begins to spread and Camden becomes, as it should, one of the pottery manufacturing centers of the South.

Thus we are made aware that young Carnes not only is laying the foundation of a private manufacturing enterprise which turns out products in demand far from the source of supply, but that he is the pioneer also in an industry which, aided by the celebrated Niloak ware of Benton, will carry the fame of industrial Arkansas along all the highroads of trade and commerce.

Which is all very well, indeed.

New Brick Firing Method Introduced in Arkansas

Gazette Sunday- 2-16-30

By M. C. BLACKMAN.

(Staff Correspondent of the Gazette.)

Malvern, Feb. 15.—A brick, before it goes through the ordeal of fire, is about as useful as the mud pies little Mary stirs up in the back yard. Hence, the kiln—the brickmaker's culinary department—is of primary importance in a brick plant.

This week, the Acme Brick Company began operation of a new type of kiln at its plant at Perla, a couple of miles from Malvern. Your correspondent proposes to describe that kiln, the first of its kind in the state, from the viewpoint of a layman who never before saw a brick in the making.

H. E. O'Neal, superintendent of Plants 1, 2 and 3 of the Acme Brick Company, at Perla, conducted his visitor through the entire plant, from clay piles to finished product, and patiently answered a great many questions.

The clay, which is the principal ingredient of bricks, comes from a pit a couple of miles from the plant, and is hauled to Perla by the company's own narrow-gauge railroad. There are almost unlimited quantities of brick clay in the vicinity of Malvern, and experts say it is of excellent quality.

The carloads of clay are dumped under great sheds at the plant. The hunks of clay are crushed and then screened into a fine, gray dust. It is then ready for mixing, or "pugging." When the clay, sand and coloring materials, consisting of manganese ore or red ironrock, and are stirred up with water, the result is a stiff mud paste.

The paste is forced into a mould which operates on the same principal as a sausage stuffer. The compressed paste comes out of the snout like toothpaste out of a tube—in a continuous ribbon.

Cut by Wires.

The ribbon of mud paste is cut into bricks by piano wires strung on a frame. The frame drops at regular intervals and behold! there are your bricks. Workmen pick them from a conveyor and stack them on drier cars.

The product at this stage is called green brick (even though they are gray!). They are firm and have the dimensions of bricks, but you can squeeze them out of shape with your fingers.

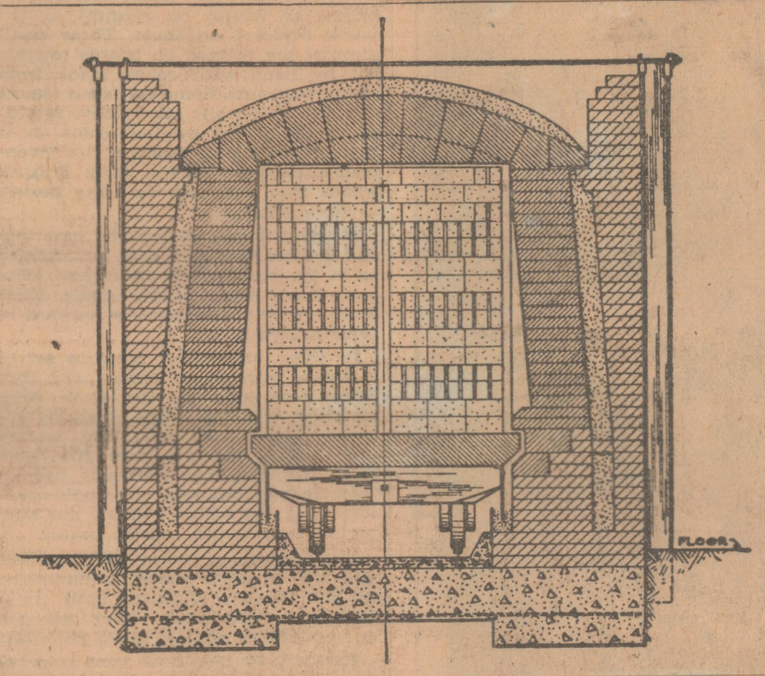
Before going to the kilns the green bricks must go through a drying process to remove the moisture. If subjected to fire in their green stage they would break into bits.

The drying tunnels, 100 feet long and holding 14 cars, are heated to a temperature of about 300 degrees by waste heat from the kilns. The hot air is circulated through the tunnels by means of fans, and the bricks are dried in about five hours. The drier cars, each containing 528 bricks in layers on separate trays, are trundled through the tunnels on rails.

After the drying process, the bricks are ready for the kilns.

For a decade the Acme company has fired its bricks at Perla in the old-fashioned periodic kilns. These structures are built of brick and resemble an Eskimo's igloo, if you can imagine anything so hot being compared with something so cold.

The green bricks from the driers are carried into these igloos and stacked to the vaulted roofs. Then the kilns are sealed with mortar and the gas fires are turned on. The temperature is gradually increased until the maximum of 2300 degrees is reached; then it is decreased and the bricks are finally allowed to cool. Smokestacks connected with the space under the floor of the periodic kilns cause a suction which draws the heat through the bricks.



Cross section of car tunnel kiln.

It is a comparatively slow process, requiring an average of 15 days including the time required for preliminary heating and for cooling. Other drawbacks are that the weight of the bricks sometimes warps those on the bottom and the heat is not evenly diffused, causing different shades of coloring. Mr. O'Neal pointed out two stacks of bricks which were made from the same mixture and burned in the same kiln. One stack was a rusty red and the other a light cream color.

New Kiln Is Simple.

Because of these undesirable features, the Acme company has built what is known as a Harrop Car Tunnel kiln, which is designed to correct the faults of the periodic kilns, in addition to saving fuel, labor and time.

The new kiln, installed by the Harrop Ceramic Company of Columbus, O., is as simple as it is effective. As the name implies, it consists of a long tunnel—the one at Perla is 410 feet long—through which brick-laden cars are shunted on steel tracks. It is six feet high and five feet four inches wide.

As the drier cars come into the kiln shed the bricks are transferred to kiln cars. Each one holds 2,142 bricks, stacked and "tied" in such a fashion that they will not warp nor fall off. The cars have cast iron frames and refractory tops.

One end of the tunnel is called the charging end. The cars pass through a check gate several inches smaller than the tunnel passage and then are pushed into the tunnel entrance. The temperature at the entrance is 70 degrees, room temperature.

The tunnel will hold 58 cars and a fresh car is started through every hour. A hydraulic ram pushes all 58 cars in the tunnel at once to make room for the new car, and each time one is put in, a car of fired bricks—the finished product—is ejected at the far end.

Thus, the cars move through the tunnel in jerks, remaining one hour in each spot. The temperature of the tunnel is graded, beginning at 70 degrees at the charging end and rising to a maximum of 2,350 degrees in the center of the tunnel, where the furnaces are located. From the mid-section to the discharging end the temprature decreases gradually to room temperature again.

No Fuel Wastage.

The heat from the cooling bricks at the discharging end is used for preheating those coming in from the charging end; thus, there is no wastage of fuel in preliminary heating. The bricks are ready for the fire when they reach the furnaces in the center. During the actual burning process they pass from one degree of heat to another until the maximum has been reached and passed, and then they move out of the fire zone and begin to cool.

The Acme furnace is one of the largest in the country. It has 14 furnaces, seven on either side. Combustion is easily controlled by the fireman and any desired atmospheric condition within the kiln may be maintained. By adjusting the temperature the various shades of bricks are obtained, and the heat is checked by instruments called thermocouples which are read regularly and recorded on a chart.

The advantages of this system are obvious. There is no time lost in allowing the kiln to cool, and no fuel lost in preliminary heating. The gas furnaces are kept going day and night, and the heat developed is transferred to the bricks with such efficiency as to result in a saving in fuel over the old method of 70 to 85 per cent.

Operating on an hour schedule, the Harrop car tunnel kiln turns out 124,236 bricks in 58 hours—58 cars loaded with 2,142 bricks each. The old periodic kilns fire an average of 80,000 bricks in 15 days. With the heat thus controlled and maintained 24 hours a day, the bricks are burned to a uniform color.

Since cast iron will melt in a temperature less than 2,350 degrees, it may be wondered why the cars and the rails of the track do not melt and collapse when they are subjected to the maximum heat of the furnaces in the middle of the tunnel.

Cars Are Protected.

As a matter of fact, the cars escape the great heat that is turned on the load they carry, in this manner: Protecting plates along the sides of the cars form a smaller tunnel underneath the cars when they are jammed closely together in the passage. A cool current of air (only 300 degrees!) is forced through this lesser tunnel, thus protecting the cast iron equipment from damage.

The walls of the tunnel are divided into three parts. There are two nine-inch layers of bricks separated by a material known as "Sil-O-Cel" which is found in California in natural deposits. It is a non-conductor of heat, and the outer walls of the tunnel are little more than warm.

Where the gas burners are located there are small openings through which the firing bricks may be seen, and it was interesting to your correspondent to note that a white-hot brick looks like nothing so much as a brick of delicately tinted ice cream!

