## Aid to State's Upgrowth Seen Non-metals. Metals Metals. in Projected Mineral Survey

Would Give Mile-by-Mile Picture of Varied Results of Natural Including Ground Water Supply and Natural

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Including Ground Results and Supply and Supply and Supply and Supply and Supply and Supply an Curiosities, With Such Details of Many Mineral Supplies as Industrialists Demand.

Viewed as Practical Way to Speed Up Development of Related Manufactures

By WILLIAM JOHNSON.

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

tip-top, too." The average customer would edge out of your place, and over to a rival store. Pretty soon there'd be a trail worm past your establishment to other places of business.

1.625.

The point of that fancial picture is that Arkansas is a store, a vast mark of trade, where we sell to the same and the property of Arkansas is a store, a vast mark of trade, where we sell to the same intended of the fancial picture is that Arkansas is a store, a vast mark of trade, where we sell to the same intended of the fancial picture is that Arkansas is a store, a vast mark of trade where the sell to the same intended of the fancial picture of the property of Arkansas of the same intended of the fancial picture of the property of Arkansas of the same intended of the fancial picture of the property of the proper

in the normal course of his business.

Take, for instance a man who may be seeking a location to manufactures.

"Clay industries," Dr. Branner sight of engineers. Their state pride would be enlisted—the value of the seeking a location to manufacture of the surpline and in natural of the in texture, and in natural color, if it isn't to be painted. This calls for clay of a certain composition, and enough of it for lasting operation of the plain.

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

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

Further light void to restrict the sections of land a dualty of our stores of clay, sand quality of our stores of clay, sand and other earths useful in pairs, under the oversight of engineers. Their state pride would be enlisted—the value of the work, if well done, impressed on the work, if well done, impressed on the volud one impressed on the volud one, impressed on the would go over two or three sections of land a day. They would reverse production."

In the sand potter the oversight of engineers. Their state pride would be enlisted—the value of the would one, impressed on the would one, impressed on the would one, impressed on the would engineers. Their state pride would one, impressed on the would engineers. Their state pride would one, impressed on the would one, impressed on the would one, impressed on the sections of land a day. They would exery production."

In the surveyies of the value of the would one, impressed on the said the enlist of extra nothing the relation of the plain.

Each two men would go over two or three sections of land a day. They

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

and the field maps would be redrawn into county maps, and then a state map, picturing the information disclosed.

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

Arkansas have an abundance of ground water, he explained.
Location of caves and other natural oddities would be of service to the state in attracting tourists.
The projected survey would have numerous other values, but these are enough to indicate its solid worth.
"We would be sending out eyes to look at things the state over, and see what is actually there," Dr. Branner summed up.

vivid resulted, the ways previously noted.
Minerals now contribute heftily to our payrolls and state income. In 1930 Arkansas had 9,074 workers engaged in the extraction of minerals, which was more than our forests employed. Then in the manufacture of minerals, the state had another considerable amount of wage-earning. Our clay, glass and stone industries, for instance, provided 1.656 jobs.

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

"The practical and of turning our content of the state of the s

"The practical end of turning our minerals to profitable use would be emphasized. Uses made of them, past and present, would be recorded, and new uses would be suggested wherever any are indicated. Good sites for the location of industries would be noted."

The largest increase in the value of taking in the southwestern Arkalies production was in fuel minerals with fair, which opens Monday in Oaklawn an increase of 24.7 per cent, as compared with an increase of 22.6 per cent of Eddie Barnsback, general manager, which has a respect to the compared ones for a high second of the compared ones for a high second ones for a high seco

ing a remarkable stability.'

#### Structural Materials Show Good Gains.

Of the structural materials, the value of clay used in the manufacture of common brick, fire brick, sewer pipe, stoneware and pottery increased from \$559,-087 in 1935 to \$869,840 in 1936, an increase of 55.5 per cent.

Sand and gravel increased from \$686,-175 to \$824,211, or 20.1 per cent. Glass sand increased 21.6 per cent—from \$79,-

The value of stone showed a 45.1 per cent increase—from \$267,919 in 1935

Total value of all structural materials increased from \$2,585,828 to \$3.067,248, an increase of \$481,420 or 18.6 per cent.

#### Comparative Table Of Values Prepared.

development. Even if nothing very vivid resulted, the survey would cer-tainly have many values in ways

Now the state's mineral income is climbing. Recovery is on, the country and the world over. Conditions favor pushing the development of our mineral resources to the utmost. The projected survey would a id much to that end, in Dr. Branner's informed opinion. So the hopeful outlook for getting it is another gleam of cheer on the state's economic horizon.

The following table shows the comparison as regards values of the various items for the two years.

Mineral.	1935 Value.	1936 Value
Bauxite	\$2,418,146	\$2,140,20
Bentonite	8,992	10,26
Cement		984,52
Clay products (brick)		801,54
Clay (raw)		68.28
Coal		4,349,80
Glass sand		96.23
		544,28
Gravel		1,66
Lead		115,07
Manganese		
Mercury		49,03
Mineral waters		109,84
Natural gas	253,976	420,40
Natural gasoline	461,685	620,66
Novaculite	59,689	71,62
Petroleum	7,570,884	7,784,546
Rutile		15,318
Sand		279,923
Stone		388,676
Tripoli		50,194
Zinc		9,200
The increase in		

short tons. Zinc, 1935, 283 short tons; 1936, 297 short

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

The men would cellect date on the like together with the state Revenue Department, information obtained from producing companies, by using unit prices of Metal value of minerals produced in 1936.

Coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the greatest dollar inprices of the United States Eureau of the coal showed the coal Data for the estimates was obtained prices of the United States Bureau of Mines, Dr. Branner said. Part of the Coal showed the greatest dollar increase—from \$2,277,670 in 1935 to \$4,-349,807 last year, a gain of \$2,072,137 or 91 per cent. This principally was due

The following table shows the relationship between fuels, non-metals and Fair at Hot Springs.

pared with an increase of 22.6 per cent in non-metals and 20.2 per cent in non-metals.

The increases were: Fuels, \$2.611.206; be installed under the direction of a representative of Dr. George C. Branner,

> sion's display, which will show live species of Arkansas fish and a big bird and game exhibit, will be on the lower

## Minerals Seen as Throwing Lig

Pay Bulk of Income From Two Areas; Geologist Metallic Minerals; Manufacturers of Forest Less than two decades ago landing fields were as scarce Metallic Minerals; Manufacturers of Forest Less than two decades ago landing fields were as scarce and the South Minerals in the South Minerals

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ALL DEPARTMENTS -

#### SOUTHERN AVIATION.

Less than two decades ago landing fields were as scarce

## Cheap Gas Declared to Be Big Need: High Cost Blamed on "Marketing Situation"

A lot of improvements are late in coming along. For instance, now that children have gone out of style in so many homes, the steel house has appeared. Think what a boom a steel house would have been to the parents of the old-time | Value of Mineral Production in Arkansas family of 10 to 16 frisky, restless, demolishing youngsters. Defying their skillful talents at wrecking anything possible to bang dents into, whittle, or unnail, such a house would have lifted a soul-raveling burden off Grandmother and Granddad. But, though belated, the steel house idea has high significance. It illustrates the ever-widening uses modern industry is finding for all kinds of minerals. To Arkansas, rich in minerals, and needing more payrolls, the expanding market thus created for these resources is something that casts a cheerful glow into the state's prospects.

casts a cheerful glow into the state's prospects.

Arkansas is stepping out in a campaign to get more industries. You've read in the Democrat about two organizations created, one by the legislature, an Industrial Commission, and the other by a recent conference in Little Rock, a Council of Agriculture, Science and Industry, to go after factories and mills.

Clearly, minerals should play a big part in the project of decorating Arkansas with a huskier showing of manufactures. Our minerals now jingle a pleasant flow of cash into our pockets, and for decades they've been rising to taller stature as aids in paying our grocery bills, house rent and taxes. An accompanying table sets forth that fact in a way to impress everyone who has any respect for figures.

Back in the horse-and-buggy and handle-bar-mustache days of 1899, minerals brought the state only a little more than one-fifteenth as much income as it got from agriculture. But in 1925, our best year with minerals so far, they paid us about one-third as much as our agriculture did.

That's walking right along up—especially as Arkansas has been out on the industrial frontier, as you might say, crimped by high freight rates, and forced to wait for a full market for many heavy raw materials until the nation's growth reached the state.

In the face of that disadvantage, the gain shown by our income from minerals stacks up as a sound reason for expecting larger outlets for them in the years ahead.

A vast range of manufactures

most noticibly?

Questions like that are pie to Dr. ther:

"Of the 22,775,000,000 cubic feet "Of the 22,775,000,000 cubic feet" Questions like that are pie to Dr. then; George C. Branner, state geologist.
The scrivener of this piece took them to him, and Dr. rBanner put much of the information asked for in the map that you've spotted above. Then, as detailed light on was imported from Louisiana, and was imported from Louisiana, and

count for most of the mineral income in these two areas. And oil, and also, to a large degree, gas, are developments of the past 15 years, while our returns from some of the minerals have been added up in the table for a much longer time than that—in the case of a number of them, for the whole 55 years the table covers.

Barriers to Progress.

Here are three barriers to our industrial advancment that Arkansas should attack through every public and private agency that has any authority or influence in the matter.

But back to the map shown above.

Clearly, on our record of mineral production, much of the state

minerals stacks up as a sound reason for expecting larger outlets for them in the years ahead.

A vast range of manufactures draw on minerals, and new ones are constantly poking their stacks into the sky and whistling in workers.

What kind of industries in this field has Arkansas the best opportunities for? In which portions of the state do the opportunities beckon most noticibly?

Questions like that are pie to Dr.

them to him, and Dr. rBanner put much of the information asked for in the map that you've spotted above. Then, as detailed light on what the map reveals, he prepared the statistical tables that appear herewith.

That map deserves a bit of study from anyone who is interested in the state's industrial development. It shows to a considerable degree the direction a successful expansion of our industries must take.

First, you see how heavily localized our mineral production is—71 per cent of it in the West Gulf Coastal Plain area during the 51 years from 1885 to 1936. Then another 21 per cent has come from the Arkansas Valley.

Oil in Top Place.

You note that oil and gas in the West Gulf Coastal Plain, and coal and gas in the Arkansas Valley, account for most of the mineral income in these two areas. And oil, and also to a large degree, gas, are

of them, for the whole 55 years the table covers.

Oil alone has given us 50 per cent of the total cash the state has received for minerals in 55 years, and

and zinc.

We also have lignite, antimony, iron, quicksilver, asphalt, barite, bentonite and diamonds, but in just what quantity and quality is not fully known.

Altogether, one would have to be a pretty deep-dyed pessimist to doubt that minerals will play an increasingly large role in providing jobs and income for the state. We've got the minerals, and the country is growing up to our borders, bringing with it an ever-hungrier demand.

1885-1936, Inclus	ive, by Physio,	
graphic P	rovinces.	Acres 1
GULF COASTAL PLA	IN.	TOWN F
West Gulf Coastal	TO THOMAS S	STATE OF
West Gulf Coastal Plain— Petroleum Bauxite Natural gas Clay products Natural gasoline Sand and gravel. Cement Stone Clay, raw Gems and precious stones	Total value.	Pct.
Petroleum	46 607 749 44	50.90
Natural cas	25 275 400 00	6.12
Clay products	25,414,046,28	7.11
Natural gasoline	22,253,820.00	1
Sand and gravel	10,614,001.13	
Cement	6,152,830.00	200
Stone	3,028,907.42	
Clay, raw	1,207,827.31	
Gems and precious	10 001 00	
stones	48,291.20	
Aenhalt	23,894.40	35
Bentonite Asphalt Marl, calcareous	22,368.00 12,000.00	
Gypsum	8,397.00	
	538,667,050.73	70.77
MISSISSIDDI AHUVIZI PI	2111	
Sand and gravel Clay products	5,915,133.11	
Clay products	1,247,685.83	B. C.
· 图155 · 211 · 3 · 3 · 3	7 100 010 04	.94
Total	7,162,818.94 545,829,869.67	71.71
	010,040,000.01	11.11
Arkansas Valley-		
Coal	163.054.494.33	21.42
Natural gas	15,954,171.00	2.09
Clay products	3,566,367.25	December 2
PALEOZOIC AREA. Arkansas Valley— Coal Natural gas Clay products Sand and gravel. Stone	163,054,494.33 15,954,171.00 3,566,367.25 2,119,530.77 650,772.27	
Stone	650,772.27	
	and the state of the same of t	04 25
Ozark Plateau-	185,345,335.62	24.35
Stone Zinc Manganese Glass sand Mineral waters	. 9,340,411.08 5,292,107.13 3,471,223.74 915,681.33 561,703.00 268,757.97 212,264.48 172,946.00 129,615.00	1,23
Zinc	5 292 107 13	.69
Manganese	3,471,223,74	.46
Glass sand	915,681.33	
Mineral waters	561,703.00	
Tripoli	268,757.97	
Lead	212,264.48	
Sand-lime brick	172,946.00	
Manganese Glass sand Mineral waters Tripoli Lead Sand-lime brick Phosphate	129,615.00	
AND THE MENT	20,364,709.73	2 68
Ouachita Mountains-		
		.44
Stone	3,220,863.47	. 24
Mineral waters	2,559,128.78	.34
Fullers' earth	169,855.99	
State	142,881.00	
Mercury	81,077.46	
Antimone	28,701.00	
Silver	169,855.99 142,881.00 81,077.46 28,701.60 9,219.00 2,164.00	
Iron ore sold for	2,101.00	
Novaculite Stone Mineral waters Fullers' earth Slate Mercury Rutile Antimony Silver Iron ore sold for magnets	. 518.00	
up Ball and A		-
	9,560,256.30	1.26
m.t.	041 000 004 00	
Total	215,270,301.65	28.29
Grand total	\$761,100,171.32	100.00
	nary.	100.00
Gulf Coastal Plain. West Gulf Coastal Plain	Total Value.	Pct.
West Gulf Coastal		
Plain	\$538,667,050.73	70.77
Mississippi Alluvial		
West Gulf Coastal Plain Mississippi Alluvial Plain	7,162,818.94	.94
Paleozoic Area-		No. of Concession, Name of Street, or other Persons, Name of Street, or ot
Arkonsos Walley	195 245 225 62	24.35
Ozerb Pletegue	20 384 700 73	2.68
Arkansas Valley Ozark Plateaus Ouachita Moun-		
tains	9,560,256.30	1.26
	215,270,301.65	28.29
Wotel .	\$761 100 171 20	100.00
Total	\$101,100,171.32	100.00
ance of stuffs for	industry to	oper-
ote on		

ance of stuffs for industry to operate on.

There is, as an outstanding item, timber. Our huge forest acreage reaches into every county in the state. It is now getting better care than it did, with the State Forest Commission extending fire-protection activities over millions of acres, and constantly increasing this program.

Timber is a great producer of employment, particularly where it grows as fast as it does here. A federal forest specialist estimates that every 3,000 acres of Arkansas forest will, if properly cared for provide jobs for 10 men and their families indefinitely. We have 22,000,000 acres of forest. That would mean permanent employment for 73,000 workers—support for that many families.

You've read about chemurgic industries in the Democrat—how they are beginning to take farm wastes, like straw, together with such crops as sweet potatoes and soybeans, and turn them into a tremendous range of factory goods which include wall-board, paneling, paper, starch, industrial alcoho, and chemicals used in manufacturing processes.

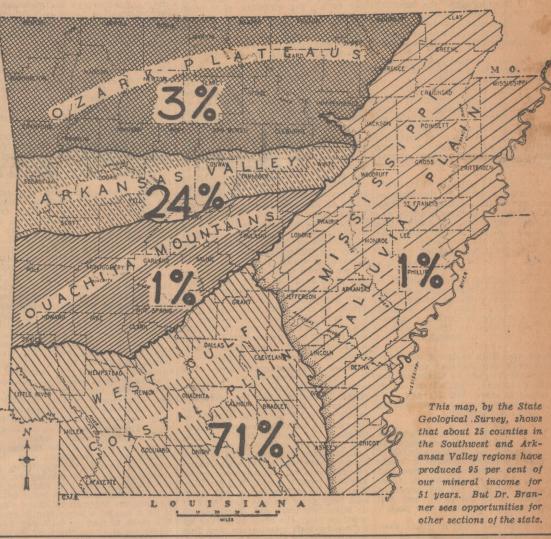
You will note that the accompanying map shows only three per cent of the state's 55-year mineral production coming from the Ozark Plateau and but one per cent from the Ouachita Mountains.

Rich Limestone Possibilities.

In these upland regions, Dr. Branner sees the possibility of a large industrial growth based on such "non-metallic" minerals as limestone and sand.

Take limestone Wodern industry many families.

## Record of State's Mineral Returns 1885-1936



## Value of Mineral Production in Arkansas, 1885-1936, Inclusive, by Physiographic

	Provinces	; Fue	d, Non-Meta	ilic ar	nd Metallic M	inera	IS	
Gulf Coastal Plain	Fuel Minerals	Per Cent	Non-metallic Minerals	Per Cent	Metallic Minerals	Per Cent	Total Value	Per Cent
West Gulf Coastal Plain	\$445,526,739.55	82.71	<b>\$</b> 76,734,383.7 <b>3</b>	14.24	\$ 16,405,927.45	3.04	\$538,667,050.7 <b>3</b>	100.00
Mississippi Alluvial			7,162,818.94	100.00			7,162,818.94	100.00
en und da en de cont del rege tables anta	445,526,739.55	81.62	83,897,202.67	15.37	16,405,927.45	3.01	545,829,869.67	100.00
Paleozoic Area Arkansas Valley Ozark Plateaus		96.58	6,336,670.29 11,389,114.38	3.42 55.93	8,975,595.35	44.07	185,345,335.62 20.364.709.73	100.00
Ouachita Mount'ns			9,438,576.24	98.73	121,680.06	1.27	9,560,256.30	100.00
	179,008,665.33	83.16	27,164,360.91	12.62	9,097,275.41	4.22	215,270,301.65	100.00
	\$624,535,404.88	82.06	\$111,061,563.58	14.59	\$ 25,503,202.86	3.35	\$761,100,171.32	100.00

You've read about chemurgic industries in the Democrat—how they are beginning to take farm wastes, like straw, together with such crops as sweet potatoes and soybeans, and turn them into a tremendous range of factory goods which include wall-board, paneling, paper, starch, industrial alcohol and chemicals used in manufacturing processes.

You will note that the accompanying map shows only three per cent of the state's 55-year mineral production coming from the Ozark Plateau and but one per cent from the Ouachita Mountains.

Rich Limestone Possibilities.
In these upland regions, Dr. Bran-

"non-metallic" minerals as limestone and sand.

Take limestone: Modern industry

many families.

Need Agricultral Industries.

And that enormous total of labor is only for saving the timber from fire damage, weeding out inferior and surplus trees, and cutting the good trees as they reach marketable size. Tests have shown that this kind of forest management pays.

Eastern Arkansas—the Mississippi Alluvial Plain—and also other areas of the state, have vast supplies of agricultural products as the basis for a wider range of industries.

Cheese factories are one agricultural industry now developing. There should also be more canning factories, putting up vegetables and fruits, along with creameries and plants to handle and process poultry products and meat animals, in the opinion of farm leaders.

Take limestone: Modern industry fetches out of this material a range of products that makes the stage magician who pulls rabbits, flags and a baby's wardrobe from a hat, look like the greenest kind of a beginner at fancy tricks.

Limestone: Modern industry magician who pulls rabbits, flags and a baby's wardrobe from a hat, look like the greenest kind of a beginner at fancy tricks.

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Limestone: The fancy tricks.

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Limestone: The fancy tricks.

Limestone: The fancy tricks.

Limestone: Modern industry had beginner at

## Many New Industries On M. and A.

Special to the Gazette. 12-26-37
Harrison, Dec. 25.—"We have had more new industries locate along the M. and A. railroad this year, than in the last 10 years," L. A. Watkins, gen-eral manager of the road, said today.

'Our tonnage has increased in pro-The new industries are in sevportion. The new industries are in several classes. A number of cheese factories have moved in and are doing well. We have had a nice business in lead and zinc ores, from new mines opened in our territory. Sawmills, stave mills, and other plants that use timber as raw material have also added to our tonnage. Next year we expect to gain as many or more new industries then many or more new industries than did in 1937."

Quickened the business pace along the

Some rather large projects are in process of development now that will add considerable tonnage to the road next year and help out the communities

pay rolls.

New Iron Pyrite Deposit.

One of the raw materials which Mr. Watkins investigated early in the year was a deposit of iron pyrites, located five miles northwest of Berryville. There was a good outcrop of the ore, but the amount of the deposit contained was, only a conjecture. He did 1,200 feet of drilling and proved up a sizable; body of the material. It was leased by the Mineral Products Co., and they have just completed 7,000 feet of drilling. It is probable that the deposit ing. It is probable that the deposit will run into the millions of tons. It is used in the manufacture of sulphuric acid and is in strong demand at this

Operations will be started with a

New Ore Project.

Another large project which will probably bear fruit early in 1938, is a big deposit of zinc and lead ore near Stark

These ore Project.

265 mineral product in 1936.

Petroleum, coal are their positions as their positions are project. deposit of zinc and lead ore near Stark City, Mo. Investigating this deposit Mr. Watkins and his associates, drilled one hole 206 feet deep and found rich ore from 185 to the bottom of the hole. They sam a shart in the ore close to the drill kole, proving it to be a clear

Sees New Quarries.

Sets New Quarries.

Mr. Watkins believes several good marble quarries will probably be opened up along his line in 1938. Boone and Searcy counties both have good commercial deposits of marble lying close to the road; close enough that side-tracks can be built from the main line ho them. Some of these deposits outcrop in the bluffs above the track. There are three marble families in the territory, the St. Joe, a red marble; the St. Clair, in pinks and grays, and black marble. Some of the best marble men in the South looked over these deposits this year and were interested in them, and if business conditions remain favorable, several of these de-

in them, and if business conditions remain favorable, several of these deposits may be developed next year.

Phosphate Rock Developed.

Among other resources Mr. Watkins located along the M. and A. railroad this year, is phosphate rock, which is now in good demand, and which will be in better demand as the years go by, as it is used in the manufacture of fertilizer. These deposits lie in the gicinity of St. Joe, in Searcy county, wo of them, which have been in Asigated, are apparently large deposits of commercial value. Mr. Watkins expecting over an area of at least 5,000 square miles in southwestern Arkansas which may well result in the discovery of commercial value. Mr. Watkins expects these deposits to be developed in 1938, which will not only give additional tonnage to his road but will increase business at St. Joe, one of the prettiest little mountain towns in the Arkansas Ozarks.

Everton Booms.

Square miles in southwestern Arkansas which may well result in the discovery well in the Shuler field.—the Lion Oil Refining Co. Edna Mornatha Morna

Everton Booms.

One of the test examples along the M. and A. of what industrial development will do, is the two of Everton, in Boone county. The tron used to be one of the liveliest towns in that section before the highways were built. The highways missed the town, trucks began to pick up the poultry, milk and produce at the farmers' homes, and they lost this. Things looked rather blue. Two plants now give the town 1 ts of business. One is the Everton Silica 1559 feet with an initial production of 264 barrels per day. This well was deepened to 7,683 feet on October 21, and the maximum reported production has been 720 barrels per day. To date 144 wells have been completed in the Rodessa extension and all are producing. The discovery well was the produce at the farmers' homes, and they lost this. Things looked rather blue. Two plants now give the town 1 ts of business. One is the Everton Silica

Sand Co., and the other is the Clear Creek Injustries, Inc. The former plant produces a fine glass sand, works a large force both in the quarry and mill, and has shipped 600 cars this year. The Clear Creek Industries, Inc., makes cob and hickory pipes, and works a large force in their new factory. They also operate a saw mill, on which they cut their own hickory into proper lengths and sizes from which the pipe stems are made. The development of several zinc mines in the immediate vicinity of the town can be expected next year if the price of ore justifies.

The discovery well in the Buckner field was the Standard Oil Company of Louisiana John P. McKean No. 1 in Section 8-16-22 completed November 30, 1937 to a depth of 7,309 feet. The initial reported production of this well was 2,184 barrels per day. This is the only producer to date.

Mr. Branner said that the recent proration regulations which have been put into effect by the state Board of Conservation on a basis of acreage and bottom hole pressure in the Shuler, Rodessa and Buckner fields indicates that wasteful field operations such as were practiced during days of the Smackayer development in 1025 area. ore justifies

Motor Car Added. While incustrial development has claimed a lot of Mr. Watkins' time during 1937, the passenger end of the road has not been neglected. Besides their regular passenger trains, they have recently purchased and put in operation a fine new motor car between Kensett and Helena. The car was purchased from the J. G. Brill Co., Philadelphia, and is developing new passion by the past.

Smackover develop in mackover develop thing of the past.

Three Classes of Products Hold

The three classes on the product of the past.

Three Classes of Products Hold

The three classes on the past.

Three Classes of Products Hold

The three classes of the past.

Three Classes of Products Hold

The three classes of the past.

Three Classes of Products Hold

The three classes of the past.

Three Classes of Products Hold

The three classes of the past. adelphia, and is developing new passenger business. It seats 26 passengers and has mail and express compart-

## A year ago Mr. Watkins decided that the best way to increase the tonnage on his road would be to develop new industries to use the raw materials in the territory. Much of his time this year was taken in invoicing these raw materials and interesting new people in their development. The new industries have not only added tonnage to the road but increased business in every section in which they are located. Quickened the business pace along the VALUE REACHES \$22,650,924.35

## an which they are located with good Three Oil Fields Developed. Gazette 1-9-38

The estimated value of Arkansas's mineral production for 1937 reached \$22,650,924.35, the highest since 1930, state Geologist George C. Branner said state Geologist George C. Branner said yesterday in a preliminary report of ALMOST UN Arkansas Geological Survey activities for the year. The 1937 valuation represented an increase of \$3,212,475.93 or LIMITED OP for the year. 'The 1937 valuation rep-16.53 per cent above the 1936 valuation.

steam shovel on this deposit at once, and the M. and A. will build a side track to the mine within the next few days. The concern expects to mine a minimum of 180 tons a day.

Twenty-one mineral items were produced by 280 mineral producing companies operating in 52 counties. This compared with 21 items produced by minimum of 180 tons a day. Twenty-one mineral items were pro-265 mineral producing companies in FOR SMALI

Petroleum, coal and bauxite retained their positions as the most valuable

deposit of zinc and lead ore near Stark City. Mo. Investigating this deposit Mr. Watkins and his associates, drilled one hole 206 feet deep and found rich ore from 185 to the bottom of the hole. They sam a shaft in the ore close to the drill role, proving it to be a clear posit of commercial importance. The Eagle-Picher Company recently leased it and are drilling it out for area, running two drills 24 hours each day. A big mine will probably be opened there in the early part of 1938.

Sees New Quarries.

The irr positions as the most valuable minerals, These three items had a combined value of \$17,344,259.30 or 76.6 per cent of the total value of all minerals produced in 1937. Petroleum was valued at \$10,631,530.64; coal at \$3.837,-\$11.16, and bauxite at \$2,875,257.50.

The value of the state's mineral production by years since 1930 has been duction by years since 1930 has been 1930 — \$30,022,890.01; 1931 — \$15,839,-\$10,-\$11,896.56; 1934—\$13,233,590.53; 1935—\$15,208,538.63; 1936—\$19,517,389.46 and 1937—\$2,650,924.35.

that wasteful field operations such as were practiced during days of the

#### Three Classes of Mineral Products Hold Positions.

The three classes of minerals—fuels, non-metals and metals—maintained their relative positions with reference to values in 1937, Mr. Branner reported. During 1937 the respective percentages were 68.4, 24.7 and 6.9. This compared with 67.5, 24.8 and 7.7 per cent in 1936.

Of the structural materials, the value of the structural materials, the value of common brick and clay used in the manufacture of fire brick, sewer pipe, stoneware and pottery increased from \$869,840.94 in 1936 to \$973,719.36 in 1937. Sand and gravel values jumped from \$824,212.10 to \$929,252.24, or 12.7 per cent. Glass sand increased from a value of \$96,238.33 to \$155,564.89 or 61.7 while stone increase from \$238,675.64. while stone increase from \$388,675.64 to \$4472,135.01 and cement rose from \$984,520 to \$1,293,768. Total value of all structural materials increased from \$3,-163,482.01 to \$3,824,439.50, or an increase of 20.9 per cent.

Coal production value showed a decrease of 11.8 per cent while mercury values dropped 79.9 per cent and bentonite fell 39.8 per cent.

With the assistance of the WPA, the state Geological Survey completed and state Geological Survey completed and

state Geological Survey completed and published three reports during the year. They were "Mineral Production Statistics for the Period 1880-1935." "Arkansas Oil and Gas Wells," and "Arkansas Water Wells." Three other reports—"Stone, Sand and Gravel Deposits of Arkansas," "Talkas in Arkansas". in Arkansas," "Lakes in Arkansas" and "Springs in Arkansas"—have been completed and are ready for publication.

## INDUSTRIES ARKANSAS

#### Gazettet2-6-38 By TOM SHIRAS.

best picture of how fast rural electrifiious jewel stones are sold in the United cation is being developed in north Ar- States annually. None are cut in the kansas by driving to the top of Boat state that we know of. North Arkansas mountain, a high knob, just south of has silica crystals by the trainload Highway 65, between Harrison and Crystal mountain, near Green Forest, contains enough hard crystals to supply Western Grove, on a dark night, and the world market with these gems for looking north, east and west. A few years ago the territory you scan was crystallized zinc carbonate, makes being a tallow dip and kerosene territory. tiful settings for rings and pins. Fine Light bulbs now flash their greeting mussel shell from the White river can from a thousand different places. From be turned into hundreds of beautiful farm homes deep in the valleys; from little homesteads high on the ridges, and from others, hidden deep on the benches of some of the higher mountains. Those that flash greetings in bunches of 100 or more represent the bunches of 100 or more, represent the towns, Western Grove, Bellfonte, Valley and Polk counties. All of these stones have their potentiality for the small and the more thickly rural communi- manufacturer. ties, where there are several farm homes is worked up into hundreds of differ-

#### Many Possibilities Seen As Result of Electrification.

irons, washing machines, pumps and Go into any fine stationery store in stoves. Tomorrow it will be thought of any city, and note the inkstands, the cut-off and rip saws, sanding machines, power driven chisels, etc., because every potential manufacturing center, because a small plant costs little. electricity turns wheels, and turning wheels produce finished products from Many Possibilities In raw material, and nowhere in the world Conversion of Timber. is there such a diversity of raw mate-

the meeting, and he has been working on Smackover development in 1925 are a the problem in his territory for the last two years, with some success. He believes that north Arkansas, with its immense storehouse of raw materials, can be converted into one of the largest industrial sections of the South, with small manufacturing plants, which in the normal course of development would become larger and larger as years pass.

Any country community, or small town, in north Arkansas, that will invoice the raw materials at its back door will find enough to keep its labor busy, by turning this raw material into finished products. When one thinks of industry, today, they thing of Detroit, with its millions invested. They could think in terms they can comprehend in from two to 10-men plants, with equipment investment of from \$50 to several

hundred dollars. This seems absurd, but

#### Many Examples Cited Of Small Industries.

Sam McCullough, at Calico Rock, with equipment investment of less than \$100, is making all kinds of furniture and elling it. A man at Judsonia, with about the same kind of investment, is making several thousand chairs and porch swings annually. A man in Carroll county is making stone brick; cutting them from a rock formation he finds on his farm. Vol Brashers, of Berryville, is making 150 articles from wood. The big opportunity for industrial development in Arkansas today does not lie in the millionaire tycoon from the East, but in the boys and girls at home, who know how to make something and who have got the will, ambition and nerve to get up and do it. With its immense storehouse of raw material, revenue from manufactured products should be twice as much as that which comes from arriculture. Every small town in the hill country has one or more men who know how to use a lathe, and other mechanical equipment, and a man or two who knows the art of salesmanship. This is the necessary combination for

#### Vast Storehouse of Raw Materials in Arkansas.

The raw materials in north Arkansas, that could be used successfully by the small manufacturer, are timber of all kinds; cotton, marble, onyx, semi-precious stones, sandstone, limestone, iron, ceramic clays, lead, and many others Mountain Home, Feb. 5.—One gets the that would develop if searched for.

Millions of dollars worth of semi-prec-

ent items. North Arkansas, too, has its art stones. Onyx, flints, marbles and crystalized limestones. One cave in the bluff across the White river from Cot-Rural electrification is thought of ter, contains enough onyx to keep a now in the terms of light, electric small plant running to the end of time. jewel boxes and a hundred other different items made from art stone. Look through any catalog and you will see in terms of industry; of small lathes, jewel boxes and a hundred other diftory out of the farm. Every small town stuff. It takes craftsmanship to make a development promotion through

North Arkansas today is turning its standing timber principally into lumber, railroad ties, furniture, stock and staves. Practically all of the rough stock is manufactured into finished products out of the state. For every dollar we triffication lines at Lead Hill, in north.

North Arkansas today is turning its standing timber principally into lumber, railroad ties, furniture, stock and staves. Practically all of the rough stock is manufactured into finished products out of the state. For every dollar we take in for raw material shipped out of the states.

North Arkansas today is turning its standing timber principally into lumber, railroad ties, furniture, stock and staves. Practically all of the rough stock is manufactured into finished products out of the state. For every dollar we take in for raw material shipped out of the states.

North Arkansas today is turning its standing timber principally into lumber, railroad development, and agricultural development, and agricultural development, and agricultural development, and agricultural and agricultural development, and agricultural development, and agricultural and agricultural and agricultural development, and this territory can come only through the through the recent revival in mineral activities already has been spurred by M. & A. assistance and has brought increased business in this territory can come only through the through the recent development, and agricultural and agricultural development, and agricultural and agricultural development, and agricultural development, and agricultural development, and agricultural and agri North Arkansas today is turning its

#### INDUSTRIAL LEADERS



L. A. Watkins (left) general manager of the Missouri and Arkansas railroad, and Harvey Couch, president of the Arkansas Power and Light Company, shown together at the Lead Hill rural electrification line dedication, where they urged development of small industries in

being made out of wood, and being sold road are being worked f every day in every town in the United States, Arkansas is producing an infinitesimal few. The same amount of effort that it takes to cut and haul a cord of stave bolts, would bring the proprice if he used it in combination with a small manufacturing plant and ducer of those bolts many times their turned out some finished product. The today offers an enormous field to the small manufacturer.

The cotton spinning industry of the New England states was not developed by the big mills, but by the small plants, owned by men who took advantage of the water power on every small creek. Many of these small plants are still in operation today. North Arkansas raises a fine grade of middling cotton, and indivduals in its plans for debut it hasn't got a spindle. It has thousands of sheep and goats but hasn't a woolen mill.

#### Clays and Minerals Offer Opportunities.

Ceramic clays offer another big opportunity to the small manufacturer. A motor, a potter's wheel and a kiln. The raw material in your back yard or down in the pasture. Any farm home with er this vast reserve of raw materials this equipment, that lies along any of are put to use, the sooner business will our main highways, can sell its entire output to passing tourists in the summer. We know one family that has done this, who make the pottery from concrete and hand decorate it with paint. Clay is much cheaper than cement

The principal minerals in north Arkansas are lead, zinc, manganese and iron. The process of zinc smelting is rather complicated, but iron and lead can be reduced with simple equipment. A small cupalo fired with charcoal or coke will do the trick. Look through any catalog and invoice the thiings that can be made from iron and lead, and you will see that these two metals offer the small manufacturer a splendid oppor-

The writer was in a town recently, that is as dead as the proverbial mackerel. Twenty-five years ago it was one of the busiest towns in north Arkansas, with at least \$500,000 annual turnover 'What has happened to this town?" I asked an old citizen whom I have known most of my life. He stopped and studied a moment. "The old ones are dying off and the young ones have left," he re-

writer can stand on the main street, and shoot five times with a .22 rifle and hit enough raw material that could be converted into finished products, by small manufacturers that would make it twice the town it ever was.

#### M. and A. Railroad to Develop Natural Resources.

through any catalog and you will see the rails, officials of the Missouri and rural connectoin makes a potential fac- what the potential market is for this Arkansas Railway Co. have announced that it reaches becomes immediately a it, but the mechanical equipment for operation with towns, firms and individuals, in the movement of minerals, ber and commercial stone, and the development of farm lands

Officials say the railroad intends to press the development of every resource along its line, "Increased business in

the state, we would get four more if we progressing include zinc, lead, mangawould maufacture it in the state. Compared to the number of things that are lead and zinc deposits along the rail-

# Gazette 2-27-38

Harrison, Feb. 26.—After 18 months spent in invoicing the raw materials along its line, the M. & A. railway is seeking the co-operation of towns, firms velopment of the vast resources it found.

The purpose of the company is to aid in the development of the abundance of raw materials-ore, timber, agricultural lands, and commercial stone in its section.

"Increased business in this territory can come only through industrial and agricultural development and the quick-

Every town has some raw materials adjacent, which, if developed, would more than double the revenues of its sector. In many cases interested townspeople will have to invoice the possibilities and list their resources. Then through co-operation with the railroad which is anxious to do everything in it power for industrial development, new business can be created.

The railroad company intends to press its development plans until every resource along the line is being worked. Already it has done much in calling attention to the wealth of raw materials, interesting outside capital in investing in this section, and encouraging all investors and producers in every was possible.

Ores include zinc, lead, manganese iron pyrites or mundig. There has been a revival of interest in mining recently and some zine and lead deposits are being worked for the first time since the World war. But in compari-son with the vast quantity throughout the section, it is still classed as virgin territory by prospectors.

Marble and phosphate rock exist in

plied soberly, with a catch in his voice.

It is in the center of a territory of broad, fertile productive acres, and the writer can stand on the main street, and the railroad will build side tracks to them.

be used for fruit. hog raising as well as for truck and

#### Huge Supply of Minerals May Be Stored for Emergency. Gazette 5-16-38

Washington, May 15 (A)-Administration backing appeared in prospect today for a proposal to authorize the army and navy to acquire and store up to \$25,000,000 worth of minerals essential in war-time. Experts of five government departments drafted the bill offered Friday by Chairman Thomas (Dem.,-Utah) of the Senate's War Minerals committee, Thomas disclosed He believ-

and nine of these are minerals—aluminum, antimony, chromium, manganese, mica, nickel, mercury, tin and tungsten. The Army has a secondary list also of materials.

"critical" materials.

The Senate proposal would dovetail with the navy's efforts to build up its stocks of such materials as silk, tin, maganese and chromium, for which it has spent more than half of a \$3,000,-000 appropriation Congress voted last



a tendency to locate mills near shipping points or good roads because of

Ceramic Clays.

One field of fine chalk which has for posits has the alumina requirement. Ozarks long been known locally and has upon one occasion been slightly touched by mining interests, is that at Wild Cherry siderable amount of phosphate rock in Iron ore, probably in minor quantity,

mine and used it in school as black- but no gold. board crayon. Others whittled it to make pipes, dolls and marbles. Commercially, A peculiar metallic mineral has been steel, in commercial quantities in Hot board crayon, Others whittled it to make

the low price.