The Acme company is not abandoning its periodic kilns, of which there are a dozen connected with Plant No. 1. The new kiln is merely an addition to the factory, and, with the new machinery room recently built, constitutes Plant No. 3.

The Acme Brick Company, organized in 1891, operates 10 plants in Arkansas, Texas and Oklahoma, with an annual capacity of 150,000,000 face brick. Charles Sewell is superintendent of the Malvern district and Mr. O'Neal is superintendent of the three Perla plants.

The Wonders of the Ouachita Mountains,

Map of Rich and That

Valleys and River

velopment

By John R. Fordyce.

Col. Engineer O. R. C., U. S. A...

This is a tale of the mountains, the valley and the river called Ouachita. The tale tells of this section of Arkansas, its inflence on the past, and the present and attempts to look into the future and predict what will happen here.

Let s climb to the tops of Rich mountain, on the eastern border of Oklahoma and western border of Arkansas, near the little city named Mena for Holland's queen. To the northeast we see the northern ranges of the Ouachita mountains, which form the northern rim of the Ouachita valley. Nearest us are the Fourche mountains, then the Mill creek mountains, then the Muddy creek, then the Blue and then the Zigzag range surrounds Hot Springs. The river breaks through these and following around to the south we come to the Mazarn, the Crystal, the Caddo and then nearest us on the southeast the Little Missouri range.

If you would know the beginning of the river, let the Forest Ranger tell you what he saw from his hill-top tower:

"Or, from the darkened glen
Saw God divide the night with flying flame
And thunder on the everlasting hills."

The storm breaks and dashing from ledge to ledge the water gathers into rills and runs and forms the rivers of the valley.

Modern maps have become so cluttered up with railway lines and highways that the rivers with their tributary creeks and bayous are hardly noticeable to a casual observer. In the accompanying sketched may. I have shown the rivers and creeks which tumble down the side of the Ouachita mountains andmake the Ouachita river but I have left out the railways and highways.

The Huge Drainage Basin.

The drainage area of a river is that part of the earth which gathers the rain which makes up the river. Most readers will be surprised when they look at this map and see how much of the state of Arkansas is included in the Ouachita river drainage basin. There is approximately one-third of the total area of the state embraced in this section.

The northern and eastern rim of the Ouachita basin is partly natural and partly built by man. Beginning a short distance north and east of the city of Mena which is the city of the basin, a man could walk along this watershed to the southern border of the state and never get his feet wet, as he would cross no srteams.

This rim leaves Polk county at its northeast corner, froms the boundary between Scott and Montgomery, enters Yell, passes north of Garland, crosses the southern part of Perry and the northern boundary of Saline, ther winds back and forth between Pulaski and Saline, crossing the north eastern tip of Grant, and enters Jefferson where it plunges into the Arkansas river at Red Bluff. From this point on it divides. The natural branch forms the rim between the watershed of the two subvalleys of the Ouachita, the Saline valley on the west and the valley of the Bayou Barthalomew on the east. This natural rim forms the hill country or southeastern Arkansas and on it are located the splendid little Star City in Lincoln county, Monticello in Drew county and Hamburg in Ashley county. This ridge is high and is a healthy place to live and a great future is in store for these people, as factories are located here. Some day a railway will run from Pine Bluff down this ridge to Hamburg and beyond.

The other rim begins north of Pine Bluff and is the man-made levee which keeps the waters of the Arkansas river from overflowing into the complicated drainage system of the Bayou Bartholomew, Boeuff river and Mason bayou. Another large stream, Boggy bayou, used to drain part of the country back of the levee and empty into the Mississippi river. This entrance has now been closed and these waters are carried by an immense drainage ditch into the Mason lake system of waterways. All of the waterways east of the ridge or hills find their way into the Ouachita river in Louisiana. This basin can therefore be classed as an eastern subvalley of the Ouachita river.

The western rim of the Ouachita river divides the waters of the Ouachita and Red rivers. The entire Ouachita valley is but a subdrainage area of Red river and in times past the waters of the mighty Red have found their way into the Gulf of Mexico down the Atchafalaya river without entering the Mississippi river but flowing into the Gulf west of New Orleans.

This western rim is also the site of several important towns: Nashville, in Howard county, Washington and Hope in Hempstead county and aMgnoglia in Columbia county .

The Ouachita valley is subdivided into several smaller basins or valleys. In thew est, the Caddo river forms a narrow basin through the hills. Then the Little Missouri leaps from the southern slopes of the Little Missouri mountains southeast of Mena, drain the Highland peach orchards, flows down past the diamond mines of Pike county, emptying into the Ouachita above Camden. Lower down Smackover creek carries its water and oil into the Ouachita. The El Dorado ridge forms the site for the city and on its southern slope there are several large bayousw hich drain into the Ouachita in Louisiana.

On the east there is the Moro basin and the Saline river basin.

The Saline river basin is most important. The main river starts at Benton in Saline county, although it sends large forks into Garland, Saline and Pulaski counties to gather in its waters.

One of the main branches of the Saline is Hurricane creek, which rises in Saline and Pulaski counties and flows through the Bauxite area where eight-tenths of all the aluminum ore of the United States comes from. This creek should not be confused with another of the same name over in the Bartholomew basin.

With the smaller subbasin described we are now up to the main Ouachita basin.

The Ouachita River.

The Ouachita river takes its name from the Choctaw Indian language and means Good Hunting Grounds.

The river flows between the highest mountains of the state, the peaks of the Ouachita mountains around Mena in Polk county. It gathers its waters from the mountain gorges and flows down through Montgomery county in more or less open fashion until it enters the Cedar Glades region of Garland county, after which it plunges through a wild rocky canyon of the Zigzag range which will some day be the site of Dam No. 3 of the Arkansas Light and Power Company. Flowing in a big crescent it cuts its way through the hills of novaculite and shale and passes about five miles on the south of Hot Springs. Just below the Hot Springs creek is to be the site of Dam No. 2 or the Carpenter dam, and 16 miles below this site is Dam No. 1 or the Remmel dam, which is now complete and in operation. Fifteen miles above Dam No. 2 the third dam is to be located, which in addition to furnishing hydro-electric power is to be a flood control dam.

These Ouachita lakes, which will be formed by the hydro-electric dams, will change the destiny of the whole Ouachita river valley and also of the state of Arkansas and perhaps change many conditions in the United States. A great body of water held in the midst of a country when only a narrow stream existed before will influence the rainfall and therefore the vegetation, grasses and forage crops will grow on these hills and the country will become more adaptable to stock raising. The temperatures around the lakes will be modified and vineyards and orchards will thrive with all of the changes which these things make. The mountain floods will be held back and released slowly and the bottom lands of south Arkansas and north Louisiana will not overflow. The immense areas now covered with hardwood forests will soon become fertile fields produing cotton and corn. The river which used to be so low in the summer will now become a navigable stream and boats will come up as high as Malvern. And all of this development will produce cheap power to turn the machinery of cotton mills, paper mills and all other mills which modern civilization needs to keep up its progress.

Slowly but surely the number of cotton mills in the South is gaining on the number of mills in the North. Cotton is grown here and if it is manufactured here the finished goods can be shipped anywhere in the world without back tracking and needlessly increasing the freight charges.

The center of population of the United States is slowly drifting our way and cotton factories here will be able to take advantage of shorter freight hauls. The river rates to New Orleans will put our mills in a position to export cotton goods to the world. Our climate is milder than it is up North and our mills can be heated cheaper. With the Cotton Belt, Missouri Pacific, Rock Island and the Frisco railway, all serving the Ouachita river valley, our railway facilities can not be excelled anywhere. The cotton grown in the Ouachita river valley produces the finest cloth. Arkansas disputes second place with the cotton growing states.

The Labor We Offer.

I have saved to the last the greatest reason for locating cotton mills here and that is labor. Arkansas produces men of the pure Anglo-Saxon type. In the early days of our country the hardy pioneer from the Eastern parts of the United States came here in great numbers overland by the covered wagon and up the rivers by steamboats. Whole neighborhoods chartered steamboats and moved over enmasse. Along all the high ground between the rivers you will find their homes and towns. They have dug in and have held the line while the people back East have enjoyed the fruits that these pioneers produced. Many of the brightest men in the state today are sons of these backwoods fathers. Many of the men whom the nation honors came from this stock and not a few from Arkansas. Let no man say that Arkansas can not furnish competent labor for Arkansas cotton mills.

Can any one be so dumb as to believe that our native Arkansans can't compete with the labor now used in the Northern mills? The time will come when the brand "Made in Arkansas. Let the Buyer Remember," will be demanded by the people of the world.