In some of the old caves there is an abundance of guano and of salt peter. Guano, which is in plainer terms, batedroppings, has proven to be valuable as a fertilizer. Farmers adjacent to a cave where guano is found have experimented with it and prefer it to many commercial fertilizers. In a cave in Shower.

Shower.

The survey has also disclosed are enormous tonnage of iron ore in north Arkansas, which may, at sometime in the future be of tremendous economic importance. It has little value now because it is located too far from the iron and steel centers of the nation.

With the exception of some mangar. perimented with it and prefer it to many commercial fertilizers. In a cave in Stone county, just south of Calico Rock, is a section where saltpeter forms. The wistor may rake the saltpeter from found outside the Batesville-Cushman district. in Independence, and Insert products, and that value of the mineral products, and that value of the minerals produced in the South since 1924 has been greater than value of all minerals produced in the region previously.

The article reveals that 64 minerals

## FIELDS OF MINERAL

## ORES FOUND strategic war materials, state Geold George C. Branner said yesterday. SURVEYORS

By PAUL T. WAYLOND 38

Mountain View, July 9.—The state mineral survey, under the supervision of the Arkansas Geological Survey, which has been in progress for several months, is disclosing, was for several months, is disclosing, was former of the development of domestic sources in the development of the development of domestic sources in the development of the devel calico Rock, April 28.—With the possibility of hydro-electric dams on some of the principal rivers of north Arekansas, plus the fine network of high-ful knowledge about the existing metallic minerals in north Arkansas, plus the fine network of high-ful knowledge about the existing metallic minerals in north Arkansas, duced in the House on March 21 a bill the properties \$100,000,000 for the purpose and extended in the House on March 21 a bill the properties \$100,000,000 for the purpose and extended in the House on March 21 a bill the properties \$100,000,000 for the purpose and extended in the House on March 21 a bill the properties and extended in the House on March 21 a bill the properties and extended in the House on March 21 a bill the properties and extended in the House on March 21 a bill the properties are the properties and the properties are the properties and the properties are the properties and the properties are the pro

ways that link the section with neighboring states and free bridges which now span the mountain streams, there is every indication that the Arkansas Ozarks section may realize dreams harbored so long about more industrial development and a higher plane of social living.

The above mentioned factors are decidedly encouraging to industrialists looking for raw country that can be economically developed. In this section they have known for long there awaits an unlimited amount of natural resources that could be developed with ease.

Much of the wint neighboring in the existing methose in the existing methose in the section. Enormous deposits in the existing methose in the section. Enormous deposits in the section. Enormous deposits of road building and construction materials have been found scattered widely over a large area in the Upper White river country. These consist of limestone for the manufacture of by the Geological Survey and the Bureau of Mines for scientific investigation of the extent, use and grade of such minerals in the United States.

Dr. Branner, a lieutenant colonel in the Quartermaster Corps Reserve, said the additional market for minerals well adapted for concrete aggregate and other purposes, and decorative marbles of several varieties, which have a wide range in colors and textures.

An exhibit of marbles that are found the manufacture of munitions. His bill also calls for expenditure of \$500,000 by the Geological Survey and the Bureau of Mines for scientific investigation of the extent, use and grade of such minerals in the United States.

Dr. Branner, a lieutenant colonel in the Quartermaster Corps Reserve, said the additional market nevertheless."

17 Minerals in State.

Explaining that Arkansas has known deposits of about 17 of the so-called war minerals and storage of strategic and criterion in the manufacture of munitions. His bill also calls for expenditure of \$500,000 by the Geological Survey and the Bureau of Mines for scientific alminerals and storage of such section. The manufactur

shipping expense.

As time moves on it begins to appear as if natural resources are unlimited in the hills. When wars occur or there is a shortage of some particular mineral in other fields, mining promoters hie to the Ozarks, seeking what they need. A survey conducted during the past few weeks has given every indication that additional minerals may be found.

Other Ores Important.

Zinc has for long been an important ore in the northwest part of the state, especially in the vicinity of Rush. It is understood that at one time one of the largest workings of zinc in Arkansas was there When the demands and textures.

Ceramic Clays.

Few deposits of ceramic clays have been found in the region. One of definite value has been located in Fulton county, near Mammoth Spring. It is a pure white fire clay, with a high alumina content, which will take high temperatures and make beautiful, pure white fire brick, Some of this clay has been manufactured into a water paint, in the past, by grinding it and adding glue. It serves this purpose well.

Probably the most important discovery in the non-metallic minerals made to the present survey was that of two large bodies of silicious limestone suitaling.

Ceramic Clays.

The War Department lists "strategic" minerals as those in which the bulk of the nation's supply is imported. It classes those which are supplied only partly from outside sources as "critical" minerals.

Two 'Strategic' Minerals.

Two 'Strategic' Minerals.

Two 'Strategic' Minerals, and found in commercially in Pike and Clark counties.

understood that at one time one of the largest workings of zinc in Arkansas was there. When the demand and the price dropped the activities began to decline. During recent months mining has revived somewhat and conditions are much more promising.

In several sections of north Arkansas, In several sections of north Arkansas, there are deposits of coal, lead and chalk which sooner or later probably will be developed.

The several sections of north Arkansas, there are deposits of coal, lead and chalk which sooner or later probably will be developed.

The stone from these two developed.

mining interests, is that at Wild Cherry in the south end of Fulton county. A few years ago persons from Kansas came to Wild Cherry, mined a truck load of the chalk, hauled it to Kansas for assay, wrote back in an attempt to lease or buy some land there, and then the flurry died down.

The Wild Cherry chalk is said to be almost pure. There are men who, as boys, dug chalk from the Wild Cherry mine and used it in school as black—

mine and used it in school as black—

siderable amount of phosphate rock in Iron ore, probably in minor quantity, in the Ozarks.

Lead, in Newton county.

Petroleum in Union, Columbia, Miller, Nevada, and Ouachita counties.

There have been no gold or silver ores or other precious minerals discovered. Ozarks.

This supports a report made by John C. Branner, former state geologist, and ouachita counties.

This supports a report made by John C. Branner, former state geologist, and ouachita counties.

A gold and silver survey was made in the late Eighties. Some silver was found but no gold.

chalk is used in the manufacture of face found near Center, in Sharp county. A Spring county large quantity of metallic nuggets and Zinc in Ma powders and in certain paints.

There have been reports of lead finds in various localities. A few years ago T.

There have been reports of lead finds proximately two square miles, that can't be accounted for geologically. They conin various localities. A few years ago T. D. Haile of Calico Rock found some lead on his farm near Creswell and shipped some of it away for assay. The report showed it to be almost pure. However, when he started figuring about having it mined he found it would cost more than he could afford because of the low price.

The survey has also disclosed an accounted for geologically. They contain a large amount of iron, and the material is being analyzed for other elements. The nuggets resemble metallic meteorites, and it may be that at sometime in the distant past the area was pelted with a metallic meteorite shower.

Branner Writes Of The South's Minerals.

Gazette 11-12-39

Importance of mineral production in the South to the nation's economy is shower.

Branner, state geologist, in the Nother state of the south shower.

## tion or by development of domestic sources. Purchases would be stored by the Treasury's procurement division on military and naval reservations, to be used only in war-time or when the president decided a defense emergency existed. The War Department lists 22 commodities as "strategic" because of entire or heavy dependence on foreign sources, and nine of these are minerals—alumi-VAST NEW War Minerals

minerals, which probably would stimulate production activity, would be furnished by enactment of pending congressional legislation to authorize the army and navy to purchase and store strategic war materials, state Geologist

The United States Senate approved BY STATE Friday a bill by Senator Elbert D. Thomas of Utah authorizing the pur-Friday a bill by Senator Elbert D. chase and storage of \$40,000,000 worth of such materials in the next four years. Purchases would be made at the rate of \$10,000,000 annually. The bill originally called for expenditure of \$100,000,000.

which have a wide range in colors and extures.

An exhibit of marbles that are found war minerals, the geologist said mansources that could be developed with ease.

Much of the choice timber in the hills has been cut. Especially is the statement true so far as thoes tracts that are adjacent to good roads are concerned. However, successful timber men say there are yet thousands of feet of fine timber in the back hills, waiting for the coming of mills and timber workers. There seems to have been a tendency to locate mills near ship-

Helium, for dirigibles, in minor ratio

Zinc in Marion, Searcy, Boone and

found outside the Batesville-Cushman district, in Independence and Izard have been produced in the decade 1927-counties.

The article reveals that 64 minerals have been produced in the decade 1927-counties.

as major products since their value was 97 per cent of the total." Major products are petroleum, coal, natural gas, clay products, natural gasoline, stone, zinc, phosphate, rock, iron ore, lime, gypsum, salt, asphalt and bauxite.

The article, which has the place of honor in the November issue, is illustrated with pictures of various mineral productions, graphs and charts showing the wealth of minerals and their values

## An additional market for Arkansas Mineral Testing Laboratory To

Dr. George C. Branner said

Constructed as a WPA project, the laboratory will be utilized to test clay, minerals and water under the direction of H. B. Grace, a ceramic engineer from Georgia Tech.

Several thousand samples of clay

department would welcome visitors.

#### Minerals Survey in Tri-State new world. 6Area Suggested.

Memphis, Tenn., June 6 (P).—Assistant Secretray of War Louis Johnson has been asked to interest the United States Geological Survey in a study of certain minerals in Arkansas, Tennessee and Mississippi by the Raw Materials Subcommittee of the Memphis Chamber of Commerce's National Defense Committee.

#### Window Curtains Now

Made From Minerals 40 Another product from the same mineral sources as nylon stockings, which are made from coal, salt, lime-stone and water, is now on the mar-ket

It is a fabric that feels like rub-ber, and it is appearing in shower-bath and window curtains of 12 dif-

ferent colors.

The manufacturers say the fabric rack or stain, and if won't crack, peel or stain, and if soiled can be cleaned quickly in warm soapsuds.

## Prosperous Year in North Arkansas

1-5-41

Special to the Gazette.

Mountain Home, Jan. 4. - The Mining development in the zinc and lead field, and the Batesville-Cushman manganese field were not as heavy as expected the first part of the year. While prices of lead and zinc showed some increase, the advance was not enough to give the industry the desired push. Another factor which held back increased development was lack of a workmen's compensation law. The fact Arkansas now has such a law probably will increase zinc and lead investments this year.

No Manganese Sold to U. S. While the manganese field made from Russia and other foreign countries held down domestic pro-duction. Another reason was that there was no market for the lower grades. The government, which made enormous purchases of this ore during 1940, did not buy any grown in the state. from the Arkansas field. From all from the Arkansas field. From all indications it wished to draw all the ore it could from foreign countries holding the Arkansas field. At present, there are but two mills tion in excess of \$10,000,000. ries holding the Arkansas ore as

40 men, checking the deposits, which look exceptionally good. Their most important work this grade, marketable class.

The largest increase in items of commercial stone were ground agricultural limestone, used for sweetening soil, and calcium carbonate, which is used as a mineral bonate, which is used as a mi content in animal feeds.

## STILL EXISTING FOR INDUSTRY

## Fields Open.

Several thousand samples of clay are awaiting test, Dr. Branner said. The clay was obtained in Ouachita, Dallas, Hot Spring, Grant, Nevada and Clark counties.

The laboratory will be useful in advising manufacturing companies of the source of supply of Arkansas clay, it was said. Dr. Branner said the department would welcome visitors.

Several thousand samples of clay of the country has been pretty well devastated by the generations that are past, but here is the future. We are looking at tomorrow in the rough. With the rest of upioneering is a memory. Here pioneering as the ore from which aluminum is for you lives under the aegis of reflied but 65 per cent of the domestic beautiful to the state. Not only would the cultivation of these plants be profit-able adjunts to farmers, but the attraction and manufacture of the dark the state. Not only would the cultivation of these plants be profit-able adjunts to farmers, but the able adjunts to farmers, but the state. Not only would the cultivation of these plants be profit-able adjunts to farmers, but the able adjunts to farmers, but the state. Not only would the cultivation of these plants be profit-able adjunts to farmers, but the state. Not only would the cultivation of these plants be profit-able adjunts to farmers, but the state. Not only would the cultivation of these plants be profit-able adjunts to farmers, but the state. Not only would the cultivation of these plants be profit-able adjunts to farmers, but the state. Not only would the cultivation of these plants be profit-able adjunts to farmers, but the state. Not only would the cultivation of these plants be profit-able adjunts to farmers, but the state. Not only would the cultivation of these plants be profit-able adjunts to farmers, but the state. Not only would the cultivation of these plants be profit-able adjunts to farmers, but the state. Not only would the cultivation of these plants be profit.

sas's industrial development has manufactured in the state. been steady rather than spectacular, first manufacturing plant in the state, the Hemphill Salt Works, was founded in 1811 but most of was founded in 1811 but most of the advancement has taken place in the last 50 years. Manufacturers are beginning to realize that the state's comprehensive transportation and its latent electric power possibilities give Arkansas all the requirements necessary for proximately 42 per cent of Southern straw, stalks, hulls and other industrial location and make it ripe for development.

for development.

Arkansas is the third largest cotton producing state in the country and yet it has only four cotton mills employing 918 persons and with a production valued at \$2,-435,546 in 1937. Nine-tenths of the nation's bauxite is mined in two problems of the nation's bauxite is mined in two blessed with a variety of minerals Arkansas counties, Pulaski and Saline, with production amounting to 306,568 long tons in 1938 which is somewhat below the normal average of about 332,000 long tons for the past five years. However, practically all of this bauxite is shipped out of the state for refine-

tablishments employing 1,318 persons and a production worth \$21,-320,560 in 1937, do not utilize all of the many common coal dyes. the state's available cotton seed, it

#### Survey to Determine Desirable Plants Under Way.

With a view towards developing new industries in the state, the state Agricultural and Industrial Commission is conducting surveys to determine which particular types of manufacturing plants would seem most desirable for a sound industrial program. These desirable industries fall into two sumption.

Of the national manufacturers, the most important is cotton goods. Arkansas's four cotton mills use less than half of the cotton lint grown in the state.

State.

Under the same logic the per capita expenditure for furniture and other wooden products for 1937 was only \$5. There are 34 plants producing furniture or other

in the state, one located at Cam-den and the other at Crossett. Fig-direction of canneries. Canned and The most important experiments ures on their production are not bottled fruit and vegetables has an ever made on ore from the Bates-ville-Cushman field will be made in 1941. Early last year the Bureau of Mines started to investigate the cordwood supply of timber for the carbonate deposits of the field, and for the last six months have been vorking a force of approximately 40 men, checking the deposits, which look exceptionally good. Their most important work this terials either by themselves on interials either by themselves or interial either by themselves or interials either by themselves or interial either by themselves or interials either by themselves or interial either by themselves or interial either by themselves or interial either by the either by themselves or interial either by themselves or interial either by the either by themselves or interial either by the either by the either by themselves or interial either by the eith Their most important work this year will be experiments in beneficating processes, by which the lower grade ores can be raised to high grade, marketable class.

\*\*Their most important work this utilize latitude as basic raw and one of the serious states and one of the serious and nuts terials, either by themselves or in conjuncture with softwoods. At present considerable effort is being devoted to the possible establishment of the serious conjuncture with softwoods.

\*\*State's Location Makes Vast\*\*

\*\*Market Available\*\*

to be a tourist shop in Havana, Cuba, whose entire stock comes from Arkansas. Of the many thousands of miles of clay fields in the state there has been little systematic study, but if such were undertaken, according to state Geologist George C. Branner, it is probable that the supply discovered would be sufficient to serve as a foundation for several new clayusing industries.

Arkansas's mineral waters, found

Mineral Testing Laboratory To
Be Opened This Week.

The first mineral testing laboratory in the state will be placed in operation by the Arkansas Geological Survey at the old penitentiary walls this Arkansas's mineral waters, found

There are many drug - bearing plants which either grow now or may be cultivated in the state. Arum, trillium, rumex, delphinium, sassafras, hydrangea, ginseng, co-Gazette 1-12-40 sassafras, hydrangea, ginseng, coriandrium, spigelia and verbena form but a partial list of the drugs generation and the next. The rest of the country has been pretty well devastated by the generations that devastated by the generations that

rough. With the rest of u. ploneering is a memory. Here pioneering for you lives under the aegis of the new sciences which will make new world."

Thus did William Allen White, famed editor of the Emporia (Kan.) Gazette, describe the present and the future of Arkansas.

Since its founding as a territory and admission to the Union, Arkansas's industrial development has manufactured in the state.

## cience of Chemurgy Opens

One of the most rapidly advancern straw, stalks, hulls and other agricultural wastes consists of cel-lulose. The state is a fertile field

opment. Not only is Arkansas blessed with a variety of minerals from which important industrial chemicals may be extracted, but the state has supplies of coal, petroleum, and natural gas from which the chemist may process many synthetic products. From petroleum comes alcohols, glycols, ment and manufacture into aluminum products, chemicals, and cegrowth inducers, solvents, rubber Even cotton seed products, the substitutes, and plastics. From coal second largest item on the tsate's now comes synthetic fibers, rayon, list of manufactures with 25 es-

#### Plants With Local Markets Needed in State.

Of the industries whose market would be purely local, one of the most important is the manufacture of low cost wearing apparel. In 1937, there were but three establishments in Arkansas engaged in the manufacture of manufacturing clothing, employing 488 persons and with a production for the year valued at \$1,455,852. This means that, provided all of the output of these establishments was sold within the state, Arkansans were spending less than 75 cents apiece for clothing manufactured within the

## Market Available.

of several varieties. Arkansas clay 55,000,000 or approximately 42 per manufactures are being shipped all cent of the nation's total. The entire southwest area is accessible over the world and there is said to Arkansas goods and the state is

strategically located to serve the Mississippi river area and the port of New Orleans, as well as industrial areas to the north.

Transportation facilities are ex-ellent. The highways include five national motor routes and more than 10,000 miles of state roads. There are nearly 5,000 miles of railroads in the state, of which 90 per cent are controlled by seven major companies, including six trunk line railroads. Navigable streams provide eastern and southeastern sections of the state with direct water transportation to New Orleans and foreign markets. There are 33 airports in the state with more abuilding and Little has four transcontinental

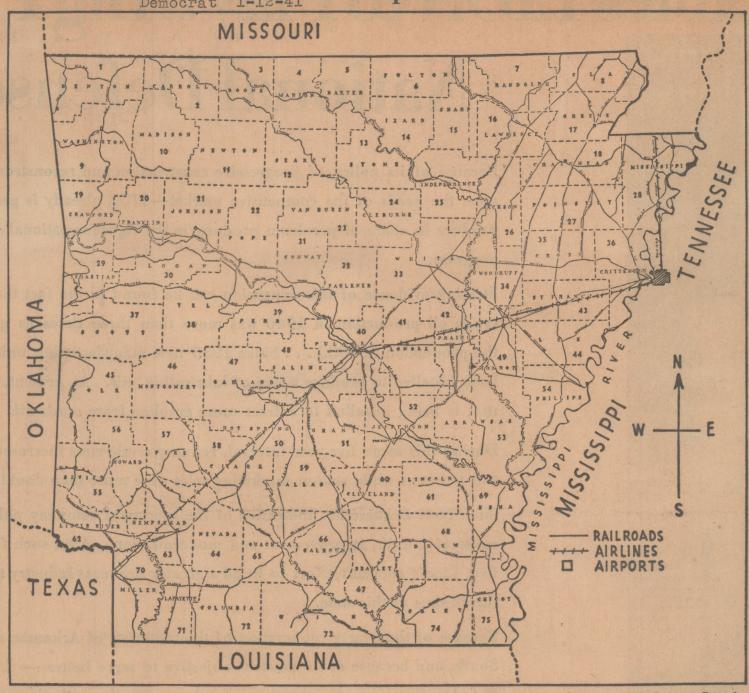
services daily.