Cotton goods and paper pulp are not going to be the only things produced in this great Ouachita River Valley. Already our cutover timber lands and our bauxite lands are producing wonderful orchards. Many of these ridges between the rivers are so located and have soils and location that will make them desirable orchards and vineyards. The success of the great Highland Orchard can be duplicated in many places. The fertile ridge running from Malvern to Princeton and to Fordyce for fifty miles has the same soil characteristics as Highland in Pike county. It is high and drained on one side by the Ouachita and the other side by the Saline river. The Missouri Pacific crosses this ridge at Malvern. The Rock Island skirts both edges, the Cotton Belt crosses it at Fordyce and a log road runs right into old Princeton, the heart of las county. The people along ridge are the descendants of s of the finest folks that ever cam Arkansas. Many have moved a and have held high places in the fairs of the nation. A lot of the are left and I am looking for g things from this section of the chita River Valley, when opportu comes. Some day I hope to see t loads of peaches, grapes or bem rushing to market from Dallas cou

Nature produced some wonde pine forests in this Ouachita Ri Valley. The mills of Grant, Jef son, Cleveland, Drew, Ashley, Brad Calhoun, Ouachita, Nevada, He stead, Howard, Pike, Clark, Monte ery, Garland, Saline and Hot Spr counties have brought millions of l lars of wealth into this state. soil could reproduce this wonde primeval growth of pine and it do it when our state Forestry Ser gets into action. Think of the g value of this lumber crop for ye to come if this problem is han with intelligence. Chemists h solved the problem of making pa from our southern yellow pine soon enormous pulp mills will dot area. May the day soon come w you can hold a sheet of the fi paper to the light and read Arkan as the watermark.

There is a wonderful growth hardwood trees along the rivers creeks. These trees are being ham north now to be worked up into fur ture, auto spokes, barrel staves a agricultural implements. As our ley grows in population and wea they can be worked up here. A auto spoke and body factories here.

The Wealth of the Valley.

The forests and fields will do th

The Ouachita Valley in History.

The outstanding historical events in the development of the Ouachita Valley have been as follows:—

1st. The expedition of De Soto, the members of which were the first white men who visited this valley.

2nd. The exploration and settlements of the French.

3rd. The Louisiana Purchase which included the Ouachita Valley.

4th. Aaron Burr's Western Empire was located in the Ouachita Valley. This turned the eyes of the Easterners to the developments of the West.

5th. The settlement of the American Pioneers.

6th. The little towns of Washington and Hot Springs in the Ouachita Valley were the places where Sam Houston and his fellows met to plan the revolution in Texas.

7th. The Civil war which changed conditions in agriculture.

8th. The building of the railways into the Ouachita River Valley by Roswell Beebe of Iron Mountain, and Samuel W. Fordyce of the Cotton Belt and Kansas City Southern. And later the building of the Rock Island Railway and extending the Frisco Railway.

9th. The development of the sawmill.

10th. The development of the Orchards.

11th. The development of the Bauxite Deposits.

12th. The development of the clay products.

13th. The discovery of oil and gas.

14th. The building of the Highways.

15th. The building of the hydro electric dams and the development of the Arkansas Light and Power Company by H. C. Couch, making possible the next great development which will be the coming of the manufacturing plants.

16th. The development of the deep water transportation from Malvern to New Orleans.

part to increase the wealth and importance of the Ouachita Valley but these are not our only sources of wealth. The wells, the mines and the quarries are all turning out wealth. Beginning at the south end of the valley there are the millions of feet of natural gas and millions of gallons of oil which Union, Columbia, Ouachita and Nevada counties are producing and our geologists tell us that soon many other areas will be developed and deeper sand will be discovered. In the southwestern part of the valley bordering the Red river valley, there are vast deposits of chalk and shale from which the finest Portland cement can be made. Great deposits of marl for fertilizer. Pike county has an asphaltum deposit which was used in making one of the finest pavements in Little Rock. The diamond mines of Pike county have produced more than five thousand diamonds equal to the finest ever produced. The lignite beds of Ouachita county are oil bearing and paints, oil and many useful products can be distilled from them. The clays of Ouachita county, Dallas, Hot Spring, Grant, Saline an Garland are now being used to produce the finest bricks and pottery and can produce ceramic tile, roof tile and various other products.

The bauxite mines of Saline county produce 80 per cent of all bauxite mined in the United States and there are millions of tons still under the wise handling of the American Bauxite Company. A splendid system of mining is being developed and a great work is being done by the company in developing the workmen and looking after their welfare. This project has set the pace which others may well follow in mining development.

Among the natural wonders of the Ouachita valley is that strange place called Magnet Cove, in Hot Spring county. Here in the midst of the sedimentary rock is an uplift of ingenious rock which seems to have brought to the surface of the earth a strange assortment of the elements which made up the world. Here are minerals which are found in no other known place in the world and other minerals found in but few places. This cove is better known to mineralogists of Europe than to the state of Arkansas. It was known to the Indians and large village sites exist in the neighborhood where many stone implements have been found here. In the novaculite hills surrounding the cove are large pits from which the Indians got the flint to make arrow and spear heads, tomahawks and knives. They probably built fires around the cliffs and then threw water on the hot rocks and cracked them up, then pounded the pieces until approximately the size and shape was obtained and then finished them up with a small piece of notched bone. The Indians used pieces of magnetic iron ore for hammers. This ore is found on the surface of the ground in the cove and is very heavy, hard and tough. These Cove Indians probably traded these flints over all this part of the country for things other Indians produced. Not till the introductions of guns by the white man did this industry die down.

From the number and size of these pits on the Novaculite Ridge it is estimated that the flint mining may have gone on for thousands of years.

Now turn your eyes from the past and look forward into the future. These same flint hills with their almost limitless deposits of flint or silica will perhaps again be of commercial importance. Dr. Berry of the Scientific Laboratories of the General Electric Company has perfected an electric vacuum furnace which is capable of melting up this silica and making a transparent substance similar to glass. This substance has been written about a great deal recently. It will make a substitute for window glass which will permit the ultra violet rays of the sun to pass through. These rays have a peculiarly beneficial effect on the human system and on growing plants. The hydro-electric dams with cheap power will make it possible to produce this fused silica at prices at which it can be extensively used. Thus another great industry will be added to the Ouachita river valley.

The lakes formed by the hydro-electric dams will transform this section into one great summer resort. Fishing, bathing, boating and hydro-planing will add to the many amusement features. Highways will be built around the lakes and summer resorts, amusement parks and cottages will spring up when the people will be established and wild game retreats created. Wild swans, geese and duck already come here and with these lakes to draw them their number will increase.

As one gets back toward the headwaters of the Caddo and Ouachita rivers, one gets into the United States Forest Reserves with all of their wonderful forests of pine, oaks, hickory, walnut, maple, both rock and sugar, and great beech trees from one to three feet in diameter. Up toward Mena the mountains get higher and higher. Great peaks of slate rise abruptly from the neighboring hills and dominate the landscape. They are called Fodder Stack, State House, Bald Eagle, Smoke Rock and other fantastic names. The good people of Mena want a National park established here. It certainly is a beautiful wild and rugged country and is just suited for park purposes. When you consider the places that have been made into parks out West and the reasons that have caused them to be taken over you can see that this region possesses features that none of these have. A great park is needed here in the middle South for the use and enjoyment of the people of Louisiana, Texas, Oklahoma and Arkansas. Here's hoping that this region can be made into a National park soon. All of the neighboring states ought to pull for it.

When transportation by rail is nearer, the great deposits of slate in these hills will have a great commercial value.

Hot Springs National Park.

Crowning all of the wonderful things of the Ouachita river valley is the Hot Springs National Park, with its springs of healing waters, its world famous bathhouses and hotels, its mountain drives and parks, its clear streams and swimming pools. The highways from the southeast and west meet here and thousands of summer tourists are coming through every season on their way to the North, East, South and West. When hard surface roads are completed so that tourists can travel over them in the winter, the tourists from the North, Northeast, and East on their way to Mexico and California will pass this way. Hot Springs National Park will grow into a section of the country and these hills will be covered with winter homes of the Northern folks, who want to come South for a milder climate. It will become the home town of thousands of oil field folks, who want to get away from the smell and feel of oil and the home town of the owners and operators of the cotton mills and orchards and vineyards. All of these folks have families and these will need schools. Already educators from various parts of the country have Hot Springs in view as the location for schools. It is becoming more and more evident that a winter school should be located in a milder climate and many northern institutions are seeking Southern locations. So our look into the future shows Hot Springs National Park a collection of mill villages and the surrounding hills dotted with winter homes of Northern visitors and a much larger town made up of homes and schools located around the beautiful Ouachita lakes.

The new Arlington hotel, costing three million dollars, has set a new standard for resort hotels and attracts the most fastidious wanderer in search of health or pleasure.

When one sums up the things which are making Arkansas famous and causing it to be called "the Wonder State" it is surprising how many of these things are located in the Ouachita river valley. Among the minerals we find natural gas, oil, clays, chalk, asphaltum, bauxite, slate, novaculite, galena, iron ore, pyrite, with traces of silver and gold.