Arkansas is richly endowed with fuel minerals, coal, petroleum, and natural gas, while the streams of the state have an estimated capac-ity of 500,000 horsepower, of which more than 40 per cent is undevel-

oped or unharnessed.
Industrialization is aided by favorable climatic conditions. The mean annual precipitation ranges from 40 to 55 inches. The rainfall is spread evenly throughout the year with an average of 106 rainy days. The annual mean temperature ranges from 55 degrees in the north to 65 degrees in the south. The growing season in most parts of the state is more than 210 days

Topographically, the state consists of two sections, divided roughly by a line running from the northeast to the southwest cor-ners. The southeastern section is the Gulf Coastal Plains and in the northwestern section is the high-lands from which come most of the state's minerals.

## Arkansas Has Rich Stores of Minerals for Both Defense and Peace-Time Industries, With Ample Railroad Facilities



Numbers on the map indicate mineral areas as follows: Antimony, Numbers on the map indicate mineral areas as tollows: Abdinonly, 55 and 56; Asphalt, 57; Bauxite, 40 and 48; Bentonite, 48 and 50; Chalk, 55, 56 and 62; Cinnabar, 57; Clay, 17, 18, 29, 40, 48, 50, 52, 55, 58, 63, 70 and 73; Coal, 9, 20, 21, 22, 29, 30, 32 and 37; Copper, 12 and 40; Diamonds, 7; Dolomite, 1 and 15; Fuller's Earth, 40; Glass Sand, 3 and 14; Gravel, 1 to 10, 13 to 21, 25 to 27, 29, 30, 32 to 35, 37 to 39, 43, 45 to 48, 50 to 52, 54 to 68, 70 to 72, 74 to 75; Gypsum, 57; Lead, 3, 11, 40, 46, 50, and 55; Lignite, 65; Lig 46, 50 and 55; Lignite, 65; Limestone for Building, 1, 12, 14, 15, 25, 26, 40 and 50; Limestone for Burning, 1, 2, 3, 9, 12, 14, 25, 40, 47 and 55; Lithographic Stone, 14; Manganese, 13, 14 and 25; Marble, 4, 5, 12, 14

Arkansas, sometimes referred to as the "Wonder State," was described by the first white man to see it, Hernando De Soto, as a "fair and pleasant land," says the Manufactureer's Record.

Discussing the resources of the state, the article continues in part:

The climate of Arkansas closely conforms to that of the other Southern states being largely temperate with extremes of temperature rarely occurring except in the northern part of the Arkansas valley and certain sections of the Ozark plateau.

The average annual precipitation

eral navigable waterways traversing tries.

The railroads provide ample service from almost every part of the state to near and far markets, besides rapid transportation to Gulf ports for foreign and coast-wise

Of the state highway system, more than 25 per cent is surfaced and than 25 per cent is surfaced and nearly 75 per cent are gravelled all-season highways suitable for present day passenger and freight demands.

In addition, the waterways provide means of freight transportation throughout the length of the Mississippi on the eastern border of the state and also on the White River to DeValls Bluff and the Ouachita

River up to Camden.

Commercial airlines operate across the state with connections to virtually all parts of the country.

Manufactures and Finance.

The value of Arkansas' manufactured products in 1937 was \$167,676,277 or \$45,335,409 more than the 1935 value of \$119,340,868.

By far the most outstanding manufacture was the wood using indus-

tain sections of the Ozark plateau.

The average annual precipitation of 48 inches is distributed evenly throughout the year's average of 105 rainy days varying only from 4.2 inches in January to 3.8 inches in July.

One of the essential factors in industrial development is adequate transportation facilities. In this respect Arkansas is well equipped with enearly 10,000 miles of improved state highways, and barge service on several navigable waterways traversing tures expended \$99,088,930 for materials, containers, fuel and power, while over 14 per cent of the gainfully employed population was engaged in manufactures. This does not include mining. The state has an Agricultural and Industrial Commission to survey the state for its industrial possibilities and to make the findings available for those seeking locations for new or expanding industries, also to administer certain tax exemptions provided for new and expanding industries.

In addition, a workmen's compensation law was adopted in the November election.

The banks of the state, numbering 216, whose capital stock totals \$13,652,000 had, in 1939, individual deposits amounting to \$176,548,000 and aggregate resources of \$202,743,000 aggregate resources of \$202,743,000 while the savings deposits were \$44,-026,000. Three clearing house exchanges reported bank transactions as \$461,573,000.

Arkansas is predominantly agri-cultural, both from the point of view of employment as well as source of

Huge Timber Area. Nearly two-thirds of Arkansas' 33,616,000-acre land area is forest

Of this area, comprising 20,915,000 acres is commercial forest land with a saw timber stand of 36,795,000,000 board The reserves of certain of the mineral production since 1920.

The reserves of certain of the mineral production since 1920.

The whetstone rock deposits which occur in central and western Arkansas are also practically unlimited in extent.

The diamond mineral production since 1920.

The whetstone rock deposits which occur in central and western Arkansas are also practically unlimited in extent.

Making up this stand are 18,500,-000,000 board feet of softwoods—4,-485,000,000 board feet in old growth Minerals.

—From the Manufacturers Record. and 25; Natural Gas, 19, 20, 21, 22, 29, 64, 65, 70 and 73; Nephelite syenite, 40, 47, 48 and 50; Novaculite, 47 and 50; Onyx Marble, 2; Petroleum, 64, 65, 70, 71, 72 and 73; Phosphate Rock, 25; Quartz Crystals, 46, 47 and 48; Rutile, 50; Sand, 4, 5, 7, 8, 16, 19, 22, 25, 26, 29, 30, 31, 35, 38, 40, 42, 43, 46, 48, 50, 54, 55, 57, 58, 60, 62, 64 to 66, 69, 71, 72 and 75; Sandstone, 3 to 5, 9, 12, 14 to 16, 19, 21 to 25, 29, 31 to 33, 40, 41, 47, 50, 57, 58 and 62; Slate, 40, 45, 46 and 47; Tripoli, 1 and 50; Zinc, 3, 4, 11, 12, 15, 16, 48 and 55; Natural gas is available for consumption in the following counties, 1, 9, 16, 18, to 22, 25, 26, 29 to 33, 37. tion in the following counties, 1, 9, 16, 18, to 22, 25, 26, 29 to 33, 37, 38, 40, 41, 47, 48, 50 to 54, 56, 58, 59, 61 to 65, 67 to 75.

growth.

Much of the state's annual cut of over two billion board feet of timber is consumed in furniture, pulp, and paper, mill work, acetic acid, methanol and other chemicals.

Arkansas supports a minimum to the constant of the constant

Arkansas supports a mining industry that, in some respects, is al-

petroleum, coal, bauxite, natural gas, manganese and zinc are generally known to be produced in Arkansas, with bauxite comprising 95 per cent of the country's production, other minerals now produced include comparts and clay products materials. cement and clay products materials, sand and gravel, natural gasoline, stone, glass sand, mineral waters, novaculite, gypsum, slate, barite, tripoli, rutile, mercury and lead.

The minerals shown on the map are, in many instances, found in other counties than those shown even though there may be no commercial production of them.

It seems probably that, so far as annual value is concerned, Arkansas will continue to be principally a fuel producing state for many years to come, as the aggregate value of ing grant to come. petroleum, natural gas, natural gas-oline and coal has made up over 86 mineral production since 1920.

105,313 lg. tons

dustry that, in some respects, is almost certain to grow beyond its present status.

On the map are indicated those minerals which are now or have been commercially produced. Their annual value during the past 10 years averaged approximately \$26,000,000.

Although certain products, such as petroleum, coal, bauxite, natural The discovery of quicksilver in the

limestone, dolomite and glass sand in the north, and clay and shale deposits which are widely distributed. Marble deposits cover large areas in the Ozarks and include black marble which is unique in the United States.

The mineral waters, known internationally, can be obtained in practically unlimited quantities in the Ouachita Mountains and Ozark plateous.

In the same areas is an abundant supply of tripoli, while vari-colored slate deposits, used for making roofing granules, occur in the Ouachita Mountains.

Building stone, crushed and brokper cent of the value of the state's en stone, and sand and gravel are mineral production since 1920.

be as follows:

Estimated years
reserves will
last based on
Reserves 1939 ProJan 1 1940. duction

extent.

The diamond mines in Pike Country are located in the only known area where diamonds occur in the rocks where they were originally

formed on the North American con-

Supplementing the minerals mentioned, asphalt, fuller's earth, phosphate rock, antimony, iron and silver are known to be present in the state. It remains for further examination to demonstrate the quantity of these and other mineral deposits which are not now worked commer-

The existing electric power facilities of Arkansas are more than adequate for such demands as may be anticipated in the immediacy and with full provision for future expansion.

pansion.

During 1939, production totaled 230,799,000 kilowatt hours of which 106,851,000 was produced from the five hydro-electric plants. Altogether, there are 55 plants operating in the state. These with their generating consists are ing capacity are:

ing capacity are:

3 Arkansas Power & Light Co. hydro-electric plants 65,968
4 Arkansas Power & Light Co., steam plants 41,524
2 Arkansas Missouri Power Corporation hydroelectric plants 1,040
19 Miscellaneous steam plants 38,564
27 Internal combustion engine plants 13,507

In addition, there are approximately 150,000 kilowatts of generating capacity available from interconnections of the Arkansas systems with those in other states.

At the general election in 1938 Arkansas declared by constitutional amendment that all capital invested in new manufacturing or processing

amendment that all capital invested in new manufacturing or processing plants or in the expansion of old manufacturing or processing plants, may be exempt from the state millage tax for a period of from one to 10 years. Arkansas has no use tax.

Tax rates in the various counties of Arkansas range from \$2.57 to \$4.35 per \$100 of assessed valuation. The basis of assessment is 50 per cent of true valuation and this is liberally construed.

There is a franchise tax on corporations of \$1.10 per \$1,000 of capital stock, the minimum tax being \$11. The income tax rate for industry is a flat two per cent with \$1,500 exemption allowed.

exemption allowed

State Severance Taxes.
Severance taxes on raw materials are 2.6 per cent of gross cash market value at point of severance on

ket value at point of severance on all minerals except coal, which is one cent a short ton. and manganese which is 10.1 cents a long ton.

On minerals sold from state owned lands and waterways, the rates are: 2.5 cents per cubic yard on sand; five cents per cubic yard on gravel; six cents per short ton on coal; oil, gas and casinghead gas are subject to 1-8 the value produced and savto 1-8 the value produced and sav

Low population density is a characteristic exemplified in Arkansas by the fact almost 80 per cent of the population is classified rural. This is a condition favorable to industry in its recent trend toward decentral-ization and location of plants outside

ization and location of plants outside metropolitan centers.

Of the white population, 99.3 per cent are native born Americans.

Arkansas labor is abundant, generally intelligent and industrious; and during the past several years, there have been scarcely any labor disturbances throughout the various industries of the state dustries of the state.

#### ARKANSAS MINERALS DECREASE MICA 3X411 MERCURY 76LB.FLASK MANGANESE ORE 46-48% PER UNIT CADMIUM PER LB GRAPHITE CEYLON LUMP CARBON LUMP ADAGASCAR FLAKE TUNGSTEN ORE QUARTZ ALL SIZES 99% SPOT CHROMIUM ASBESTOS SHORTS AND FLOATS PER OZ VANADIUM NICKEL ANTIMONY ORE 50-55% 58-60% 60-65% PER UNIT ALUMINUM 99 %

Chart showing percentage price changes of strategic and critical minerals found in Arkansas between May 11, 1939, and September 12, 1940. (Prices according to E. and M. J. Metal and Mineral Markets. Chart by courtesy of George C. Branner, state geologist, and the Arkansas Geological Survey.)

## Magnesium, Tin Plants To Rights May Be Erected

Gazette 2-20-41

Washington, Feb. 19 (A).-Jesse H. Jones, federal loan administrator, announced today plans to finance construction of tin and magnesium plants to provide essential metals for the defense program.

He said the Reconstruction Finance Corporation between

nance Corporation had contracted with N. V. Billiton-Maastschapij, an experienced Dutch smelting firm, to construct a tin smelter here and had lent \$9,250,000 to a San and had lent \$9,250,000 to a San Francisco firm to build a magnes-

Francisco firm to build a magnesium plant near San Francisco.

The tin smelter, Jones said, would belong to the RFC but would be built and operated by the Dutch company to process 18,000 tons of Bolivian tin a year. The ore has been purchased by the RFC and its subsidiaries. He said the plant probably would be located at one of a dozen Southern sites now under dozen Southern sites now under

Jones said the California Todd
Shipbuilding Corp., Henry J. Kaiser, president, was the San Francisco firm which received the magnesium loan. The firm, he said, plans to build a plant to extract between 12,000 and 15,000 tons of To Double Magnesium Output. etween 12,000 and 15,000 he expected would be completed in six to nine months, would more than double America's present mag-

the nation had on hand or on order enough natural rubber to make which has just closed." The bills

posing a plan to swap American cotton for British rubber, Jones said that, on the contrary, he would Mr. Reid as a Land Use Commitbe "delighted to see such a deal." teeman.

## Mineral Be Saleable

Gazette 3-23-41

Mineral rights to approximately 478, authorizing the state to dis- ary 1, 1940. pose of mineral rights to tax-for-

state's mineral rights. Land Commissioner Otis Page said that his office has issued 3,900 deeds, averging 80 acres each, in which the state reserved mineral rights.

The 1941 bills provides for the

Planning Board to request federal agencies and other state agencies to furnish information regarding

the acreage's mineral possibilities.
Upon the committee's recommen-

Machen on Committee,

magnesium a year from Nevada ore. He indicated this plant, which he expected would be completed in Jr. of Hempstead introduced H. B. No. 478. Mr. Machen, who introduced several successful Land Use

O00 tons of copper from Chile and Peru and "might buy some more."
Proposals to build plants to manufacture synthetic rubber, Jones indicated, has been postponed indefinitely. He said the cost of artificial rubber would be about double that of natural rubber, and the private had on hand or on or live measures in the legislature. a synthetic product unlecessary for at least two years.

Asked about reports he was op-

## Geological X-Ray Made Of State

Gazette 3-23-41

The state Geological Survey re-312,000 acres held by the state will ported today that \$828,287,262.95 be freed for leasing or sale when worth of minerals was produced in Governor Adkins signs H. B. No. Arkansas between 1880 and Janu-

The report was compiled in connection with work on an "X-ray" The 1939 Land Policy Act made picture of the state made by State no provision for developing the Geologist George C. Branner and

state reserved mineral rights.

The 1941 bills provides for the Land Use Committee of the state Planning Board to request federal divided into four blocks, showing geologic formations of every square mile of Arkansas to an estimated depth of 12,000 feet.

"The block diagram of Arkansas is an interpretation of the facts geology which have gathered up to the present time," Dr. Branner said in his explana-tion of the "X-ray." "It is, of course, impossible to know definitely what is 10,000 or 12,000 feet underground but, from a study of deep well records and the structure of surface rocks, it is possible to gain some idea of these conditions as they probably are."

nesium production.

Jones said he had purchased 200,of the committee.

Out tons of copper from Chile and Peru and "might buy some more."

T. Roy Reid of Little Rock, astath to the secretary of agritude at Washington, wrote to Mr.

Data compiled in connection with the studies for the map showed that 480,240,761 barrels of petropular at Washington, wrote to Mr. \$432,460,162.09 led the list in mineral production up to 1940. A reserve of 320,148,000 barrels was estimated as of January 1, 1940. Coal (74,502,292 tons) accounted for \$177,-256,506 of the total value of the state's minerals and a reserve of out mineral rights. 1,510,063,844 short tons was estimated as available in 1940.

period surveyed included natural gas, bauxite, clay products, natural it could be appraised. gasoline, cement, stone, lime, zinc, limestone, granite, sandstone, oil-

raw clay, glass sand, sand and gravel, manganiferous ore, mer-cury, tripoli, marble, slate, lead, acres of state-owned land in Hemp-

face consists of sedimentary beds. These are consolidated or unconsolidated formations which were Named by Governor. laid down as sediments on the bottoms of salt or fresh water bodies

## LAND USE PLAN STRENGTHENED BY'41 STATUTES

## Bill Signed to Perfect Titles.

Gazette 4-1-41

A cycle of land bills, designed to put into action the model Land Use Act of 1939 and to provide Use Act of 1939 and to provide revenue for old age pensions, was completed with the signing of H.B. No. 501 (Machen of Columbia, et al) by Acting Governor Willis B. Smith of Texarkana yesterday.

The bill (Act 423 of 1941) is designed to quiet titles one year after a Chancery Court confirms the

a Chancery Court confirms the state's title to tax delinquent lands.

Mineral Rights May Be Sold.

Mineral rights heretofore re-tained by the state and in land hereafter sold by the state will be transferred to purchasers under Act 351 of 1941. The revenue commissioner is required to issue the deed transferring the rights but he may have no jurisdiction in the matter unless the Land Use Cominterest will be served by the sale the mineral rights.

## MINERAL RIGHT TO BE RETAINED ON STATE LAND

## FSA Not Expected To Oppose Policy.

Gazette 6-12-41

The Land Use Committee of the state Planning Board probably will require the retention of mineral rights to state-owned land sold to individuals or the federal government, Land Commissioner Otis Page, ex-officio secretary, said following a meeting of the committee yesterday. Mr. Page said this policy probably would be adopted at a meeting at 1:30 p. m. today.

Mr. Page said the Farm Security Administration, which is making arrangements to purchase approximately 221,000 acres of tax-forfeited steading of tenant farmers, probably would not object to reservation

of the mineral rights.

Mr. Page said the mineral rights will be reserved also in the 80,000 acres of land in state forests outside of national forest boundaries. A. L. Nelson, supervisor of the Ouachita National Forest, has submitted a tentative bid of \$1.50 a acre for the land on behalf of the United States Forest Service. When the mineral rights question was brought up, Mr. Nelson said his of-fice would prepare separate bids for purchase of the land with and with-

After a short debate whether to Other mineral produced over the Service's bid, the committee decided to "freeze" the entire acreage until

stones, manganese, mineral waters, Withheld From Sale.

coal products, sand-lime brick, Fuller's earth, chalk, phosphate rock, rutile, gypsum, bentonite, gems and precious stones, asphalt, calcareous marl, antimony, barite, silver, iron ore for magnets, talc and lignite.

The "X-ray" shows that all but 14 square miles of Arkansas's surface consists of sedimentary beds.

## Three New Members

Three new mem' ars of the committee were appointed by Governor Adkins yesterday to fill vacancies caused by the resignations of three federal officials recently promoted to positions in Washington, D. C.

The new members are H. Q. Kelley, member of the regional legal division of the FSA, succeeding Brooks Hays, former regional FSA lawyer; E. B. Whitaker, assistant regional director of the FSA, succeeding T. Roy Reid, former regional FSA director; and J. H. Pinkerton, Norman, lumberman, succeeding Glenn E. Riddell, former state co-ordinator for the Sail Comstate co-ordinator for the Soil Conservation Service.

## State's Income F

## Offer Opportunity to Build Lasting Industries Through Utility to Defense Program

By WILLIAM JOHNSON.

A favorite old legend is the one about the tattered and poverty-stricken individual who went into an enchanted sleep, from which he awoke to find himself rich, and a prince.

Maybe he just had sleeping sickness, and only happened to come out of it at the time a rich uncle died, leaving him a handsome estate, and somebody with a free-working imagination dressed up the facts.

Anyway, that ancient yarn symbolizes the mineral wealth mittee has certified that the state's of Arkansas. Sleeping in large areas of our soil, tucked away there ages ago by the cunning hand of Mother Nature, are stores of minerals which would go far toward creating prosperity for the state if industrially developed.

Except for oil and bauxite, we have, in the old saying, "hardly scratched the surface" of our mineral reserves.

At that, they have provided thousands of jobs and jingled a helpful flow of cash into Arkansas pockets.

In 1939, minerals paid the state \$28,564,000, which was an important sum even in these days when money is talked about in figures once consistent with the state of the state

\$28,564,000, which was an important sum even in these days when money is talked about in figures once confined to astronomy.

Then, in September, '39, the war opened a huge additional market for minerals. The battlefield is an insatiable glutton for the output of mines and oil wells, driving the factories which fabricate military needs from this output into a roaring demand for more and yet more of it.

Arkansas began to profit last year from the war demand for minerals, reflected into the state by the national defense program. The output value went up to \$33,706,000—a gain of \$5,142,000 over 1939.

A big increase of production and value was scored by oil—from 21 million barrels, worth 17 million dollars in 1939, to 26 million barrels, worth 21 million dollars, in 1940—using round numbers.

Widespread Upturn.

Substantial advances in both output and value also were chalked up for bauxite, coal, natural gas, and a substantial advances in both output and value also were chalked up for bauxite, coal, natural gas, and a substantial advances in both output and value also were chalked up for bauxite, coal, natural gas, and a substantial advances in both output and value also were chalked up for bauxite, coal, natural gas, and a substantial advances in both output and value also were chalked up for bauxite, coal, natural gas, and a substantial advances in both output and value also were chalked up for bauxite, coal, natural gas, and a substantial advances in both output and value also were chalked up for bauxite, coal, natural gas, and a substantial advances in both output and value also were chalked up for bauxite, coal, natural gas, and a substantial advances in both output and value also were chalked up for bauxite, coal, natural gas, and a substantial advances in both output and value also were chalked up for bauxite, coal, natural gas, and a substantial advances in both output and value also were chalked up for bauxite, coal, natural gas, and a substantial advances in both output and value also were chalked up fo

Substantial advances in both output and value also were chalked up for bauxite, coal, natural gas, and a number of minerals which contribute smaller amounts to the state's income, including mercury — or quicksilver—manganese, barite, glass sand, gypsum, zinc and tripoli.

Apparently, everything is set for another rise this year in the production of our minerals, and the sum received for them. They are going to market on a heavier scale than in 1940, and at prices edged up by the hunger of defense factories for this essential class of raw materials.

A brisk demand for our more widely useful minerals at least, and, of course, for the military essentials made from them, is to be expected.

But the Mineral Civilization, Thomas T. Read, a professor of mining engineering at Columbia University, said:

"Approximately half of all the work done in our United States, which contains only one-twentieth of the population of the world. How can so few people do so much work?

"Most of it is done for them by machines that multiply the capacities of men. Two pounds of coal, properly applied, will do the work of a man for a day.

Coal Is Big Worker.

"Almost two-thirds of the work done in the United States is done by coal, and most of the other third is done by petroleum and natural gas."

So Arkaness with its coal beds,

of course, for the military essentials made from them, is to be expected as long as the war and the national emergency last.

So unless peace is nearer than informed men predict, Arkansas should be able not only to expand its production of minerals, but to acquire industries for processing more of them into defense needs—and industries which can carry over into normal times, to manufacture everyday wants.

Minerals are the basis of our civilization.

They give us fast transportation of enormous capacity in trains, autos, trucks, buses and planes; rapid communications with the telephone, telegraph and radio; lighting systems for our homes and

tions.

Coal, gas and oil probably offer the best industrial opportunities in minerals which Arkansas has for the investigation of the the immediate present. A great many defense needs can be produced from those three, and defense industries are likely to be the only kind the state can get now, because of the restrictions on factory

#### Promising Industrial Start.

Arkansas has a promising start in defense industries based on minerals, which have been scheduled for the state. If we can get several such plants of types adapted to being shifted over to producing normal wants when peace is restored, the state will have a fine start toward manufacturing its minerals in

But we should gain even from defense plants which may not be able to keep going when the emergency ends. For the power to run them, developed from our coal, sour gas or rivers, will remain, to operate other kinds of industries in the future, and to serve as an in-

erate other kinds of industries in the future, and to serve as an incentive toward acquiring them.

Much hope is expressed that Arkansas, with most of the nation's bauxite, will take a permanent place in making aluminum, and perhaps in manufacturing it into goods, through the alumina and aluminum defense industries planned for the

Huge Alumina Output.

Alumina is a product in between bauxite and aluminum. Originally the state was to get two alumina plants, each turning out a half-billion pounds of the product yearly. But according to a report from Washington, the Office of Production Management has recommended to the War Department that the two plants be merged into one of a billion pounds capacity, to be located in Saline County.

The projected aluminum that the taking over Signature of the section of the possibility of taking over Signature and the such money can be used for no other school purpose. The Mississippi court said; "Whatever is not unequivocally granted is deemed to be withheld in grants from the government."

One official said that if any party is entitled to hold the mineral rights, it might be the federal government, which set aside each No. It is section of sectional townships for the benefit of schools. Congress has considered the possibility of taking over Signature.

billion pounds of the product yearly. But according to a report from Washington, the Office of Production Management has recommended to the War Department that the two plants be merged into one of a billion pounds capacity, to be located in Saline County.

The projected aluminum plant would turn out a hundred million pounds annually of the light metal. Since it is figured that two pounds of aluminamy yield a pound of aluminum, "it is apparent that a billion-pounds production of alumina would leave an immense surplus of this part-way product above the requirements of a hundred-million-pound aluminum plant — to be shipped to other states for the finishing process.

But there's no good in wailing about that. We'll have a big aluminum industry if the plants are built—and we haven't got the electric energy to manufacture more aluminum. In fact, it is a problem to arrange for enough to take care of the capacity planned.

To Use Lower Grade.

#### To Use Lower Grade.

has had a market heretorore. Note ever, it seems that a limit is set by the silica content as to how far into the poorer bauxite the plant will dip.

Known deposits of the acceptable bauxite are placed at about nine million tons, by Dr. George C. Branner, state geologist. But he added that explorations might locate a good deal more, and undoubtedly efforts to find new supplies would be stimulated by a market right at hand.

S200 a lines.

Mineral has increased steadily in the last year.

Dr. Branner said zinc mine operators are "barely able to show a profit" at the present price of 8 1-2 cents a pound. This price compares to the 21 cents offered during the last World war.

R.F.C. to Aid

The big question is whether an aluminum industry in Arkansas can operate after war conditions pass, in the face of the tremendous expansion now under way in aluminum production. num production.

Indications are that the nation will have an aluminum-making capacity of three or four times the amount it has been using in the past. And much of this capacity will be near ocean routes, where it can get cheap bauxite, of high grade, from South America.

New outlets for aluminum may be.

New outlets for aluminum may be developed. Nevertheless, the prospect is one which Arkansas leaders should be thinking about.

The information was received.

#### State Urged to Plan.

now, before the plants are completed, Arkansas people should be making plans for commercial, after-the-war use of both the Marche and Loans will be considered, Mr. the-war use of both the Marche and Jacksonville works for turning out Thatcher said, for development of

last Friday for Arkansas, to produce ammonia from sweetened sour gas, for explosives, and which will be

the consumption of minerals to record heights, and developing new uses for them, in the search for substitutes and for effective munitions.

Coal, gas and oil probably offer

built and operated by the Lion Oil No loans will be made to purRefining Company, El Dorado, chase mining property or for prosshould be relatively easy to fit into pecting and grubstaking purposes, be diverted to supply a number of every-day wants.

every-day wants.

As readily adaptable to normal times would be a beneficiating plant to raise the grade of manganese—essential in making steel—

The R. F. C. desires a mortgage on the property in return for the by removing foreign material from

will help much in building a stronger, more prosperous state.

Arkansas probably could not remal wants when peace is restored, the state will have a fine start to-ward manufacturing its minerals in posed of, representatives of several

press reservation.
Few Sixteenth Section tracts rekansas, with most of the nation's bauxite, will take a permanent place in making aluminum, and perhaps in manufacturing it into goods, through the alumina and aluminum defense industries planned for the state.

Huge Alumina Output

The Wiskleenth Section tracts remain unsold in Arkansas. Most of them are in Mississippi county and down stringent regulations to assure sale only to bona fide development projects and to prevent speculative sales. The actual transaction, in such assert industries planned for the state.

Huge Alumina Output

price," he said. "I think it is a highly effective procedure."

He cited the experience of cinna-Then, too, the alumina plants—or plant, if the two are combined—will use lower grade bauxite than has had a market heretofore. However, it seems that a limit is set by silver at the extraordinary price of \$200 a flask. The demand for this mineral has increased steadily in

Governor Adkins was informed yesterday the Reconstruction Fi-

The information was received from H. K. Thatcher, director of To the same point, Mar Harry S. the state Agricultural and Indus-Bronson, construction quartermaster of the munition plant at Marche, fice, who said he was working with told a Little Rock group that even President L. A. Watkins of the Mis-

military needs.

Another defense plant announced

Arkansas minerals such as aluminum manganese lead zing graph.

on the property in return for the loan. However, if the property is held under lease or option to purchase the loan may be considered

# duced from those three, and defense industries are likely to be the only kind the state can get now, because of the restrictions on factory equipment. The defense manufacturing possibilities of coal and our huge stores of "sour" gas include such items as essential chemicals, explosives, plastics and artificial rubber. Oil, too, is a material with which chemical hunufacturing can perform similar wizardries. And, of course, there is the power which may be obtained cheaply from coal, or, engineers say, from our sour gas, to drive defense plants. According to good authorities, coal yields cheaper power than can be had from harnessing rivers—though a combination of the two has admitted advantages. And we have both. Promising Industrial Start. Arkansas has a promising steat in the ore. As survey of manganese deposits in the Batesville area is under way, and it has been reported that the government would provide a bene-riciating plant if another million tons of manganese were located. Governor Adkins said recently he had been told "there is money right now in Little Rock banks to guarantice" a large development in zinc and lead. And there is talk of other mineral projects. All together, the outlook in this line is bright. Our minerals, and our many suitable raw materials, should give us more defense industries if the defense program must be continued. And if we can save for the future a good share of these new payrolls, And if we can save for the suitable raw must be continued. And if we can save for the future a good share of these new payrolls, Arkansas will have something that will help much in building a stronger, more prosperous state.

Democrat 12-20-41
To permit development of Arkansas mineral resources with Reconstruction Finance Corporation loans, the Land Use Committee of the State Planning Board yesterday modified its policy to allow sale of state-owned mineral rights in certain cases

state-owned mineral rights in certain cases.

Mineral rights on all tax-forfeited land are retained by the state, except where the land is redeemed by former owners. The Land Use Committee policy to date has been to allow development of such mineral rights under leases.

The RFC recently announced that loans could be made for developing

loans could be made for developing Arkansas minerals, but the RFC loan policy will require a mortgage on the land. For that reason, the Land Use Committee decided to sell mineral properties where necessary.

The crecently announced that loans the loans of the loans

cases, is negotiated through State Revenue Commissioner Joe Hardin after the Land Use Committee has

after the Land Use Committee has passed on the proposal.

A sub-committee composed of State Comptroller M. B. McLeod, Claude A. Rankin, chief appraiser for the committee, Rep. Jack Machen, Columbia County, State Geologist George C. Branner and William J. Coleman, attorney for the Bureau of Agricultural Economics, was appointed to consider applications for sale of mineral rights.

The committee also declined to open lands in the Crowley Ridge area for homesteading. The area previously had been "frozen."

## Sees Gain In tax-forfeited lands. The committee favors only sub-surface leasing. Increase Price of Metals, State's Output Of Minerals

#### War Promises To Stimulate Expansion,

Says Dr. Branner.
Further expansion of Arkansas' nineral industry, now near all time ighs, may be expected in 1942, proided the present emergency connues with its consequent stimulation to demand and prices," believes ir. George C. Branner, state geolosist.

Arkansas bauxite production for 1941 of 955,617 long tons (green basis) exceeds the record high of 1918 (562,982 long tons) by 392,725 long tons. This excess, however, is not as exactly indicated, since the 1918 production was reported on a mixed basis (green, dried and calcined). The 1941 production was an increase of 95.9 per cent over the 1940 production of 487,677 long tons (green basis).

The 1942 figure is expected to exceed the 1941 production by a very substantial margin. The production of all grades of Arkansas bauxite as recommended by the OPM is 2,524,000 long tons (dry basis) annually in order to meet war requirements for aluminum, abrasives and aluminum chemicals.

Production

Reaches Pet Democrat 2-8num chemicals.

nance Corporation will make loans for development of strategic and critical minerals in Arkansas.

The information was received from H K Thatcher director of

total (25,866,350 barrels).

The discovery of the new Midway field in Lafayette County is stimulating the search for oil in the Smackover limestone north of the fault zone which has hitherto been thought to be the northern limit of the productive areas.

Assignment of a midwide panying an annual report.

The total was a 17.8 per cent increase over the \$28,581,422.14 total of the previous year. The state collected \$641,308.56 in severance tax. a 22.7 per cent increase over the previous year.

Dr. Branner submitted a five-year tabulation should be the northern limit of the productive areas.

thought to be the northern limit of the productive areas.

Assignment of a priority rating of A2 for equipment for wildcat operations by the OPM, as compared with an A8 rating extended to operations in proven fields, should cause Arkansas wildcat operations to be considerably stimulated.

Dr. Branner submitted a five-year tabulation, showing an increase in production for every year since 1936, when the value of minerals produced was \$19,438,448.42.

The report covered activities of the Arkansas Geological Survey from December 1, 1940, to November 30, 1941.

## Gain for Arkansas' Minerals

Cement, Darreis	112,000	919,000	143,000+
Coal, short tons	1,310,262	1.528,585	218.323+
Glass Sand, short tons	94.970	109,299	14,329+
Gypsum, short tons	16,828	29.286	12,458+
Lead, short tons (metal)	55	4	51-
Manganese, long tons	7.077	7.378	301+
Mercury, flasks 76-lb	1,221	1,610	389+
Petroleum, barrels2		26,465,150	598,800+
Tripoli, short tons	1,430	2,083	653+
Zinc, short tons (metal)	440	190	250-
*Partially estimated.	110	100	200
PRI	ICES		+
75			Increase+
Mineral	Jan. 1941	Dec. 1941	Decrease-
Aluminum, per lb. 99% (commer-			
cial & mill ingots)	\$ .17	\$ .15	\$ .02-
Barite, per long ton (crude) Georg		8.00	1.00+
Glass Sand, per ton, Illinois		1.25-5.00	
Lead (metal), per short ton		114.00	7.00+
Manganese, per unit of manganese			
Brazilian 46%		.63	.12+
Petroleum, per barrel, Smackover		.83	
Quicksilver, flask		199.65	33.80+
Tripoli, per ton, burlap bags, paper			
liners, min. 30 tons, f. o. b. Missou			
(40 mesh)		14.50	
Zinc (metal), per short ton		165.00	11.00+
I show the thirty, per short ton			22.00
Coal Production Up.	WPA Pro	vides Funds.	

compared with 1,221 flasks in 1940. Portland cement production increased from 772,000 barrels in 1940 to 915,000 in 1941, an increase of 18.5 per cent. Gypsum, quarried in 1940, an increase of 29.5 gas ompared with 7,077 long tons in 1940, an increase of 4.3 per cent. The price of ferro grade ore in January, 1941, was 51 cents per unit for 45 per cent ore, while that for 1941 was 63 cents. The present December price of ferro grade ore in January, 1941, was 51 cents per unit for 45 per cent ore, while that for 1941 in 1940 to 190 short tons of mangament, Washington, D. C. Substantial price increases in many mineral productions found in Arkansas, notably quicksilver, manganese, 21 cents of 20 per cent. The development of deposition of 45 per cent ore, while that for 1941 in 1942 to 190 short tons of metal in 1940 to 190 short tons in 1941, although the average annual price increased from 6,4 cents to 7.6 cents for metallic zinc. The present price of 8,25 cents per pound and the stated program for the Metal Reserve Company of offering 11 cents for metallic zinc. The present price of 8,25 cents per pound and the stated program for the Metal Reserve Company of offering 11 cents pound for all zinc over quota production, and to assure that price increased from 6,4 cents to 7.6 cents per pound of an anglese were made of 43,958 specimens of well and spring water, and 32 complete analyses were made. "During the specimens of well and spring water and 33 complete analyses were made. "During the specimens of well and spring water and 32 complete analyses were made. "During the specimens of well and spring and the specimens of what has been devote 1942.

Dr. George C. Branner, state geologist.

In a comprehensive review of the effect of the war on the state's mineral production, he said:

Arkansas bauxite production for Class an increase of 158.4 per the Arkansas Geological Survey cent over the total of 1940 which said in its annual report yesterday. The state collected \$641,308.56 in goes to weight the mud used in deal production, he said:

Arkansas bauxite production for Class an increase of 158.4 per the Arkansas Geological Survey cent over the total of 1940 which said in its annual report yesterday. The state collected \$641,308.56 in goes to weight the mud used in deal production compared drilling rotary oil and gas tests.

Glass sand production increased \$274,300.85 severance tax was colfrom 94,970 short tons in 1940 to lected. 109,299 short tons in 1941. Tripoli production increased from 1,430 tons in 1940 to 2,093 in 1941.

# Reaches Peak

kansas in 1940 totaled \$33,690,489.20,
State Geologist George C. Branner
said yesterday in a letter of transmittal to Governor Adkins accomnanying an annual report

1941\* Increase+
(Preliminary) Decrease-

Coal Production Up.

During 1941, production of coal increased 218,323 short tons over the total for 1940 (1,310,262 short tons) a gain of 16.5 per cent.

A recent report by the Arkansas Geological Survey has pointed out the availability of about 700,000 tons of Arkansas coal for use in steam electric power plants with an aggregate capacity of 250,000 kW at Ft. Smith and near Clarksville.

Mercury production, stimulated by a rise in prices from \$165 per flask on January 1, 1942, increased 31.9 per cent in 1941. Total production for 1941 is estimated at 1,610 flasks, compared with 1,221 flasks in 1940.

Portland cement production increased from 772,000 barrels in 1940 to 915,000 in 1941, an increase of 195 per cent Cynsum guarred in 1940 increased from 772,000 barrels in 1940 to 915,000 in 1941, an increase of 83 complete analyses were made.

sas, notably quicksilver, manganese, zinc and lead, have stimulated interest in the development of deposits of these minerals, and much data has been distributed concerning form Association.

Barite production for 1941 in Hot Minerals valued at \$33,690,489.20 Spring County totaled 19,000 short were produced in the state in 1940, tons. This is an increase of 158.4 per the Arkansas Geological Survey

persons have been working on two WPA projects sponsored by his department. One, the state Mineral Survey, examined 28,962 square miles in 50 counties and collected 87,653 mineral samples for examina-

Ground water surveys have been completed in 37 counties. Workers investigated 10,034 wells and 1,365 springs in connection with the ground water surveys, bringing to 41,168 the number of wells investi-

## Minerals Of Arkansas **Important**

Gazette 3-14-42

The war is causing Arkansas to gain a new place of importance among other states because of its huge and diversified mineral resources, Richard J. Anderson, acting state geologist told members of the Arkansas League of Women Voters at their annual dinner-meeting at the Woman's Club last night. The speech was the closing fea-

ture of the program for the first

day of the two-day meeting. The final session will begin at 9:30 a.m. today at the Woman's Club. Minerals which heretofore have been classed as unprofitable for mining have taken on new values because foreign sources have been eliminated or curtailed, the geologist explained. The government has stepped in to provide new capital for processing plants, aiding in the discovery of new fields, and assisting in the survey and mod-ernization of old mines, Mr. Ander-

son said. There is a sufficient supply of minerals such as iron, copper, and lead, and the government has simply ordered miners and operators in these fields to "step on it," he

In another field such as aluminum and manganese, where there is plenty of ore, but inadequate facilities for processing it, the government has provided the necessary capital for the new plants.