Among the forest products are pine for lumber and paper pulp and hardwood of many kinds. There are orchards and vineyards, cotton and corn and all sorts of garden produce and berries and melons. Health giving mineral waters, both hot and cold. Mountain streams and rivers, national forests, National Park. Wonderful places to lead an outdoor life in both winter and summer.

Auto-hiking is mentioned as our fastest growing sport and these wild gorges and valleys with their forest reserve roads, state and county highways are the ideal places to hike.

The fertility of the soil, the riches of minerals, mildness of climate and beauty of scenery make this Ouachita river valley the most desirable place in the whole country to live, prosper and be happy.

ARKANSAS POTTERY TO BE DISPLAYED

Famous Camden Wares to Be on Sale at Blass' All This Week.

Gazette 3-30-30

Art lovers of Little Rock will have opportunity this week to see displayed, and to acquire for their own use, one of the most attractive and best known of the products of Arkansas. An entire line of Camark pottery will be displayed in the Gus Blass Company window and on the fourth floor for an entire week, beginning today, during which a sale of the ware will be in progress.

Camark pottery is named for "Camden, Arkansas" and was perfected by Jack Carnes, former Ohio aviator, who has made Arkansas clay famous in all parts of the country. It is the newest product of the oldest of arts, and every step in the factory at Camden is executed by skilled designers, experienced potters, and expert decorators. The plant was built four or five years ago and the pottery now is made in 31 standard finishes.

Mr. Carnes advertises his wares as an Arkansas product. His trademark is the words "Camark" enclosed in a miniature outline of the state, and this trade mark can be found in all the large stores of the United States where modern pottery is displayed.

Camden lies in the heart of Arkansas' vast clay and lignite beds and is served by the mains of the Arkansas Natural Gas Company, which makes it an ideal center for pottery. The plant also is served by the lines of the Arkansas Power and Light Company.

Began on Small Scale.

Mr. Carnes started his pottery plant on a small scale, after he had found by experiments that the Camden clay is ideal for pottery, and gradually extended his output and enlarged his plant from time to time to take care of new orders. He returned to his home in Ohio and brought back skilled potters.

In the "Camark" plant may be found the same style potter's wheel used by the ancients at the beginning of ceramic art, but the modern equipment consists also of massive kilns heated by natural gas, hundreds of plaster of paris molds, and artists who add their skill with paint and brush to the ancient skill of the potter.

In the Camark plant 95 shapes and 36 color combinations have been perfected, and others are added from time to time as the output grows. The wares include jugs, vases, candlesticks, lamps, flower pots, and many other useful and ornamental articles. Many Arkansas homes are equipped with these articles, which have an added value when shown to guests because they were made in Arkansas.

In addition to painting vases, the artists also draw designs for art tile mantels, which are much in favor now.

One of the most interesting articles in the Camark plant is a replica of the famous Valencia vase. More than 1,000 years ago a beautiful wine jug was fashioned by the potters of Damascus for the tender hands of a queen. It was artistic in shape and delicate in design, and was studded with costly jewels. This vase was seized as part of the spoils of war by Count Valencia when he stormed Damascus and for many centuries thereafter graced the homes of the grandees of Spain.

This famed jug now is in the Toledo (O.) Museum of Art. Mr. Carnes, when he discovered it there, obtain plans and specifications and his potters have made replicas of the queen's toy, without, however, any jewels.

The Camark pottery is shipped to all parts of the United States and Canada, and is displayed at many conventions in the larger cities. It is known everywhere as an Arkansas product and brings great credit to the state.

Ceramics is Oldest Arkansas Industry

Gazette March 15, 1931

By TOM SHIRAS.

Pottery making is the oldest industry in Arkansas, the value of ceramic clay having been known to its ancient people, who were also skilled in its use. The earliest examples of the potter's art can be traced back to the bluff dwellers, in the dim yesterdays, who inhabited the rock houses in the bluffs along the streams in the Arkansas Ozarks.

Some of the pieces that have been recovered from these openings are unquestionably older than those taken from Egyptian tombs. Some authorities hold that the aborigine potters moulded the clay with their hands into the shapes they desired. With the narrow necked vessels however, this would have been impossible. They would necessarily have to be shaped on some sort of a potter's wheel. All of the clay used in Indian pottery is mixed with fine particles of mussel shell. What value this added to the raw clay is problematical. It might have given strength as a binder or it might have been used for its aesthetic value, giving the pieces a brighter appearance.

The oldest remains of an Indian pottery kiln in Arkansas is near Heber Springs, in Cleburne county. Thousands of pieces of broken pottery are still in evidence around this old plant, and many other relics are found in the immediate neighborhood.

A potter is as much an artist as a sculptor, a painter or one skilled in the use of engraver's tools, and the Indian potters of the far yesterdays whose examples are now dug up and kept as relics might be classed as the first artists of Arkansas. Comparing this early pottery with some of the more modern art pottery now produced in Arkansas, and considering the tools the Indians had to work with, they did very well, showing remarkable creative genius.

Arkansas is one of the foremost states in the union today in the manufacture of art pottery. Its wares are a great deal better known outside the state than in it. Camark and Niloak pottery has made a place for itself in every locality in the United States where art is appreciated. Some of these pieces are sold under false colors. Visitors to Western states sometime buy Niloak pottery for Western Indian pottery. The name has an Indian twang, and Western dealers take advantage of it. The name, however, is purely Arkansas. Niloak pottery is made from kaolin. The name Niloak is derived by speling the word kaolin backwards.

The beauty and popularity of Niloak and Camark pottery are due largely to the skill of the artists employed in its ceration. The beauty of Niloak pottery lies in the artistic blending of clays, and the beautiful shapes they are moulded into. The beauty of Camark pottery is due to the genius who is forever fashioning new shapes, to the skilled artists who decorate the exteriors and the true knowledge of firing.

The list of art pottery made at the Camark plant at Camden is much too long to be enumerated. It consists of everything from salt and pepper shakers to bird baths, including art vases, electric light fixtures and futuristic and modernistic pottery of all descriptions, with a highly glazed finish. The display room looks like the display room of some Italian importer in New York city.

All of this pottery is not fashioned on a potter's wheel. Many standard items are cast from the original pattern, just as iron castings are made, though, of course, the process is largely different.

The pattern is fashioned on the swiftly moving potter's wheel, taking shape under the artistic brain and deft fingers of the potter. It is dried, dressed and fired. Then it is set in the center of a small, upright casting box and plaster paris is poured around it. After the whole is dry, the plaster paris cast is cut away from the pattern in three pieces. These are then laid back together, clamped tight, making a perfect mold. To make other pieces of the same pattern, this mold is poured full of slop clay. The mold, being of dry plaster paris, begins at once to absorb the moisture from clay next to the walls solidifying it. As soon as this clay is solidified to the desired thickness the rest of the slop in the mold is poured off, leaving the vase or urn as a stiff clay inside the mold. This is then sent to the drying room and perfectly dried. The mold is taken down, the piece taken out, the rough edges knocked off and it is ready for decorating and firing.

An artist works out all the designs that are to go on the exterior, finishing each one completely. Girls with artistic ability then copy the original. After decorating they go to the kilns for firing.

The pottery burned at the Camden plant is made from a semi-ball or china clay. When not colered or decorated it comes from a kilns in a light ecru color resembling delf ware. A considerable quantity is shipped in this state to city markets and sold to artists for hand decorating and burning like china.

The plant maintains a special order department equipped to duplicate almost anything from a Ming vase to an Italian cream pitcher. Jack Carnes, owner of the plant, recently said, "We received a letter and a cream pitcher one day from a large New York department house asking us if we could duplicate it. They had been getting these pitchers from Italy and for some reason could not get any more and had worked up a good trade on them. They had to duplicate the pitcher or lose the business. So we started to make Italian cream pitchers for them."

Considering the wide area in Arkansas underlaid by fine ceramic clays it would be quite possible for the state to supply the world with pottery and clay products for ages to come, if enough potters could be gathered together to fashion it into useful and decorative articles.

The tertiary clays are probably the most important. They are present in a large part east and south of the Missouri Pacific railroad, south of the Arkansas river. Clay shales of the coal bearing rocks in Sebastian county are being used in the manufacture of paving bricks and other clay products. Fire clays occur under nearly all of the lignite beds in eastern and southern Arkansas, while light blue clays of good quality occur in White, Monroe, Phillips, Lee, St. Francis, Cross, Poinsett, Craighead, Greene, Clay and Clark counties.

Information About Deposits of Kaolin Sought.

Special to the Gazette. 2-26-32

Arkadelphia, Feb. 25.—A large chemical supply company has requested information about the extensive deposits of hard type kaolin or kaolinitic clays, Bentonites, graphite, Fuller's earth, ochres, iron oxides and others in the section adjacent to Arkadelphia with a view to getting regular shipments of them. Company officials said that if the deposits are suitable as to quantity and quality and situated convenient for transportation, they probably could use considerable tonnage.