Manganese is now being extracted from sea water, he said.

There are certain minerals such as chromium and tungsten for which substitutions must be found. In the case of tin, there apparently is no substitute, and a rigid program of conservation must result. He predicted there would be no boom in minerals as in the World war days, because the supply was being kept on a true demand basis.

Much Mapping Done.

"The WPA Topographic Mapping project has resulted in the completion of the mapping of two quadrangles having areas totaling 126 square miles, and the completion of 195 linear miles of leveling and 400 miles of traverse necessary for future topographic mapping. One quadrangle previously surveyed by the WPA mapping project, the Keo quadrangle previously surveyed by the WPA mapping project, the Keo quadrangle with an area of 65 square miles, was lithographed during the year by the U. S. Geological Survey on a co-operative basis.

"Office work has resulted in the publication of three maps and the compilation of data which it is anticipated will result in the publication of 19 reports."

Mineral Production

A. M. Lund, state director of the War Production Board's Contract Distribution Branch, and R. J. Anderson, acting state geologist, spoke at an organization meeting of the Arkansas Mineral Producers and Processors Association at the Y. M. C. A. yesterday. "Government Need for Nonmetallic Minerals" was discussed by Mr. Lund and Mr. Anderson spoke on "Arkansas Resources." The organization is made up of men representing all nonmetallic mineral industries in Arkansas, such as bauxite, glass, cement, brick, tile and gypsum. The association, now in its formation stage, plans to cooperate with the war industry and with plans outlined by the National Academy of Science. Academy of Science.

Arkansas Resources Not In Statistics.

Arkansas has invaluable recources not identified in statistics on bauxite or coal or petroleum or lumber production or cotton or other crops. These intangible assets consist in the latent and potential skills of Arkansas men and women, as increasing industrial development may create opportunities to cultivate and ap-

At the Jones Mills aluminum plant on Lake Catherine, Supt. Harry Slagle pointed out to a Gazette reporter a young man whose job some seven months ago was washing and greasing Mr. Slagle's automobile. Now that young Arkansan is handling a highly technical job in connection with lining the "cooking pots" with carbon and fire bricks. These "pots" or "cells" are the big containers where (to simplify chemical language) the oxygen in the alumina (aluminum oxide) obtained from the Hurricane Creek plant in Saline county is "cooked out," leaving the pure metal to be cast into ingots.

What Arkansas has always lacked in unfortunate measure has been opportunity for more of its peopletens of thousands of its people—to develop and employ their ability to become skilled workers in the better paid fields of industry. It is industrial progress and development like that represented by the huge metallurgical plants on Lake Catherine and at Hurricane Creek that will provide more work for skilled people and bring the widespread benefits of well paid employment.

## Search For War Minerals Progresses

Surveys of quicksilver, titanium and antimony fields in Arkansas will be started soon, J. R. Thoenen, district engineer of the U. S. Bureau of Mines at Little Rock said yester-

T. M. Romslo, examining engineer for the Bureau of Mines, returned vesterday from an exploratory trip into the zinc fields near Smithville in North Arkansas. The Rush and Joe districts have been examined by engineers from the bureau

Mr. Thoenen said recommanda-tions as to production in the fields will be made when surveys are com-pleted. The Dodd City-Zine (Boone county) area will also be surveyed in the near future.

The hureau has several seismograph crews working on bauxite deposit locations. The quicksilver, titanium and antimony surveys will be the first complete surveys of these ore deposits in the state. Mr. Thoenen announced the addition of George K. Dale and James L. Val-George K. Dale and James L. Val-lely, associate mining engineers, to the staff making the bauxite sur-vey. Two more engineers are ex-pected next week, he said.

## New Mineral Exhibit At Museum

Arkansas Democrat

A beautiful mineral exhibit has Cryolite History Museum, MacArthur park, Mrs. Bernie Babcock, director, said Plant Ready

The exhibit, composed of clays and sands taken from the bauxite March 20 fields, was collected, prepared, and presented to the museum by David Bizell. The collection of over 40 colored powders includes shades of pink, brick red, garnet, browns, yellows, gray, lavender, and variations and graduate tints of each. The county Arkansas and is school led. colors are caused by mineral solu-to be completed next March 20, tions in the clays and sands includ-Representative Norrell (Dem.,

Considerable Minerals In Four Counties Minerals

Aug. 21-42 Gazette

Saline, Pulaski, Garland and Montgomery counties comprise one of Arkansas's best mineral producing sections, the state eGological Survey said in a survey report on the four counties, released yester-

Since the first bauxite production in 1896, a total of 9,835,376 long tons have been mined through 1940. Gross income was \$57,571,391 Known reserves as of January 1 1942, were approximately 20,695,000

Saline county's bauxite production since 1899 was placed at 8,481,869.99 tons valued at \$49,482,041.72; Pulaski's at 1,353,506.16 tons valued at \$8,089,349.62. The two counties' production prior to 1922 was 3,978,431 tons valued at \$21,-

Arkansas's known commercial bauxite deposits are limited to two areas. The more productive is five miles east of Benton. It contains seven square miles. The other is three miles southeast of Little Rock. It contains eight square miles.

Approximately 48 per cent of the bauxite produced in the United States in 1940 was used for production of metallic aluminum. This record was made before the general start of war production. An alumina plant has been built near Bauxite, an aluminum plant be-tween Malvern and Hot Springs. Other Mineral Products. Richard J. Anderson, acting state

geologist, said that structural stone is runner-up to bauxite with a value of \$4,739,720 for the period 1923-40. Total production was "much larger" than the figure given. No record is available for stone used in building residences.

Gravel and sand rank third in the four counties, their values being \$2,170,287 and \$1,124,257, respectively. There is no production record before 1923.

Novaculite, for use as whetstones, was fourth—4,816 tons valued at \$2,887,912 from 1885 to 1940. Raw novaculite reserves are extremely

Clay and clay products ranked fifth, their combined value being \$2,060,157 from 1923 to 1939. Their utility presents an important technical and economic problem, Mr. Anderson said. Fuller's earth production in Saline county at one time was second only to that of Florida in quantity and value produced. By present day standards, this production is small. Arkansas has had no Fuller's earth production in 25 years.

Oil and Gas Unlikely.

Apparent physical conditions do not favor the accumulation of oil and gas in Pulaski, Saline, Garland and Montgomery counties, the report said. Drilling results, not conclusive, further support the improbability of oil and gas in this

Data for the mineral report was gathered by the state Mineral Survey of the Work Projects Admin-

## State Has 9-442. JUDGE REPLIES Nine Needed

Nine of the 17 critical minerals for which Representative Randolph of West Virginia yesterday proposed a \$26,000,000 prospecting party are found in Arkansas, most in sufficient quantities for commercial mining, State Geologist Richard J. Anderson said yesterday.

The West Virginia representative proposed the boring of 1,000 holes 3,000 feet deep in 37 states, including Arkansas and six other Southern states, on government-owned lands. Mr. Anderson said this proposal is probably impractical because there is no assurance that the best deposits are on the public

List of Minerals. He listed the following critical minerals known to be found in Ar-

Cadmium—This mineral is found as an impurity in "turkey fat" zinc ore of

Graphite — Amorphous graphite, a low grade ore, is found in Arkansas but it is not suited for industrial

## TO CRITICS OF DR. G. BRANNER

Arkansas Gazette 12-25-42

## Geologist Said to Be Highly Qualified.

Dr. George W. Branner, who as state geologist was attacked from the floor of the 1941 House of Representatives after he appeared as an expert witness for the Aluminum Company of America in a federal monopoly trial at New 1101e. "Then we discovered that we did not have enough to meet our needs and that we must perforce proceed to the utilization of what we did federal monopoly trial at New York city, had been vindicated by the presiding jurist yesterday.

"I do not feel that the criticisms

Manganese—Found in Independence county and the Ouachita mountain section of Polk and Montgomery counties. It is principally a factor in steel alloys. Several operators are now producing manganese in this area.

Antimony—Found in Sevier county. It is used in alloys and in the manufacture of antimony oxide, a pigment used in paints. Antimony is now in critical demand because of its use in the hardening of lead for bullets. It is not being commercially mined in the state.

"I do not feel that the criticisms was justified," wrote Federal Judge Francis G. Caffey, who after a two-year hearing absolved the company of all charges.

Representative Talbot Feild Jr., of Hope assailed Dr. Branner's action and, in a prepared address, quoted government lawyers as intimating that the Arkansas geologist perjured himself. Mr. Feild indicated:

1. There was something reprehensible in Dr. Branner's appearance for the corporation.

an impurity in "turkey fat" zinc ore of north Arkansas. It is not prevalent enough to mine as a separate ore but is a by-product of zinc production in the north Arkansas area.

Cryolite — The only commercially valuable deposit of this mineral, used as a catalyst in the electrolysis of bauxite, is found in Greenland. Synthetic cryolite, however, is being producted at Bauxite, Mr. Anderson said. Fluorspar—There has been no accurate survey of the deposits of this mineral in the state but there are deposits in Garland county. There has been no commercial mining there.

Graphite — Amorphous graphite, a low grade ore, is found in Arkansas low grade ore low grade ore but in the corporation.

That the geologist may not have acted with the knowledge of former Gov. Carl E. Bailey.

That his compensation as a witness was greater than it should have been.

Taking cognizance of the government lawyers' attacks, Judge Caffey wrote in his lengthy opinion:

"Both of the experts."

"Both of the experts, Dr. Branner and Mr. Litchfield (vice president and geologist may not have acted with the knowledge of former Gov. Carl E. Bailey.

That his compensation as a witness was greater than it should have been.

Taking cognizance of the government lawyers' attacks, Judge Caffey wrote in his lengthy opinion:

"Both of the experts, Dr. Branner and Mr. Litchfield (vice president and geologist of the Aluminum Company of America), were highly qualified and I regard both as reliable. There was some criticism There was some criticism of Dr. Branner in argument. I do not feel that the criticism was justified. I feel, therefore, that I ought to add that he impressed

low grade ore, is found in Arkansas but it is not suited for industrial needs.

Titanium—This mineral is being mined at Magnet Cove in Hot Spring county. The Titanium Alloys Company of Arkansas is now building a mill at Magnet Cove.

Mercury—Cinnabar, the ore from which mercury is obtained, is being mined by a half dozen operators in Pike and Clark counties.

Quartz crystal—Large deposits of this mineral are found in Garland county but only about 10 per cent of it is pure enough for commercial use. Quartz crystal is badly needed for radio receiving sets. Most of the Arkansas crystal is full of flaws.

Mica—Mica in granular form is found in Arkansas but this form of the mineral is not of value. The sheet form of mica, used for insulation, is in demand in war industries.

Bauxite—Arkansas has the nation's largest deposits of this ore, from which aluminum is obtained.

Representative Smith in his prospecting plan listed Arkansas as a source of vanadium. Mr. Anderson said this mineral is not found in the state.

The United States Bureau of Mines is already conducting an extensive survey of the mineral resources of the state. Recommendations for commercial exploitation will be made by the bureau as soon as the survey is completed.

Jiable. There was some criticism of Dr. Branner in argument. I do not feel that the criticism was justified. I feel, therefore, that I ought to add that he impressed ought to add ing on the facts. The fact that Judge Caffey thought it necessary to reply to them indicates his feel-

ing regarding them.

"Mr. Feild's use of material of this kind as a basis for attack impressed me then, as now, with his lack of interest in the facts.
"Compensation paid to me was

in no sense unusual for compensa-tion for expert testimony. Ample proof of this exists on every hand."

## Full Use Of Minerals Held Delayed

Arkansas Democrat 12-30-48 Washington, Dec. 29 (A).—Secre-

today the department's efforts to obtain complete utilization of certain domestic minerals had been delayed by "the inertia of the old ture of rubber, that they give chanway," industrial traditions and es-

said in his report for the fiscal year ended June 30.

The department's work, Ickes said, had been dedicated to a "vig-

had been fruitful. He cited a 43 per cent increase in generating capacity on reclamation projects, laboratory developments to make possible recovery of sufficient low-grade management area for use in grade manganese ores for use in 87,000,000 tons of steel annually, and

the discovery of 1,000,000 tons of bauxite, source of aluminum.

"The soundness of the conservation policies put into effect by your administration when it came into office is now clearly apparent," Ickes told the president. "Our activities during the last year in mob-ilizing for war could never have been as effective if previously policies had been less sound."
Not Self-Sufficeint.

"For years," Ickes said, "this nation has been deluded with the idea that it was practically self-sufficient, that its industrial processes were the world's best and that its supplies were practically inexhaustible.

In that field, Ickes said, he could not "with candor" say the department had been successful.

Mineral Use Problem.

"Our proposals for the complete utilization of certain domestic minerals for example did not meet with

erals for example did not meet with wholehearted welcome. The inertia of the old way, the weight of industrial tradition, the following of the established pattern frequently induced heavy industries to postpone technical innovations. In my opin-

ion this was a postponement of the inevitable."

Arkansas Development.

Ickes spoke of the work of the Geological Survey in providing "basic data essential to the plan-That his compensation as a witness was greater than it should have been.

That his compensation as a witness was greater than it should have been.

In the West." He mentioned large development of manganese deposits in Arkansas, the discovery of tungsten in an Idaho mine which "by the end of the fiscal year, was the nation's largest single tungsten producer" and the producer," and the production of chromite from "the abundant deposits in the Stillwater district of Montana," where a new mill is "turning out 150 to 175 tons of chemical grate chromite concentrates daily." trates daily.'

## Utilization Of Chanite To Be Pushed

Arkansas Gazette

Special to the Gazette. Hot Springs, Feb. 24.—Adolph Chanosky, Fort Worth metallurgist and discoverer of chanite, an ore from which a new metal said to be harder than steel can be made, made public here today communications from William J. Russell, director of the Division of Commerce, Bureau of Industry, state of New York, Albany, and his assistant, Edward H. O'Brien, informing Chanosky they were ready to take the initiative in placing chanite at the disposal of tool manufacturers in New York, and if necessary, to construct plants for manufacturing purposes, or to convert chanite to any other possible use Chanosky would suggest.

The report on chanite was made public last week by Lt. Col Oliver F. W. Cromwell, head of the Chemical War Service of the government. He has been experimenting with the product at the laboratory of the U.S. Bureau of Mines, Salt Lake City, where drills have been made which, he said, are much harder than steel and cut through steel easily.

The New York state officials

called attention to Col. Cromwell's report and offered Chanosky the facilities and influence of Bureau of Industry for further develop-ment of his product.

Washington, Dec. 29 (AP).—Secretary of the Interior Ickes declared "There is a shortage of tools," Chanosky said, "which Messrs. Russell and O'Brien are anxious to ite the utmost consideration. The hotter chanite gets the harder it "Whether this postponement has been costly to the nation in the long run, remains to be seen," he said in his remark for the seen, "he heat at 3,000 degrees. The heat at 3,000 degrees the harder it becomes. The government at Salt Lake City had to construct special furnaces for experiments, as heat at 3,000 degrees. heat at 3,000 degrees Fahrenheit is necessary. Chanite actually burned out electric furnaces at 2,-

best he can to serve his country, to hear that the civilian job at home what he takened a leave of absence from ain't his job no Lem says anybody what has got a state job in Arkansas had better not go off and leave it if he aims to find it here when he comes

Not Safe to Take Leave

From a State Job.2-28-43

Well, I see where another one of our former state officials has joined the Absentees Club. It must be a great surprise to a fellow what is a long ways off, doing the

aims to find it here when he comes back after the war. The only safe thing to do is to set tight and hang, on with both hands.

Little Lem says "leave of absence" is just a polite phrase meaning something stronger than goodbye.

Your loving sister,

## Kimzey Plans No Changes In Personnel

Joe W. Kimzey, former chairman of the State Department of Public Utilities, whose appointment as state geologist by Governor Adkins, was confirmed today by the Senate, said there would be no changes at present in the personnel of the

geologist's office.

There is expected to be an increase in field work under the administration of Mr. Kimzey, who frequently has made the sacraried that such work cannot be carried out "within the four walls of an office.

Field Work Cramped.

"The field work program I have in mind probably will be considerably cramped because of the appropriation for the department," Mr. Kimzey said. "Since a part of the severance tax, earmarked for the geologist's fund, is available, and is not to be used for any other purpose if not appropriated for executive for field work. It is hoped by those interested in further exploration and development of economic minerals that a supplemental appropriation may be given the department during the remaining days of the session."

Mr. Kimzey succeeds Dr. Geo. C.

of the session."

Mr. Kimzey succeeds Dr. Geo. C. Branner, who is in the Army as geologist. Richard A. Anderson, assistant geologist, who has been acting geologist since Dr. Branner left, will be retained as assistant, Mr. Kimzey said today.

Sharp Confirmed.

The term of Floyd Sharp, Little Rock, whose appointment last year by the governor also confirmed today by the Senate, will expire in 1949. Mr. Sharp was appointed to fill the unexpired term of Ben E. Carter.

Carter.

Arthur J. Johnson, Star City attorney, who was appointed by the governor to replace Mr. Kimzey, is expected to assume his duties late this week or early next week. Since he will serve out the unexpired term of Mr. Kimzey, confirmation of his appointment was not necessary, although his name was presented to the upper chamber as a courtesy by the governor. His term will expire in 1945. The term of the third commissioner, A. B. Hill, will expire in 1947. Selection of a new chairman of the commission will be made by the three commissioners at a meeting expected to be held soon.

#### Readers' Views 3-3-43

Resents Appointment.Ark. To the Editor of the Democrat:

I see that the governor has appointed state Senator Kimsey to be state geologist. Obviously, this is a political appointment of no value to the state. Kimsey will have the doubtful distinction of being the only state geologist in the United States. state geologist in the United States who is not a geologist and who has no qualifications for the job.

Things like this hold back the state's development and lower it in the eyes of all thinking persons.

The current bill to be discussed in the legislature concerning abolition of violence in strikes should be passed. These labor racketeers should be brought under the law as well as the corporations which have permitthe corporations which have permitted them a parasitical growth through the indulgence of socialistic New Deal government.

Yours truly,

ROBT. T. CHAPMAN.

been added to Mineral hall, Natural yesterday.

added to the Antique Department by Mrs. C. E. (Eva L.) Mandeville Sr., Mrs. Babcock said. The dress came from Georgia where the cotton was grown, spun, and woven by the original owners.

The museum is open daily from 1 to 5 p. m. An increase in soldier attendance has been noted since the museum has become known as the birthplace of Gen. Douglas There is no admission Arthur.

"rkansas Democrat

ed in the exhibit,

A 100-year old dress of soft-textured cotton homespun has been today that "on November 21 the

buildings were 16 per cent com-plete, 95 per cent of the equipment had been ordered and the priori-ties granted."

"The cryolite plant is scheduled to be in full operation by May 31," he said, adding that it was being built in connection with the vast alumina plant near Bauxite, Ark. Synthetic cryolite, which is made from calcium fluorite, is used in

the process of precipitating alumina, or bauxite concentrates, to make aluminum. "Hot Spring county can produce the fluorite in abundance to supply the cryolite plant," Mr. Norrell

said.
"For several months it has been will my judgment that Arkansas will keep a large-scale aluminum industry permanently, after the war is over."