KAOLIN AND PINE AND A NEW INDUSTRY. Dec 3, 1934

Having proved that newsprint paper of satisfactory quality and cost can be made from Southern pine, Dr. Charles H. Herty has turned to experiments with the manufacture of writing, coated and book papers from this material. The work will be done at the laboratory which the state of Georgia helps to maintain at Savannah, and Georgia will supply not only the pine pulp but the kaolin or china clay used as "filler" in pulp writing and printing papers. Dr. Herty says Georgia is already supplying the country with 60 per cent of the kaolin used in paper manufacture.

But Georgia has no monopoly either of pine suitable for paper making or of kaolin. Over a large part of Arkansas Southern pine flourishes if given the slightest encouragement and protection. And deposits of kaolin have been located in various parts of the state, the largest so far known being in Pulaski and Saline counties.

Detailed knowledge of the extent and quality of Arkansas's kaolin deposits is lacking. The state geologist's office has repeatedly recommended an appropriation for a complete survey of our industrial and commercial clays. But the legislature has never seen fit to provide funds for this purpose. Such information as has been collected has been incidental to other studies. If kaolin offers, with our pine forests, opportunity for development of a coated paper industry we should know definitely whether our state has adequate stores of this essential clay.

Large Supply of Brick Clay Found Near Arkadelphia.

Special to the Gazette. 5-1-30

Arkadelphia, April 30.—Geologists and brick makers who have been making a survey around Arkadelphia have found what they declare is "an inexhaustible supply of high quality clay for the manufacture of brick." This has led to efforts on the part of the Chamber of Commerce to locate a large brick plant here.

Contracts for $25,000 Worth of Brick Awarded.

Gazette 9-14-31

Contracts for $25,000 worth of masonry materials to be used in construction of the new postoffice building in Little Rock, were awarded by R. P. Farnsworth & Company of New Orleans, general contractors, to the Acme Brick Company of Little Rock yesterday. The materials will include face brick, common brick and hollow tile, R. P. Farnsworth, head of the contracting firm, announced.

More than 1,000,000 common brick to be used in wall structure, 200,000 face brick to be used in finished surfaces on the Fourth street elevation and 150,000 pieces of tile to be used on the inner side of exterior walls and in the building of partitions are included. The total order represents approximately 125 carloads or two full trains of brick. The common brick will be delivered from the Little Rock plant and the face brick and hollow tile from the Malvern plant.

LATEST POTTERY ON DISPLAY HERE

C. D. Hyten, Originator of Products of Benton Plant, in Charge.

12-15-31

Hywood pottery, the latest creation in ceramic art at the Niloak Pottery Works at Benton, is on exhibit for the first time in Arkansas at the Gus Blass Company, with C. D. Hyten, originator of both the Niloak and the Hywood potteries, as demonstrator.

In addition to a large display of bowls, vases and other pottery pieces, Mr. Hyten is holding a practical demonstration of the making of Hywood pottery. An old-fashioned cake wheel, with the wooden treadle, is used.

The new pottery, although made with the same clay as the Niloak products, involves a new process in the making, resulting in colors and finishes that are entirely new to the ceramic industry. Mottled greens and blues, shades of tan, yellow, red and russet predominate in the group on exhibit. Both mat and glossed finishes have been used.

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Advantages for Ceramic Industry Near Pine Bluff

Between This City And Camden There Are Unusually Good Deposits

Between Pine Bluff and Camden, along the Cotton Belt railroad, there are advantages for the pottery industry that can not be found in any other part of the United States.

These amazing facts were revealed this week in a report of a survey made by William Crooks, president of the Crooks Engineering Company of Pine Bluff and Little Rock, and consulting engineer for the Arkansas Light and Power company here.

Six advantages were listed by Engineer Crooks in the report of summary, as being the best in the country for the location of pottery plants within this section. These, he points out, are all that are necessary for the ceramic industry.

They are:

Enormous amounts of clay, which comprise more than half of the material used in the industry.

Abundance of flint within easily accesable distance.

Beds of felspar within a short distance.

Natural gas at a low rate for fuel, supplemented by unlimited coal fields in the northern part of the state.

Possibilities of water transportation from Camden to the gulf, and numerous railroad facilities.

Presence of electricity to operate the plants.

This sextet of advantages, he says, are together right here in this section of the country, and here only.

In making this survey, Mr. Crooks found that the pottery manufacturers are most interested in the apparent abundant supply of native white labor, which is preferred in this industry as it is in the operation of cotton mills, because of the higher order of intelligence, the quickness with which the new hands become skilled in the work and the more agreeable dispositions of the workers, which counts so much for efficient operation and the industrial contentment of the workers. It is said that there is in Calhoun, Hot Springs, Saline and Ouachita counties enough white labor to man half a hundred big pottery plats.

It is said that Thorton, which little town recently suffered the loss of a great lumber mill as the result of a fire, will be the first to make a trial of the pottery industry and that a movement already has been started to locate a plant there. It is probable ha Camden and other cities, convenient to the gas fields and the Ouachita river, will be benefitted by the movement southward of the pottery industry, for the advantages of these localities in the recommendatio ns of the engineers and the reports of the geologists.

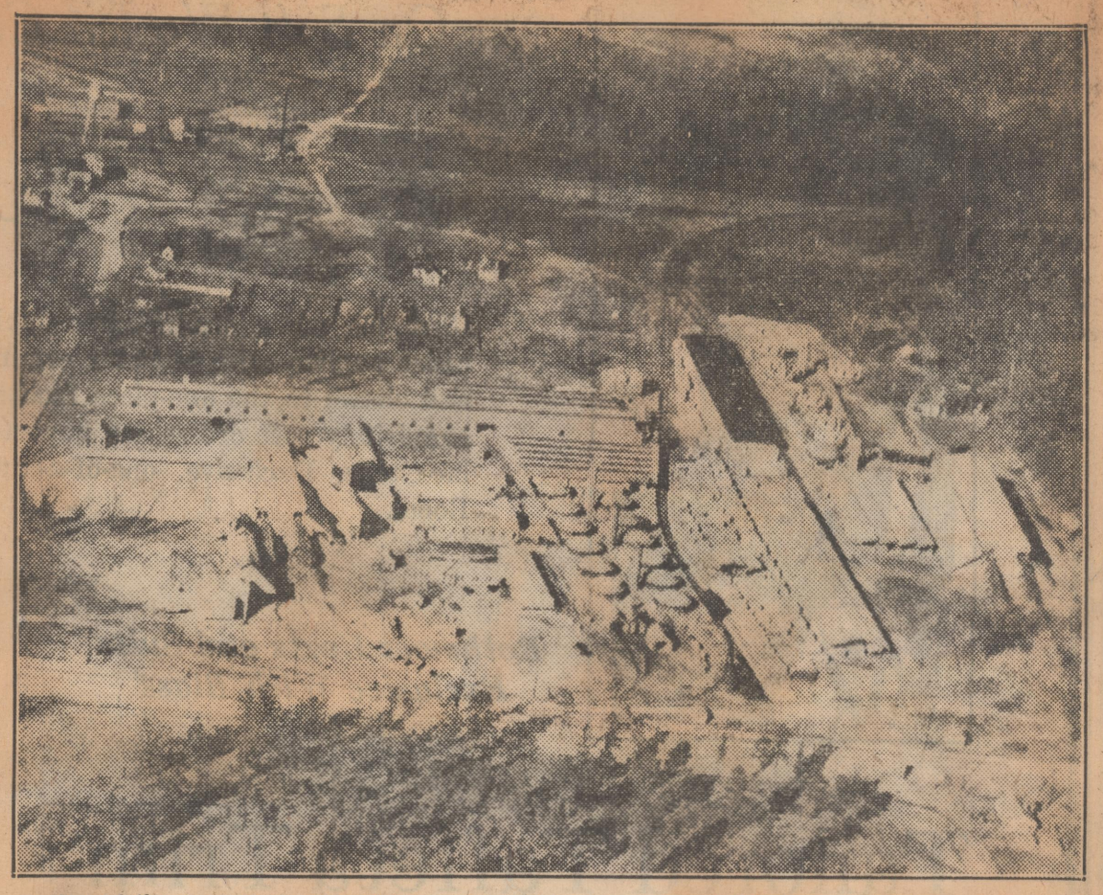
"The manufacture of pottery is one of the old est arts," says Mr. Crooks in his report. The abylonians and Egyptions, some 3500 B. C. made pottery tablets upon which they recorded their various historical events. It is imposible to determine the exact origin of pottery in China but pottery making was probably carried on by the Chinese at as early a date as by the Babylonians and Egyptians.

"To the average person the term 'pottery' probably calls to mind certain articles such as tablware and vases; however, these articles form only comparatively a small amount of the total output of the present-day commercial potteries and in the last 50 years ceramic engineering has made remarkable progress. The output of the various potteries in this country goes through a very large range of finished products.

"The word 'kaolin' has largely become used to identify almost any white plastic clay; however, a true kaolin is a white clay that has the ability to mix into a homogeneous mass and stand the firing necessary in making the finished pottery. The word 'kaolin' is the English translation of the name of a mountain in China, meaning 'high ridge,' from which China clay was secured by the Chinese and used in their potteries several thousand years B. C.