## **VALUABLE NEW** METAL SAID TO **EXIST IN STATE**

1-21-43 Arkansas Gazette

## Possibilities Seen In Chanite.

special to the Gazette.

Hot Springs, Feb. 20.—Important details concerning Chanite, the hardest known metal in the world of science, was given today by the man who discovered it and for which it was named, Adolph Chanosky, Fort Worth oil man and metallurgist, who has made many surveys in many counties in Arkansas, during which he discovered deposits of other ores and clays that attracted attention of the government and now are close-

the government and now are closely guarded military secrets.
Chanite was discovered while Mr. Chanosky was seeking a new supply of manganese for the British government. Large deposits were discovered in this state. It was named Chanite by Lt. Col. Oliver F. W. Cromwell of the Chemical War Service and head of the army section of the War Production Board. Mr. Chanosky declined to comment on location of the deposits.

"That is something I have been

the deposits.

"That is something I have been asked by the government to keep as an important military secret," he said. He said there appeared to be an unlimited deposit, occupying an area of between five and six square miles, extending at present from 10 to 20 feet and with possibilities that its depth may exceed 100 or more feet.

Practically nothing has been said about the discovery. The United States Bureau of Mines laboratory, at Salt Lake City, and the laboratory at College Park, Md., have been trying to find possibilities for the metal.

#### Possibilities Endless. Says Chemical Officer.

"The knowledge that we have gained from a study of this metal is enormous," Colonel Cromwell aaid in his report, "and its pos-sibilities seem to be endless at the

mr. Chanosky is registered at the Arlington hotel here. He came from Washington, following a conference with government officials regarding probable use of his Chamite

In its natural state, Chanite is said to form about 25 per cent of a light buff sandy loam, and is a black shiny granular substance, neither iron nor steel, but with the properties of both. It is stainless, with most of the properties of stainless steel. It has not been affected by either acid or alkalies. As iron fillings respond to a magnet, so does Chanite. It can be smelted like iron. It can be heated to produce a material as soft as the softest steel or harder than any known steel. It can be welded or molded the same as iron or steel, with the process having no effect on the temper of the Chanite metal.

Mr. Chanosky is said to be the only man who discovered a great product, developed the processing necessary and produced the finished product.

Colonel Cromwell Gives Enthusiastic Report.

Colonel Cromwell's report on Chanite is enthusiastic. He said it probably would take years "to complete the possible uses of this metal."

In its natural state, Chanite is and the instrument field, Tools are sorely needed for this, and mand metal bearings are needed for the instruments. Then there is the plating field. In the field of hot pressure casting, this metal probably will produce one of the finest tools ever placed in a tool room. From Chanite may be made razor blades, tools of all types of helmets, instrument bearings, all type of airplane parts, including armor and engine, paint pigments, abrasive materials of all types, and cutting materials, armorphic morphic projectiles and many, many other items.

"It would seem that Chanite will be the leading metal industry from now on. It would seem that this is the greatest discovery of this generation, from a metal standpoint. Chanite possibilities seem unlimited at this time. The fact that it does not take a great deal of technical equipment to produce the metal, and the simplicity of the process, accomplete with its low cost. The field of the instruments are sorely needed for the instruments. Then there is the plating field. In the field. Those with instruments are s its natural state, Chanite is

probably would take years "to makes Chanite one o

onel Cromwell said in his report.
"First, various types of machine tools, for which there is a great need at this time. Second, aviation. This list is too great to dear with there. Third, medical instruments. Fourth, apparatus for the shemical industry.

Mr. Chanosky has been coming to Arkansas five years, but has been coming to Arkansas five years, and has placed at the government's disposal to Arkansas five years, and has placed at the government's disposal to Arkansas five years, and has placed at the government's disposal to Arkansas five years, and has placed at the government of the five years.

He attended Texas Christian University and years five years, and has placed at the government's disposal to Arkansas five years, and has placed at the government's disposal to Arkansas five years, and has placed at the government's disposal to Arkansas five years, and has placed at the government's disposal to Arkansas five years, and has placed at the government's disposal to Arkansas five years, and has placed at the government's disposal to Arkansas five years, and has placed at the government's disposal to Arkansas five years, and has placed at the government of the five years, and has placed at the government of the five years, and has placed at the government of the five years five years five years, and has placed at the government of the five years five years

"We know from experience that it will work as a substitute for most any type of steel machine tools, and that it will do a very much better job at less cost. Its cost of production will be only a fraction of the cost of steel today. This we have proved to our own satisfaction. "In aviation the uses to which it tons, etc.

"In aviation the uses to which it tons, etc. "There is no metal known that "There is no metal known that it may be put are almost limitless. It is possible that it might make a better propeller than the present used metal. It may be possible to make a thinner propeller of it, due

#### CHANITE DISCOVERER



Adolph Chanosky, discoverer and developer of the new metal, chanite, which was named for him, is shown (center) in a laboratory of the United States Bureau of Mines at Salt Lake City. A piece of chanite has been welded to a steel drill. At the left is a piece of the hardest steel made. The chanite drill cut through it as though it were paper. The Bureau of Mines built a special furnace to process chanite, which has a

"We have welded it to the various types of steel. It probably would make one of the best welding materials on the market. At the present time there is a demand for welding the there is a demand for welding the transfer. for welding rods. Consider for a moment the armor situation.

"One reads of the shertage of

"One reads of the shortage of plates for freighters. Here is another place for it. Salt water should not have any effect on it, besides it can be produced in unlimited quantities and af exceptionally low cost. There seems to be great possibilities that Chanite can be drawn into a fine wire. This metal would be very important where high temperatures are involved.

The senate Wednesday completed legislative action on a house

"Consider the instrument field.
Tools are sorely needed for this, and metal bearings are needed for the instruments. Then there is the plating field. In the field of hot

## "It would seem there are four Discoverer's Work Placed main uses for this material," Col- At Government's Disposal.

3-12-43

## Off The Record

By C. F. Byrns

pleted legislative action on a house bill to appropri-



Byrns

ate that sum from the state geology fund, which arises from severance. taxes on various natural resources. It is in addition to the regular appropria-tion for mainte-nance of the department, which included funds for co-operation with the United States Geological Survey for

stream gaging work. Joe Kimsey, newly appointed director of the state geology department, plans to use the \$25,000 a year to search out the mineral resources of the state which are known to exist but have never been thoroughly explored, and to locate others if they can be found.

THE WAR HAS GIVEN great impetus to the development of Arkansas minerals. It is unfortunate that the state did not do, some years ago, what it has decided now to do-spend money to find out what is hidden in the earth. The war offered our greatest opportunity for use of mineral resources which have not been developed. But the geology department always has been more or less a stepchild of state government. Its appropriations have been sufficient to maintain the office staff. But, as Mr. Kimsey says, the state's geologic resources are not to be found under the capitol dome. It is necessary to go out in the field to find them.

The \$25,000 a year which now is made available is to be spent for field work. Several minerals of potential value are known to exist in the state, in addition to those which now are being developed. Bauxite is being mined

like 4,000,000 tons a year, to provide aluminum for the war effort.

There is good prospect that Arkansas' aluminum plants can be kept in operation after the war, because of their high efficiency and the low-cost electricity which will be available if the new power plant on Lake Catherine is com-pleted. Cinnabar deposits in Southwest Arkansas are being developed to provide mercury for which there is great war-time de-mand and high price, Lead and zinc deposits in North Arkansas never have been developed on a large scale, and their possibilities are to be explored. A variety of rarer minerals exist in various places. The Ouachita mountain regions of the state contain a number some of which are being number, some of which are being developed.

The state's geology department should find all the natural de-posits which have any potential value, map them, analyse them, and make available to everybody all the known facts about them. The new appropriation provides the money for a good start.

THE JAM on appropriation bills in the session of the legislature which adjourned Thursday has produced one ironic effect.

Early in the session, the senate adopted a resolution requiring that senate bills be delivered to the governor within 96 hours after

they are passed. Its purpose was to force the governor to act on all bills, especially appropriations, before the legislature adjourned. to its toughness. It can be used in airplane engine parts, such as piston rings, valves and valve seats and super-charger parts. In the plane itself as struts, armor, or the sheets of sheet metal of the wings or fuselage, etc. In fact, any place where a tough metal is needed.

The practice heretofore has been to let them pile up until the session ended, in order to give the governor 20 days to sign or early signature those which received less than three-fourths majority, and thus come within the restrictions of Amendment No. 19.

The jam on hudgeth

all of the measures over until the closing days of the session. He now will have 20 days to act on practically all appropriations. The peace treaty between the gover-nor and the senate bloc gave 27 or more votes to most of the important bills. It appears likely that no appropriation will be in-valid because it did not get enough votes, and the governor still has as much time as usual to pick and choose among them.

## Says Mineral Development Held Back Sum. march 12 th Interests controlling zinc and

lead mining and milling in Oklahoma, Missouri and Kansas "have been more interested in supplying the war needs from their own rapidly-waning properties than in bringing into being new reserves which could be cheaply produced in competition with their present investments," State Geologist Joe W. Kimzey charged yesterday.

W. Kimzey charged yesterday.

This, he said, is one of the principal reasons deposits of lead and zinc ores in North Arkansas have been neglected during the war. He said concerns with "large investments" which are "tied up in the Missouri, Oklahoma and Kansas mines, are dominant," and that Arkansas ore has gone unmined.

Criticizes Federal Agencies.

Another factor in damaging Arkansas has been "the slowness of the federal agencies in supplying financial and technical aid when such aid could have meant the difference between success and fail-

ference between success and fail-ure of development," Mr. Kimzey

"Federal aid or other aid in respect to access roads leading into the Rush Creek, Cave Creek, Jasper-Ponca district and Kingdom Springs area even to a fraction of a per cent of such aid given by a per cent of such aid given by federal divisions to various mining efforts in other states and areas easily could have been the means bringing out a large and constant tonnage of zinc and lead from several North Arkansas counties."

same thing, he asserted, "could have been the case in respect to manganese, antimony, barium and other minerals, including even the possibility of copper in the mountainous counties of the central west border counties.

Hopes for State Aid. "I hope to see the day when Arkansas can invest for profit some of its own money in access roads to break down some of these barriers to a realization by Arkansas people and industrialists of the potential profits awaiting sound, energetic organized private enterprise."

Another factor in the failure of

now in great quantities, something like 4,000,000 tons a year, to provide aluminum for the war effort. The promotion schemes," Mr. Kimzey said. Some seem appalled that "nearly 50 economic minerals" are to be found in the state, he added.

Arkansas's mineral resources demand the attention of industry, planning agencies and labor, he

## KIMZEY MAKES PLANS TO DEVELOP MINERALS NEEDED IN WAR EFFORT

Work of the state Geological Department during the 1943-45 biennium, which begins July 1, will be devoted to exploration of minerals intended specifically for use in the war effort, state Geologist Joe W. Kimzey said he intended to employ a competent field staff before start of the biennium so the work could be begun without delay. The 1943 legislature made a supplemental appropriation of \$25,000 to the department for war explorations and additional assistance may be given by the War Production Board through the Bureau of Mines and the United States Geodetic Survey.

There are about 24 minerals in Arkansas, largely undeveloped, which have definite war use possibilities, Mr. Kimzey said. They include antimony strontium, mica, lead, zinc, manganese, gypsum, lime, phosphate, quartz, industrial diamonds, magnesium, pyrite and

tive assurance of funds for explora- in Harrison.

diamonds, magnesium, pyrite and Fuller's earth.

The minerals have considerable possibility in both quality and quantity, Mr. Kimzey said. The lead and zinc fields are only about five per cent developed, he estimated.

Co-operation Procession of the owners of mining properties in North Arkansas don't have enough money to go into mining operations in a big way," he said, "but nearly all of them can produce a little if arrangements could be made for them to produce small quantities."

He said his plans of the owners of mining properties in North Arkansas don't have enough money to go into mining operations in a big way," he said, "but nearly all of them can produce a little if arrangements could be made for them to produce small quantities."

and zinc fields are only about five per cent developed, he estimated.

Co-operation Promised.

The new state geologist, appointed several weeks ago by Governor Adkins, said he had received tentative estimates of funds for exploration and establish a buying agency in Harrison.

#### BIRMINGHAM MAN GETS GEOLOGY JOB

LITTLE ROCK, Ark., April 11— (P)—Appointment of H. E. Wheeler, Birmingham, Ala., as minerologist for the geology department was announced Saturday by State Geologist Joe W. Kimzey.

Kimzev said Wheeler would report here April 15 or April 30. He now is on special assignments for the University of Alabama Museum of Natural Science. He formerly lived in Little Rock.

## **Nickel Deposits** Sought in Saline

A preliminary survey of known possibilities of nickel productive ore in central Saline County will be conducted by the State Geological Survey in connection with landowners and prospectors in that sector, State Geologist Joe Kimzey said vectorals.

tor, State Geologist Joe Kimzey said yesterday.

Mr. Kimzey said there was no occasion for excitement on the possibility of the nickel ore deposit but that several members of his staff would make preliminary surveys during the next several days.

He stated that any rush of lease hunters would result in misfortune for many persons.

#### Land Office Unable to Issue Mineral Rights Deeds.

Land Commissioner Claude A Rankin said yesterday that a 1943 law giving mineral rights to purchasers of tax-forfeited lands does not empower him to issue deeds to

The law itself would seem to take care of the transfer of rights, he said, but declined to comment on the necessity of obtaining state deeds to clear up title to mineral

Included in the law is a provision which says: "Where gas, oil and mineral rights in tax-forfeited lands have been reserved in any deed from the state conveying such lands, such rights shall immediately pass to the present owners of the fee title to such lands.

"Many persons who bought state ands before this law was enacted have written to ask us to issue a deed to mineral rights, Mr. Rankin said. "We cannot do it because it was not authorized in

Land Use Appraisers Will Be Selected Today.

Personnel of the appraiser's staff of the Land Use Committee will be selected at a meeting of the committee in the governor's reception room at 10 this morning. Under an act of the last legislature, the staff the reduced from a chief appraise to the reduced from a chief must be reduced from a chief appraiser and four deputies to a chief

appraiser and three deputies.

Harve Thorn is chief appraiser. M. I. Shuster, Troy Andrews, Harry T. Maxwell and M. A. Toland are deputies. Qualifications of the ap-

deputies. Qualifications of the appraisers will be studied.

Members of the committee are:
Aubrey Gates, J. L. Wright, Edgar
A. Hodson, Fred H. Lang, E. B.
Whitaker, Charles Q. Kelly, J.
Bryan Sims, Joe Kimzey, Murray
McLeod, L. A. Henry and Claude A.
Rankin, all of Little Rock; J. L.
Pinkerton of Norman, State Senator Lee Reaves of Hermitage, W. P. Pinkerton of Norman, State Sena-tor Lee Reaves of Hermitage, W. P. Sturgis of Arkadelphia, Dr. C. O. Brannen of Fayetteville and Lee Baker of Lake Village. Mr. Stur-gis is chairman; Mr. Henry, vice chairman, and Mr. Rankin, secre-

## STATE GEOLOGIST PLANS FOR HELP IN ZINC DISTRICT

Joe W. Kimzey, recently appointed State Geologist, made a state- ther belief that such local efforts ment in Little Rock a few days ago that work of he state Geological Department dur g the 1943-44 biennium, which agins July 1, will
be devoted to exploration of minerals intended specifically for use in

Thust you will have some time
to discuss these angles with your
associates and other business inter
Up to this time, few persons have
realized the possibilities of Arkansas minerals and even those who
sas minerals and even those who abundance in this state occur in greater
abundance in this state occur

employ a competent field staff be- ing." and additional assistance may be a successful conclusion. given by the War Production Board through the Bureau of Mines and the United States Geodetic Survey.

The new geologist said he had received tentative assurance of funds for exploration out of a new congressional appropriation and had hope of having aid of the Bureau of Mines in the zinc and lead area in North Arkansas this summer.

Mr. Kimzey stated that the North Arkansas fields probably were improperly discredited during the first World War by a practice of surface stripping in the high grade ore areas. A lot of people, he said, got the impression that the fields were exhausted because the high grades were scraped off by picks and shovels. He said he planned to organize "pick and shovel boys" again to mine the zinc and lead ores. A "pick and shovel" boy himself during the World War, he said he believed this method would bring the best results in sparsely settled areas.

"Most of the owners of mining properties in North Arkansas don't have enough more yety go into min-ing operations in a big way," Mr. Kimzey said, "but nearly all of them can produce a little if arrangements could be made for them to produce small quantities."

He said his plans called for the raising of about \$5,000 initial funds for hiring an assayer to analyze ores for the small mine owners, to provide facilities for pooling of the ores, and establish a buying agency in Harrison.

In this connection the following letter written by Mr. Kimzey to Mr. Louis Watkins, prominent Harrison business man, will be of interest:

"You may be interested to know that I have wired the Governor, who is in Washington at this time, asking him to contact the War Production Board and Metals Reserve Company on a proposition of establishing a stockpile or stockpiles for lead and zinc in the Arkansas district where these agencies would accumulate and buy such production as may be had by various operators, pending a time when the same agencies should subsidize a central milling plant, and if justified by subsequent production to erect smelting facilities.

"This move may not bear direct fruit, but it is my idea that it is worth trying. However, in order to add zest and force to the effort, I believe it is imperative that the business interests in the area, including yourself, the people of Harrison and Yellville, coupled with the individual operators and would-be operators in the field, should join hands in a concerted move directed to the War Production Board, Metals Reserve Company, and also to the entire Congressional delegation to give this matter immediate consideration. I might add here that I still have great faith in the ability of the field to produce, and I believe we

will be able to demonstrate accordnot the above proposal meets with favor, I think the people in the district should be giving serious thought to establishing local gathering points to accord local markets for such production as small operators may be able to make until such time as more formidable facilities can be worked out, and it is my furwill be helpful in drawing support for the proposal suggested above.

"I trust you will have some time

Mr. Kimzey said he intended to be joined in this worthy undertak-

fore start of the biennium so the To the editor of the Echo it seems work could be begun without delay. that Mr. Kimzey's ideas are good The 1943 legislature made a supple- ones, and that the people of this enmental appropriation of \$25,000 to tire area should lend all possible efthe department for war explorations forts toward working them out to

## Field Office Of Bureau Of Mines Moved

Gazette 6-13-43

The Field Office of the Bureau of Mines has moved into new quarters in the home formerly owned by the Brack family, 2812 South Tyler street, J. R. Thoenen, district engineer, announced yesterday.

Formerly quartered in a building on the site of the old Arkansas state penitentiary, the field staff is composed of approximately 40 techni-

cians under the supervision of Mark C. Malamphy, project engineer. Since the staff eventually will be increased to around 100 persons to carry out an expanded program projected by the bureau, more room was needed for offices and laboratories, Mr. Thoenen said.

The new facilities will include a fire assay laboratory and a wet analytical laboratory. Laboratories at the former location will be moved into the new quarters about July 1. The first of 13 new core drill rigs now under construction is ex-

pected to be delivered this week.

The new offices were opened last week with special ceremonies, dur-ing which Mr. Malamphy showed motion pictures of South American district office and the field office.

Geologist Plans Minerals Display

The State Geological Survey has begun work on a large display of Arkansas ming als on the fourth floor of the captol, it was announced yesterday.

said the department now was arranging an exhibit on lead and zinc minerals which are found in northern Arkansas. Display cabinets are being placed in the corridors to hold other examples of economic minerals.