"True kaolin is not entirely plastic and it is necessary to add other clays to make up for this deficiency. This is usually done by the addition of what is known as Engiish ball clay. Tocontrol the shrinkage of the clay and prevent it from cracking when being dried and fired, another ingredient is added, and it has been found by the potters that pure flint is by far the best material to use. In order to give the body of the pottery vitrification and strength, a certain amount of pelspar is added.

View of Perla Plant of Acme Brick Company From Air



One of the country's largest brick plants is tha t of the Acme Brick Company at Malvern, an airplane view of which is shown here.

Perla Plant of Acme Brick Co. At Malvern an Immense Affair

Sept 5, 1935

A Trip Through This Great Establishment, Watching the Making of the Finest Building Material Is an Education in Itself.

A trip through the "Perla plant" of the Acme Brick Company at Malvern is an educational event worth the time of anyone who wishes to know what Arkansas offers in the way of industrial life.

You will find located in this thriving little city the Southwest's largest and most complete brick and tile industry. An enormous outlay of buildings is seen with the latest modern equipment for manufacturing high grade clay products, such as face brick, fire brick, fire clay, high temperature cement, plastic fire brick, load bearing tile, partition tile, drain tile and other products required in the building industry.

Big Supply of Raw Material.

You are first rushed out to the pit, where a 75-year survey of clay is worked by a dozen or more tractors plus necessary man power. You find the dirt stripped from four to twenty feet to get down to the finest clays. The clay is loaded into dump cars and hauled about a mile, where it is placed in storage sheds. Enough clay is kept in these storage sheds to make a six or eight months supply without having to work the pit.

A good supply of raw material is kept on hand because of the difficulty in working the pit during bad weather.

The Grinding Pan.

In these clay sheds you will find a number of men at work, because here is where the different materials are measured and dumped into the "grinding pan" which pulverizes the material suitable for manufacturing. Long conveyor belts carry the material from the grinding room into the pug mill where it is properly mixed. This raw material then drops to the auger machine, where it is pushed through a die that gives the column of clay.

From the face of the die the column is carried about eight feet via conveyor to the cutter which cuts 18 bricks at a time, and then out to the hacking belt where five or six men are employed to hack the brick on to dryer cars. Aft these dryer cars are loaded with br they are transferred to the "dryer where they are dried for 36 hours.

The Burning Process.

The setting crew takes charge aft the bricks have been properly drie Here the bricks are placed in the "be hive" like kiln or the burning, whic starts with a slow fire and is gradually increased to 2,400 degrees. It usually requires about seven days to burn a kiln of brick.

In the burning the different colors are obtained. Certain clays burn certain colors. However, the shade variation is obtained entirely through control of the fires. In one of the kilns of brick (which holds approximately 90,000 bricks) several different shades are produced. The bricks nearest the fire are darker than those placed in the center of the kiln, where the heat is not so intense.

After the fires have been turned off in the kilns the bricks are cooled for three days, and then the shading and grading are started. Each shade of brick is properly graded and stacked on the stock yard. This enables the shipper to secure straight shade or mingled shade brick.

Loading of the brick is another interesting point. The experienced wheelers who handle barrows loaded with 100 bricks, total weight of about 700 pounds, make it look easy. When you try to push one of these loads it is a different story.

A Million-Dollar Investment.

The plant represents an investment of close to a million dollars. There are four units, each making a different product. For instance at Unit Nos. 1 and 2 the different face brick are manufactured. Unit 3 is the tile factory, and Unit 4 is the refractory department.

This plant is under the supervision of C. L. Sewell, division superintendent, and his able assistants, Henry O'Neal, plant superintendent, and Leo Franz, ceramic engineer.

Sales Office In Little Rock.

The sales office of the Acme Brick Company is located at 208 Louisiana street, Little Rock, with Jack Pickens, division sales manager, in charge. This office maintains a complete display of the various brick and tile manufactured at the Perla plant. Here the prospective home builder is afforded the opportunity to select the color and design of brick that he wants in his home.

Arkansas has a number of great industries that its people should feel proud of, and should take advantage of opportunities when presented to take educational trips through these various plants, and see how products are made. The Acme Brick Company officials welcome visitors, because they are proud of this great brick and tile factory that they own and operate in Arkansas, and are anxious to have the people of the state feel proud of it.

DESCRIBES BRICK PLANT PROCESSES

Jack Pickens Invites Visits to Acme Properties at Perla.

Sept. 15 1935

Discussing vast operations of the Acme Brick Company plant at Perla, near Malvern, Jack Pickens, division sales manager, with offices at 208 Louisiana street, said yesterday that the plant represented an investment of $1,000,000.

"There are four units to the plant, each making a different product," he explained. "Units No. 1 and 2 manufacture the different face bricks. Unit No. 3 is where the tile factory is located, manufacturing different kinds of tile, and Unit No. 4 is the refactory department.

"We employe several hundred people when the plant is in normal operation. However, for the past few years we have been forced to run just part-time, but we look for the building industry to increase from now on, and that will make it necessary for us to operate more extensively.

"We have right here in Arkansas one of the finest and one of the largest brick plants in the entire country, something we feel that the state should be proud of, and if the average person would just take a few hours off and take a trip through our plant and see just how the finest bricks are manufactured, he would certainly agree that it is an interesting sight."

"Brick manufacturing is something that the average person looks on as something very simple, but when you take into consideration that the brick that looks very simple is one thing that has to last a life time after it is put into a building, you realize that it must be more to it than it really looks from the outside surface.

Suggests a Visit.

"On a visit to our plant, you are first rushed out to the pit, where a 75-year survey of clay is worked by a dozen or more tractors plus the necessary manpower. You find the dirt stripped from four to 20 feet to get down to the finest clays. The clay is loaded into dump cars and hauled about a mile, where it is placed in storage sheds. Enough clay is kept in these storage sheds to make six or eight months' supply without having to work the pit.

"A good supply of raw material is kept on hand because of the difficulty in working the pit during bad weather.

"In these sheds you will find a number of men at work because here is where the different materials are measured and dumped into the 'grinding pan' which pulverizes the material suitable for manufacturing. Long conveyor belts carry the material from the grinding room into the pug mill where it is properly mixed. The raw material then drops to the auger machine, where it is pushed through a die that gives the column of clay.

"From the face of the die the column is carried about eight feet via conveyor to the cutter which cuts 18 bricks at a time, and then out to the hacking belt where five or six men are employed to hack the brick on the dryer cars. After these dryer cars are loaded with brick they are transferred to the dryer where they are dried for 36 hours.

"The setting crew takes charge after the bricks have been properly dried. Here the bricks are placed in the 'bee hive' like kiln for the burning, which starts with a slow fire and is gradually increased to 2,400 degrees. It usually requires about seven days to burn a kiln of brick.

How Colors Obtained.

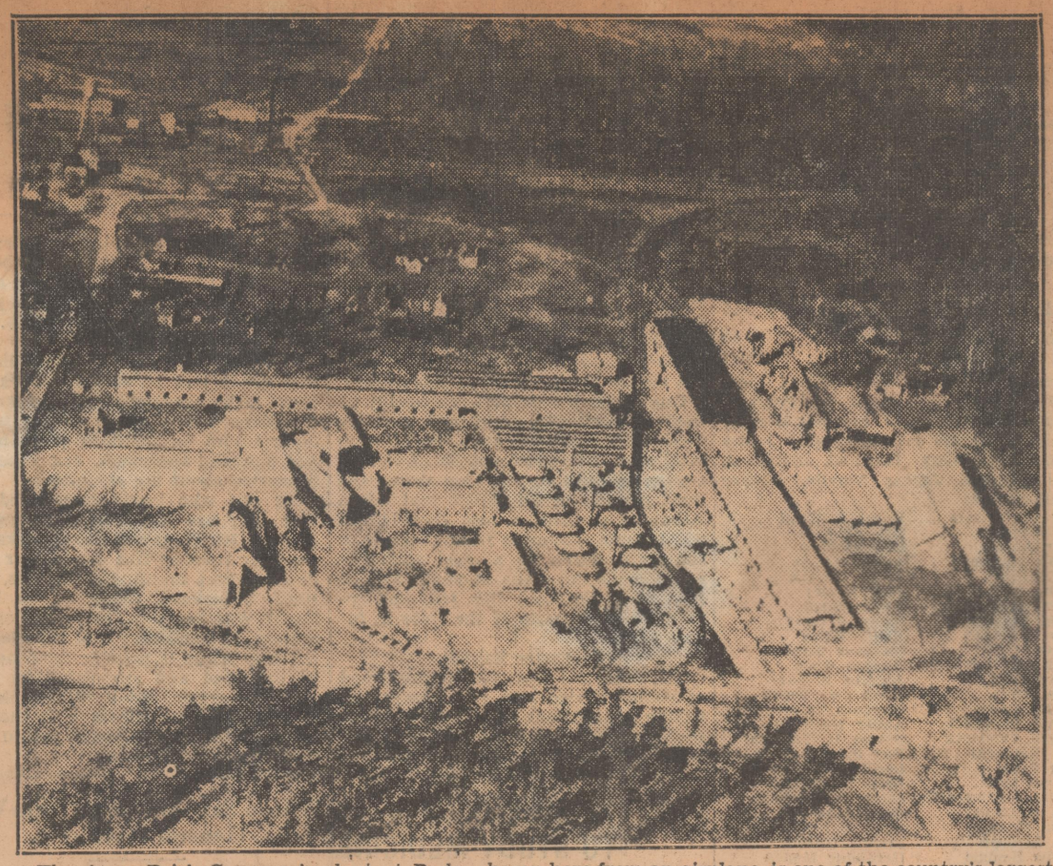
"In burning, the different colors are obtained. Certain clays burn certain colors. However, the shade variation is obtained entirely through control of the fires. In one kiln (which holds approximately 90,000 bricks) several different shades are produced. The bricks nearest the fire are darker than those placed in the center of the kiln, where the heat is not so intense.

"After fires have been turned off in the kilns, the bricks are cooled for three days, and then the shading and grading are started. Each shade of brick is properly graded and stacked on the stock yard. This enables the shipper to secure straight shade or mingled shade brick.

"Loading the brick is another interesting point. The experienced wheelers who handle barrows loaded with 100 brick total weight about 700 pounds make it look easy, when you try to push one of these loads it is a different story. However, the men are trained in their respective duties and handling these barrows of brick is comparatively easy to them.

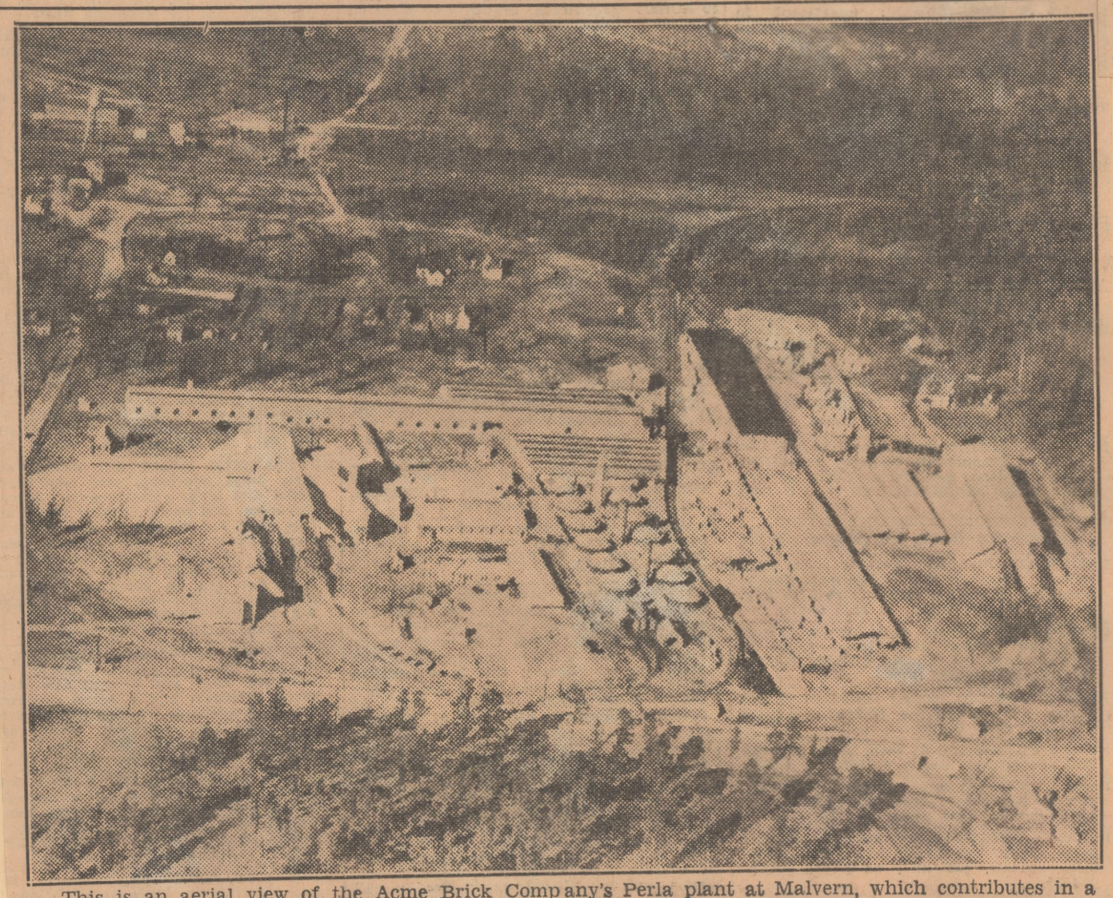
"You will find at 208 Louisiana street one of the finest display offices in the state. Here the prospective brick buyer is given an opportunity to see the brick on display that he will want in his home or building."

The Perla Plant of Acme Brick Company From Air



The Acme Brick Company's plant at Perla, shown here from an airplane, is one of the country's largest.

ACME BRICK COMPANY PLANT



This is an aerial view of the Acme Brick Company's Perla plant at Malvern, which contributes in a large measure to the industrial set-up of Arkansas.

Acme Brick Co. Official Cites Effects

Feb 6 1936

Undoubtedly one of the most important factors in the recent recovery program has been the building industry.

Its effects in overcoming the depression have been recognized not only by the leaders of the industry themselves, but by the governmental executives who have been charged with directing the recovery program. These effects have been so far reaching, in fact, that the real extent of their benefits are hard to trace finally.

None is better able to comprehend and appreciate these far-flung activities than the men who have been actually engaged the last few years in the building industry, especially those engaged in the building material supply business.

Arkansas is fortunate in having an industry that has contributed in a large measure to the building industry and the recovery program, in several distinct ways. This industry is the Acme Brick Company, which has its main plants at Malvern, an industry representing an investment of more than $1,000,000 in the state, and which plays a major part in the state's industrial life.

Jack Pickens, division sales manager for Arkansas, readily sees how great a part the building industry has played in combatting depression.

"Through the various public and private improvement projects we have seen employment increase, new money put into circulation, and best of all, we have achieved some lasting and beautiful improvements in buildings."

And, he is optimistic over the immediate future of the building industry. "Our plants are operating steadily and at above normal production to meet the demand for materials and as a result we are able to offer steady employment to our men, a feature that plays a great part in the entire economic and industrial set-up of the country.

The modern plants of the Acme Brick Company at Malvern are among the state's largest and most valuable industrial assets. Here steady employment is afforded in the manufacturing of an article that finds a market not only in the state but far beyond its boundaries and which, at the same time, contributes in many ways toward the state's development.

Both brick and tile are manufactured at its plants, among the largest of their kind in this section. Products of the Acme line include face brick, fire brick, fire clay, high temperature cement, plastic fire brick, load bearing tile, drain tile, partition tile and other products of a like nature used in the building industry.

One of the featured phases of the Acme company's operations is the handling of its raw material. The dirt is first stripped down four to 20 feet to get the finest clay possible and then placed in storage sheds, which process assures a sufficient quantity of product on hand at all times to guarantee steady operation of the plant.

The manufacture of bricks at the plant is an interesting process and one viewing them by no means realizes fully the extent of the usefulness of the operations to the state and South, both directly and indirectly.

One of the qualities stressed by the Acme Company in its marketing is the quality of the product offered. Each particular grade and line of products receives especial attention and consideration and each individual order gets equally as much attention.

It has been through this careful and consistent customer consideration that the Acme Company has established its products.

The sales office of the Acme company is located at 208 Louisiana street, Little Rock, where one of the most attractive brick and tile displays is found in the entire South.

New Industrial Firm Formed At Helena.

Special to the Gazette.

Helena, Oct. 10.—The Helena Concrete Products Manufacturing Company has been organized here and plans the installation of a factory for making bricks and other construction units known as Dunbrik.

J. E. Daniels Jr., president of the company, came to Helena about six weeks ago from DeWitt. He has been busy organizing the company here and spent most of his time in organizing this industry. He has been an architect and draftsman in the past and is thoroughly familiar with building needs.

Mr. McDaniels said that a new building will be erected at once for the housing of his company, and that machinery will be placed as soon as the building is completed. He expects to have his factory in operation before Christmas. "Already contracts are signed or in sight for the first month's products," Daniels said. The factory will employ only six or eight people at first, but a turnover of $1,000 a month will be quite an addition to the present Helena pay roll, Jack Kirkpatrick, secretary of the Chamber of Commerce, pointed out.

Other officers of the company besides Mr. Daniels are Zena Carter Daniels, secretary-treasurer, and G. D. Walker, vice president.

TVA Clay Producing Low Priced Porcelain

Democrat 1-2-36

Norris, Tenn. (AP)—A lower-priced porcelain dinner plate is on the way to market, S. T. Henry, ceramics research secretary of the Tennessee Valley Authority, predicted today.