## will be able to demonstrate accordingly as time goes on. Whether or Arkansas' Minerals Playing Vital Part in War Effort

By MATILDA TUOHEY. July 1943
Arkansas' wide variety of minerals, perhaps more than

any other state in the Union can boast, has assumed a new importance since the beginning of World War II and a new and fuller realization of the value of the state and nation looms as state authorities join hands with mineralogists to develop new mines to speed the flow of vital ores into the defense effort and at the same time plan for postwar uses

sas minerals and even those who have forseen the opportunities are be joined in this worthy undertaking."

To the editor of the Echo it seems that Mr. Kimzey's ideas are good ones, and that the people of this entire area should lend all possible efforts toward working them out to a successful conclusion.

sas minerals and even those who have forseen the opportunities are handicapped still by lack of organization and insufficient funds. In fact, making the state itself conscious of its minerals has been a major problem faced by State Geologist Joe W. Kimzey.

Joe W. Kimzey.

Foremost strategic mineral, for which the state has received nationwide publicity, is bauxite. The state is now supplying a large percentage of this aluminum bearing ore to war production plants.

However, in addition to the

of the war effort. Owners and lessees of several of these properties have put forth very patriotic and, in some instances, heroic efforts to bring these ores into use during the emergency, but due to one handicap or another have been prevented from reaching the production stages necessary to accomplish uniform and sustained production.

In spite of limited appropriations, the State Geological Survey has attempted to work out a program through which co-operative drilling and marketing arrangements could be set up. Mr. Kimzey hopes that whatever facilities for drilling that his department has may be used soon in co-operation with the U.S.

sy which Mr. Malamphy showed bein pictures of South American ning camps to personnel of the activity of the trict office and the field office.

Geologist Plans

Minerals Display

The State Geological Survey has begun work on a large display of Arkansas minerals on the fourth loor of the capitol, it was announced yesterday.

Joe W. Kimzey, state geologist, and the department now was arbanched and zinc and which the U. S. Boureau of Mannes to establish peyond a doubt the practicability of working several of the most outstanding zinc properties on Newton, Boone, Searcy and Marion counties.

Sources of antimony ores have been restricted considerably by the war. In this instance too, lack of proper organizing and financing has hindered the development of Arkansas antimony in Sevier, Howard, Montgomery and Clark counties.

Mr. Kimzey said the shallow deposits of antimony have been and are capable of contributing a considerable tonnage of high grade or had facilities been made available early in the war.

Further contributions also could

Further contributions also could Further contributions also could have been made if tacilities had been made for a central milling plant at a reasonable cost to facilitate the concentration of ores from several adjacent workings. Overenthusiasm on the part or individual miners resulted in too many mills being built and as a consequence other examples of the exhibit would show capitol visitors the great variety of Arkansas minerals and be the first step in an educational program directed toward making Arkansas residents mineral-conscious.

enthusiasin of the miners resulted in too many mills being built and as a consequence much loss has been suffered by individual properties. Mr. Kimzey reasons that if several productions could have been grouped and passed through a single milling unit, great costs could be saved and productions and and lasting bastion put on a sound and lasting bas-

On the brighter side of the picture, barium-sulphates in Hot Spring County are being produced uniformly and in large quantities by two large concerns. The volume of this material is passing ut into the oil well in dustries and to glass manufacturers and is playing an important indirect part in facilitating the war effort. There are other barite ores yet to be developed in On the brighter side of the picportant indirect part in facilitating the war effort. There are other barite ores yet to be developed in Arkansas, and the Geology Department hopes that proper exploration will make these available before there is a danger of a shortage.

Important in the manufacture of itself these and other materials for

signal flares and other materials for signal flares and other marginal grand and normal use purposes are war and normal use purposes are known to occur in some quantity in the state and are being prospected with the hope of getting one or more properties in production within the next few months.

of this aluminum bearing ore to war production plants.

However, in addition to the bauxite, there are deposits of at least a dozen other minerals in the state with large accurances and sufficient high grade ore to justify and make profitable further operation and development.

Indicative of the hamstringing because of insufficient money is seen in the lead and zinc areas in north Arkansas. The State Geological Survey recently completed a trip of examination in that section and found a somewhat unsatistactory condition existing in respect to available finances to provide properties with necessary milling and mining facilities and to meet the serious drag on labor in the area by war industries in other parts of the state and in the state adjoining on the north.

Some 14 zinc properties were examined, which disclosed workable deposits of high grade ores which should have been put in production many months ago in view of the critical shortage of these ores and their urgent need to meet the needs of the war effort. Owners and lessees of several of these properties have put forth very patriotic and, in some instances, heroic efforts to bring these ores into use during the emergency, but due to one handicap

Another of Arkansas' claims to mineral fame is the fact that there is perhaps a wider range of building stone material in Arkansas than in any other state in the union. The wide range of marbles of variegated color and texture down through beautiful syenites and near granites with a high desirability for rough stone work, as well as polished surfaces for interior decoration and monumental stone, hold out field which when properly exploited will duplicate and in many instances excel building or ornamental stone heretofore imported from al stone heretofore imported from

Slates and Shales.

Further possibilities are seen in the slates and hard shales of the state, especially in Western Arkansas, which, when properly utilized, probably will furnish a major portion of the roofing material for the Southern states. Lignite, or low order coal, is gaining recognition rapidly for its dye properties and is being utilized by two operating companies. Larger developments will occur when the quality and quantity of this ore is fully known, Mr. Kimzey stated.

Equally well-known as the baux-

Equally well-known as the bauxite and quartz crystal supplies are the oil and gas resources of the state. Arkansas would be justified in its pride of the oil and gas contributions to the war effort and to the general industrial development of the state.

Titanium ores are being mined in Central and Southern portions of the state, including large operations and production of titanium in Hot Spring County. The state geologist said the reserves of the ore hardly have been touched, although the have been touched, alth mining and milling operation of the ore in Magnet Cove perhaps ranges with any other single production of this mineral anywhere in the world.

Rarer minerals such as vanadium,

diamond mines, have seriously lagged in production. The Geological Survey said it was not prepared to offer any plausible reason why the Pike County diamond occurrences could not have been furnishing a considerable portion of the badly needed industrial diamonds throughout the entire period of the throughout the entire period of the

Contributions of Arkansas minerals to the war effort are noteworthy. But it is important to point out also their possibilities in a peacetime world if given a chance to prove their worth.

Engineers Club to Hear H. E. Wheeler Monday

H. E. Wheeler, of the state geological survey staff, with head-quarters in Little Rock will ad-dress the Fort Smith Engineers club Monday at a luncheon meeting at the Ward hotel, speaking on the subject, "Mineral Resources of Arkansas, Developed and Yet to Be Developed."

Mr. Wheeler is the author of a volume on the life of Timothy Abbott Conrad, an early Amer-ican scientist, and of many articles on natural history and zoology.

Visitors may attend the luncheon, but must make reservations at the hotel by mid-morning Mon-

J. L. Saunders, president, will

Southwest American, Fort Smith, Ark.

## Arkansas Supplies About 12 Critical War-Needed Minerals

ARKANSAS is producing at least a dozen critical minerals needed in the war which are not available in quantities elsewhere in the United States, Dr. H. E. Wheeler of the Arkansas Geological Survey staff, told the Fort Smith Engineers club Monday noon at the Ward hotel

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More than 90 per cent of the aluminum made in the United States comes from Arkansas bauxite, Dr. Wheeler said. The largest continental deposit of barium occurs in Arkansas and in the sain more than the s barium occurs in Arkansas and is providing practically all the bar-ium now produced in this country. The largest supply of titanium in the world is located in Arkan-sas and is being used for a varie-ty of purposes, including smoke screens, hardening steel and coating welding rods. Only Arkansas provides quicksilver, needed for a host of uses in war and peace. Molybdenum has lately been discovered in Arkansas and is now in production.

Dr. Wheeler said the Geological survey is trying to locate, investigate and aid in development of all kinds of mineral resources. in the state, to develop technical leadership to bring about their development and to acquaint the people of this state and others with the mineral possibilities of

Arkansas. Magnet Cove, between Little Rock and Hot Springs, is the "most remarkable igneous region in the world," Dr. Wheeler said. Arkansas diamonds are one point harder than anything produced in South Africa and could be developed. No reason exists, he said, why Arkansas dolemites could not be used to produce magnesium.

The Arkansas Geologic survey wil' investigate mineral deposits any where in the state as a public service, Dr. Wheeler said, and has men constantly working in the field aiding in commercial development of resources.

### GEOLOGIST WORRIED WHEN TERRAPIN PINES AWAY IN OFFICE 'CELL' Gazette 11-20

"Quartz Fairchild," the pet ter- elevator door, apparently waiting to rapin imprisoned in the offices of go downstairs and to freedom. state Geologist Joe W. Kimzey about six weeks ago, has been on a can get up considerable speed when hunger strike for nearly a week, the he wants to go somewhere and, ungeologist's office force said yes-like other terrapins Mr. Kimzey has

near the farm of J. W. Fairchild in Saline county while Mr. Kimzey near the farm of J. W. Fairchild in Saline county while Mr. Kimzey and Albert Hess, an assistant, were exploring for quartz crystals. It has been given the run of the geologist's office on the fourth floor of the aspitol and the outside hall-way since then.

Escape Cut Off.

Quits Eating.

Until a few days ago the pet, which has caught the fancy of the office, was not delicate about his eating. He readily devoured such tidbits as leaves of lettuce fed to him daily. But for the last five days he has refused to eat a thing.

"I think he's restless and wants

experienced, it seldom draws within its was captured on the roadside its shell when approached. Quits Eating.

Escape Cut Off.

"Quartz," whose name is printed in white on his shell, has made several explorations of his own in the capital and once were found at the c capitol and once was found at an strike.

Minerals Of State Listed By Survey

list of 48 "economic minerals" which "hold possibilities for profitable investment and postwar em-

which hold postware to provide able investment and postwar employment" is contained in a pamphlet published by the state Geological Survey yesterday.

The pamphlet, with a card containing samples of 12 minerals, will be sent to about 25 editors, to chambers of commerce, county libraries and other groups, state Geologist Joe W. Kimzey said.

"We did not attempt to set out in detail the extent of the minerals or their locations," he said, "but only to arouse a little curiosity about the potentialities of Arkansas's resources. Later we will furnish more data."

Pessibilities.

The list of minerals and some of the possible uses which he said could form the bases of important industries:

Antimony — Storage battery, type metal and bearing metals.

Asphalt—Road material and bitu-

men.

Barite—Pigments, glass, rubber and oil well drilling.

Bauxite—Aluminum, chemicals and

Cadmium—Pigments, reductions and

Calcium—Graining and refining of alloy steel and deoxidizing of lead and

Clay—Pottery, brick and cosmetics. Coal—Fuel, tar and synthetics. Copper—Industrial metals and chem-

Diamonds - Gems and industrial

Dolomites—Lime and magnesium. Feldspar—Fillers, paints and chemi-

cals. Fluorspar — Chemicals, metallurgy and synthetics.

Fuller's earth-Filters and refining. Garnet—Abrasives and gems.

Gas—Fuel, sulphur and synthetics. Graphite—Pencils and non-abrasives. Gravel and sand—General construction and roads.

Gypsum—Cement, filters, plaster of

paris, and agriculture.
Iron—Metallics, pigments and chem-

Kaolin—Refining, pottery, cosmetics and refractories.

Lead—Industrial uses, metals and chemicals.

Pitch, dyes, chemicals, resins and plastics.

Limestone — Industrial, agricultural and chemical uses.

Magnesium—Metal, chemicals and

Manganese—Alloy, iron and steel.
Marble—Building, monumental and
namental objects. Mercury-Explosives, chemicals and

Mica-Insulation, building and non-

abrasives.

Molybdenum—Special alloy steels, substitute for nickel, tungsten and

Novaculite-Whetstone, roofing and Oil—Fuel, lubricants, industrial uses

and chemicals. Phosphate—Fertilizer and chemicals.

Potash — Chemical and industrial

Quartz—Filters, fusing and abrasives.

Radio quartz—Radio uses.
Silica sand—Glass manufacture and foundry moulding.
Slate—Roofing.
Soapstone—Non-abrasive, insulation.
Strontium—Pyrotechnics and chem-

Sulphur-Acids, industrial uses and

chemicals.

Syenite—Building and kindred uses.

Titanium — Welding rods, alloys, paints and chemicals.

Wavelite—Matches, pyrotechnics and

chemicals.

Zinc.—Metals, pigments and industrial chemicals.

Zirconium.—Refractories, heat-resisting porcelain, glass and ceramic glazes.

#### Mica In Other States and In

Gazette Arkansas. 11-25-44 More than 300 mica mines have been in operation in North Carolina since the war began and miners have earned more than ever before. In Texas, Virginia, South Dakota, Colorado, Georgia and New Hampshire the mica industry has profited by increased demands for this mineral.

In Het Spring and Saline counties, Arkansas, there are deposits of two types of mica—biotite and phlogopite. But Arkansas was not included among the mica-producing states mentioned in an article in the Manufacturers Record.

More mica is consumed in this country than in any other, and even in normal times less than half of the amount needed is produced here. The phlogopite variety has been imported

from Canada. Until the war hindered shipping, mica was imported from Madagascar, India and Brazil. This mineral is used in the manufacturing of roofing, wallpaper, airplane ignition systems, radio precision equipment and in electrical generators and transformers. Powdered mica, when added to paints, increases their durability.

Arkansas has a greater variety of rocks and minerals than many other states have. A number of its rock types are suitable building materials; it has fuel and metallic and non-metallic minerals. The source of supply, the fuel and the labor are here for many a different type of enterprise.

It is true that some of our mineral deposits are not large enough to justify large scale commercial operations. Lack of easy means of transportation and the distance to manufacturing centers have retarded full exploitation of the state's mineral wealth. But Arkansas offers many opportunities for industries based on

Glass Sand Plant At

Harrison, Jan. 24 (Spl). — The Silica Sand Company plant at Everton has been reopened after a shutdown of several months for repairs and new installations. Carroll Cart-

wright is superintendent.

The plant processes sandstone from the big bluff in Everton into glass sand for use in glass factories, foundries and machine plants. About 20 men are employed on a one-day whift basis.

The plant shipped from 35 to 40 carloads of washed sand over the Missouri and Arkansas railway each week during production two years

Arkansas Ore May Be Used In

Making Glass
Democrato 1-29-45
The ingenious Russians, when they don't have natural ores and can't get them due to the war, generally find a way out as evidenced by their tremendous drive against the Nazis on the eastern front.

In this case, they are using nepheline syenite, a mineral which last week reported results of a two-year study of Arkansas resources and industries, told the Budget Committee that the governor Laney as to the source of the revenue.

Senator Lee Reaves of Hermitage a which last week reported results of a two-year study of Arkansas resources and industries, told the Budget Committee that the governor laney as to the source of the revenue.

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Arkansas Democrat 1-31-45

# Report Urges Improved Use Of Resources

A special report setting out how Arkansas may improve the use of its raw materials through further research and industrialization was to be presente td the Senate late this afternoon by the research committe of the upper house.

Appointment of the committee, which will submit the lengthy report, was authorized by passage of Senate Resolution No. 34 of the 54th General Assembly requiring the committee to study possibilities of developing new uses for Arkansas products, and ordering it to report its findings to the 1945 legislature. Industrial Utilization Urged.

Industrial Utilization Urged.

The committee, which is headed by Sen. Earnest Maner, Hot Springs, stated that a study had been made of developments in raw materials production, industrial utilization of materials and of several scientific discoveries leading to new and improved uses of raw materials and their products through both physical handling and chemical processing.

The committee added that in its report it attempted to determine the extent to which known processes can be applied to Arkansas materials derived from forestry, agriculture and mining.

In addition to Chairman Maner, committee membership includes Sens. Clyde E. Byrd, El Dorado; John W. Cloer, Springdale, and Lee Reaves Hermitage Reaves, Hermitage.

Arkansas Democrat 1-30-45

The United States consumed 4,896 short tons of antimony in 1943. 10 to Sent Qu

Democrat 2-10-45

## Officials Seek \$100,000 Fund For Research

Three members of the legislative Joint Budget Committee and Gov-ernor Laney are scheduled to confer Monday regarding proposed ap-propriation of \$100,000 for an ex-pansion of the University of Ar-kansas Bureau of Research's pro-

gram.
The Budget Committee yesterday tentatively approved the appropriation pending a conference with Governor Laney as to the source of

unless the iron content duced.

At present, American glass makers are getting their nepheline in pure quantities from Canada. Some of the ore is being shipped out of the state by the Big Rock Stone and the state by the Board of Fiscal Control.

An air-tight, non-transferrable clause tacked onto some of the appropriations by a group of independents will be removed from the bills. The general livestock bill was amended yesterday by representatives from Craighead and Hempstead counties in an attempt to obtain district livestock shows at Jonesboro and Hope.

The lower house passed a Senate bill allowing the land commissioner to appoint land appraisers and mem-

to appoint land appraisers and members of the Land Use Committee of the State Planning Board. The appraisers and members are now appointed by the governor.

## DEVELOPING OF LIGHTER METALS WILL BE SOUGHT

## Senate Hearings Begin Feb. 27.

Washington, Feb. 11 (A).-The Senate Small Business Committee plans to see if 60,000 new small business enterprises car be founded on the nation's expanded aluminum and magnesium industry.

Hearings will be held beginning February 27 on war development and postwar use of industries based on these metals, Senator Murray (Dem., Mont.), committee chairman, announced. He said ways would be studied for disposing of the government's huge investments so as to stimulate healthy competition, strengthen the existing small

business system, and insure new firms entering the field. "In addition to the employment

goal, the committee will direct its inquiry toward anti-monopoly aims, and it will study the small enter and it will study the small enterprise potentialities believed especially great in the fabrication of aluminum and magnesium products," Murray said.

Principal products, fabricators and users of the metals, as well as small enterprisers, will participate in the hearings.

and users of the metals, as well assemall enterprisers, will participate in the hearings.

Industrialists invited to participate include: R. S. Reynolds, president, Reynolds Metals Company; Willard H. Dow, president, Dow Chemical Company; G. R. Gibbons, senior vice president, Aluminum Company of America; J. O. O'Gallagher, president, Columbia Metals Corporation; C. C. Loomis, president, New England Lime Company; Henry Kaiser, president, Kaiser Company Inc.; W. S. James, chief engineer, Studebaker Corporation, and president Society of Automotive Engineers; A. W. Scarrett, vice president, International Harvester Company; H. H. Howard, vice president, Fruehauf Trailer Company; J. J. Pelley, president, Association of American Railways; John E. P. Morgan, chairman, Management Committee of Aeromautical Chamber of Commerce; J. P. Neiman, president, Aluminum

Management Committee of Aero-nautical Chamber of Commerce; J. P. Neiman, president, Aluminum Research Institute, and others. Public hydroelectric power will be represented by David E. Lilien-

thal, chairman, Tennessee Valley Authority, and Paul J. Raver, ad-ministrator, Bonneville Power Ad-

"This is to be no witch hunt, but the co-operative effort of private industry, big and little, with government to develop the full facts surrounding the light metals industries and the problems of disposing of the government's buge holdings. of the government's huge holdings in them," Murray said.

#### An Area That Seeks Greater

Gazette Development. 2-16-45 Some of the state's important industries are located in Clark, Garland, Hot Spring and Saline counties, and representatives of those counties have organized an area industrial council, which is surveying the region with the purpose of seeking increased industrial development.

These four counties have much in common in physical conditions. this region the Gulf Coastal plain meets the Ouachita mountains. Some counties have a more rugged topography than others, but all embrace mountainous sections. The weathering and eroding geological formations of the uplifts have enriched much of the soil. The surface varies from solid rock to rich deep bottom land.

The streams belong to one system. The Ouachita, flowing through Garland, Hot Spring and Clark, gives

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enuine Calcutt