His prediction was the result of several months experiment in which white porcelain dinner ware was produced from gray clay by electrical firing.

Henry said it was the first time porcelain had been made from native kaolin (clay) and also the first time electrical firing had been used in the process of production.

Heretofore, the clay or the finished product has been brought into this country from Europe and Asia.

Pottery Big Industry In Arkansas

Gazette 1-31-37

By TOM SHIRAS.

The manufacture of pottery is one of the oldest arts practiced in Arkansas. It is an art that is now sending its product into every corner of the world and the world likes it.

To the layman, the manufacture of pottery is one of the most interesting industries in the state. To see an ugly, sodden lump of clay rise up into a beautiful shape, under the deft fingers of the potter, and come from the kiln an object of beauty, gaily bedecked and glazed, is like watching an ugly duckling develop into a beautiful swan.

The First Potters.

The first modelers and burners of Arkansas' ceramic clays were the Bluff Dwellers, first known aborignes, who lived under the over-hanging cliffs and in the shallow caves in the Arkansas Ozarks. Examples of their art can be found in many collections in the state today. Latter day Indian tribes, who lived in wigwams in the bottoms, along the rivers and creeks, also had potters who were adept in the art.

The material they used was native red clay, not adapted to high temperatures—even if they could have created them—mixed with ground mussel shell, which they pulverized with a mortar-like they ground their corn. The burning was done in crude kilns fired with wood, or possibly charcoal. There is but little doubt these aboringe potters used the same kind of a potter's wheel that is in use today. Without this wheel they could not have modeled the small-neck water jugs and other small-neck pieces with large bodies, which one finds in collections of Indian pottery today.

Most of the pieces of Indian pottery in existence today, have been recovered from burial grounds out in the open, or have been excavated from the floors of shallow caves. After lying in the ground for several centuries they are soft and fragile and great care has to be used in excavation. Modern pottery would lie that long and come out in perfect condition. To get a comprehensive idea of the strides that have been made in the manufacture of pottery, in Arkansas, one only has to examine a collection of Indian pottery and compare it with the wonderful displays at the Carmack plant at Camden, or the Niloak plant at Benton.

Making a Jug.

If anyone who is not acquainted with the manufacture of pottery will look at a jug for a moment, the jug becomes a great mystery. When the writer agreed to visit an Arkansas plant, one of the stipulations was, that the potter would make a jug for him.

The potter picked up a piece of clay, laid it on the potter's wheel, which is a solid wheel about 30 inches in diameter, driven by a perpendicular shaft, and started in whirling with a motion. Sticking the forefingers of each hand in the center of the whirling clay, he brought them slowly toward the outside and the shell of the jug leaped up from the wheel like an open pail. Making a circle with the thumb and forefinger of each hand, he brought it slowly together around the top of this shell, sloping it at the top, and with a quick motion fashioned the neck. Rolling a piece of clay around in his hands, he modeled the handle, stuck it in place and, presto, another jug was made.

Every One an Artist.

One cannot go through a pottery plant and study the various operations without realizing that everyone connected with it is an artist, including the packers, who pack the pottery for shipment.

A trip through a plant is an eye-opener to the lover of fine ceramics. All the fine art pottery is not turned on the potter's wheel, much of it being cast. All of the designs, however, are modeled on the wheel.

To follow the line of manufacture through the plant, one starts at the potter's wheel. The potter is a creative artist. Already the design which he intends to produce is a vivid picture in his artistic mind. Under his deft and artistic fingers, with the use of the wheel, his mind's picture is a reality in a few minutes. If the picture is a pretty, artistic picture, a new design is born to tickle the fancy of the buying public. If it is not up to expectations, it goes back to the pile of mud.

The Casting Process.

If this shape is one that will be used, it is dried, burned and goes to the casting room, where hundreds, maybe thousands of its kind will be reproduced. The casting operation is very interesting. The pattern is placed in a casting box, about twice its size, the space around it being filled with plaster of paris in slop form. This goes to the drying rack, where all of the moisture is taken from it. The casting box is then dismantled, leaving the pattern in a solid mass of dry plaster paris. A fine incision is then made in the cast from the top across the bottom and to the top on the other side, which splits it in two. The halves are taken apart, the pattern removed from the core. The halves are then put together, placed back in the casting box, making a perfect matrix of the pattern. The casting box is then filled with slop clay. Immediately, the dry plaster paris cast starts to absorb the moisture from the clay, and a dry shell starts to form next to the cast. When this is of sufficient thickness, the rest of the slop clay is poured out of the casting box, leaving the shell. This, still in the casting box, goes to the drying racks and when it becomes completely dry, is removed from the box, coming out the exact shape of the pattern.

Finished and Decorated.

From the drying room it goes to the finishing room, where all rough spots are removed, leaving it perfectly smooth. From the finishing department it goes to the decorating room, where the decorative designs worked out for it are laid on it, in colors, with a paint material especially adapted for this work. It then goes to the kiln and comes out in 20 hours, a thing of beauty, to carry a little pleasure around the world.

Until recently the burning at the Camark plant was done in two 14-foot pottery kilns, fired with natural gas. They had a capacity of 4,000 pieces each, but it took eight days to finish the pieces in these kilns. The plant has now a continuous tunnel kiln which produces a finished ware in 20 hours. The tunnel kiln is an inovation in the manufacture of pottery. An endless chain of cars, bearing the pottery, move continuously through a muffled, gas-fired tunnel, acquiring the maximum heat at the halfway point, between the ends and outlet of the tunnel.

Big Field for Development.

The ceramic clays of Arkansas offer a splendid field for development. The teriary clays may be considered the most important, underlying a large area. With their accompanying sands and marls, they are present in large part of the territory east and south of the Missouri Pacific railroad south of the Arkansas river.

Sebastian is among the leading counties in the state in the development of the state's clay resources. Clay shales of the coal bearing rocks in that county are used in the manufacture of paving bricks and other commodities. Light blue clay, suitable for the manufacture of drain tile and other products are present in White, Monroe, Phillips, Lee, St. Francis, Poinsett, Craighead, Greene, Clay and Clark counties. Fire clays occur under nearly all the lignite beds in eastern and southern Arkansas. Deposits of kaolin occur at many places in central and southwestern Arkansas. A pure white kaolin clay, that burns a dead white, has recently been discovered near Mammoth Springs, in Fulton county, that withstands extreme high temperatures without cracking.

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Potteries of Beauty Find Their Way Into Markets of the World

Democrat 2-6-37

Arkansas pottery goes round the world!

Listed as one of the state's fastest-growing industries, products made from Arkansas clays have found an enviable position on the list of potteries in demand with dealers all over the world.

One manufacturer has made but little change in the type of pottery he manufactures over the kind made by the Indians in Arkansas long before the white man ever came across the Mississippi. With an almost unlimited supply of clay at his command which can be tinted and colored to suit, this manufacturer has been supplying a world market for many years.

Discoverring a new tinting and baking process in the manufacture of pottery, another Arkansas manufacturer has created a type of clay product that has attracted high praise from dealer and collectors everywhere. Articles manufactured in pure white and ebony black and in every tint and color of the rainbow carry the line "Made in Arkansas" to every state in the United States and to 23 foreign countries.

The depression and a sense of the artistic founded Arkansas's most recent pottery industry. A young man and his wife, without regular work, started experimenting with gold leaf and its use as a decoration for pottery. The result was a pottery that competes with the finest of imported Venetian potteries.

Vast Clay Deposits Of Arkansas Found Almost Untouched

Dem 2-12-34

Pottery manufacturers, after research work in Arkansas, find the clay deposits of the state widely distributed and in fair variety.

This research work shows that of the many thousands of square miles of clay lands in the state, there has been little systematic study and, if such were undertaken, it is probable that clays would be found which would justify the building up of several new clay-using industries.

Dallas County Looks With Interest Upon Pottery Clay Beds

Dem-Gaz 3-22-37

Fordyce — W. J. House, Holly Springs farmer, living 20 miles west of here, believes that he has found valuable clay on his farm. Samples of the clay were recently sent to the office of Dr. George Branner, state geologist, for analysis, and a report from this office state that it is Kaolin (aluminum silicate) type clay, useful in the manufacture of brick, hollow tile, stoneware and perhaps pottery, provided it holds its color and texture after burning. A more complete test will have to be made before the full value of the clay can be determined.

Dr. Branner said in his report that Dallas county will probably be among the first counties to benefit by the WPA mineral survey that will be made of the state, the project having recently been approved by Floyd Sharp, WPA administrator, the work to begin in a few weeks if the project gets final approval in Washinton. Many people of this county have been interested in its clay beds. Before the Civil war pottery factories were operated in this county. Edgar Berry, living about one mile southeast of town, has a collection of vases, crocks, jugs and other pottery manufactured by these factories, owned by Welch and Bird. After the war the factories were abandoned, but traces of the clay beds are still to be found.