### Mammoth Compared With Other Springs

Spring?

catalogues it as a spring of the first of Geology and Mines.' Magnitude, but lists several others, inmagnitude, but lists several others, in-cluding two in the Ozark region of Mis-discharge data for different springs are, souri, as larger.

moth Spring are moved to retort with timates that were probably too large, some heat that the United States Geo- and because the measurements were logical Survey doesn't know what it's made at different times, and, therefore

cials admit that the cataloguing of for a period of several years it will be springs according to size is a difficult impossible to determine which of them proposition, and that comparisons are actually have an average discharge of not only odious but likely to be inac- as much as 100 second-feet or how they

In an introduction to a paper on age discharge."

"Large Springs in the United States,"

The Survey's list of Ozark springs of

quantity of water they discharge, se- and Blue, 108. rious difficulties are at once encounter-ed. First of all, it is very difficult to Mammoth Spring in the records of the comparison. The water seldom issues barrels a minute, which is equal to 837 from a single opening and may issue second-feet. from a great many openings, which may But even that figure does not satisfy is regarded as a group of springs, each lons a minute, which is equal to 1,285 of which has an individual name. This second-feet. difficulty is made especially perplexing However, even if we accept the Surby the present lack of detailed maps or vey average of 250 second-feet, we find other data regarding most of the large that Mammoth Spring is well named.

springs.' Meinzer are the fact that some springs Mammoth Spring alone could supply a city of 1,615,000 population if each innearly constant and the further fact habitant used 100 gallons of water that springs are variously gauged according to minimum, maximum and av- lation of Arkansas with a little less

erage discharge. Anyway, the Survey has found there the United States; that is, springs hav- in New York city, with more than 5,ing an average discharge of 100 second-Eight of these are in the Ozarks, seven if we accept the figures of Mammoth

ments in water-supply papers of the United States Geological Survey, a report by T. J. Rodhouse of the Missouri

less and having a temperature of 58 from Cretaceous limestone, all in the or 59 degrees Fahrenheit in summer. The water is hard, having about 158 smaller, on the average, than the Ozark parts per million of lime and 139 parts springs.

tiary limestone, according to Mr. Mein-zer, and the largest of the group is Sil-in closely associated groups may be conver Spring, which has a discharge ranging from 342 to 822 second-feet and gives rise to a navigable stream. There are 11 springs of the first magnitude from various formations, including

Just how mammoth is Mammoth | Engineering Experiment Station, and unpublished records of the Geological The United States Geological Survey Survey and the Missouri State Bureau

however, not entirely comparable, be-Whereupon the loyal citizens of Mam- cause for some springs they include estalking about. Their spring is the largest single spring in the world, so there!

As a matter of fact, the Survey offirank in maximum, minimum and aver-

Oscar Edward Meinzer of the Survey the first magnitude and its figures of their average discharge follow:

"When an attempt is made to compare the large springs in the United States with respect to their size, or the Double, 136; Welch, 115; Bennett, 110

determine what constitutes a unit for Arkansas Geological Survey is 9,000

be close together or scattered over a considerable area. What is called a single spring in one locality may be equivalent to what in another locality spring flows at the rate of 580,000 gal-

A second-foot of water's equal to Other difficulties pointed out by Mr. about 646,000 gallons a day. Hence, than 100 gallons a day. Some spring!

In 1916, according to Mr. Meinzer, are 65 springs of the first magnitude in the average daily consumption of water feet (100 cubic feet a second) or more. lons, or about 810 second-feet. Hence

being in Missouri and one (Mammoth) being in Arkansas. The other major springs are in Florida, Alabama, Texas, Idaho, Montana, Oregon and Califorina.

In this chapter on "Springs in Early Paleozoic Limestone in the Ozarks Region of Missouri and Arkansas," Mr. Meinzer lists the large springs, "which rank with the very large springs of the country, although not quite equaling the largest springs in Florida or the largest springs in the areas of volcanic rock in the Northwest."

In ormation regarding the springs in the Ozarks Region of Missouri and Arkansas," Mr. Meinzer lists the large springs of the subterranean stream near the base of a high bluff of cherty limestone. The country, although not quite equaling the largest springs in Florida or the largest to the Northwest."

In ormation regarding the springs in the Ozark region was obtained for the Survey's paper from "brief descriptions and miscellaneous discharge measurements in water-supply papers of the United States Geological Survey for use in Arkansas Geological Survey for use in making a comprehensive survey of all springs in the state. Several thousand blanks will be mailed to points throughout the state to secure information on all springs, with especial attention to springs in the areas of volcanic rock in the Northwest."

In ormation regarding the springs in the state of Arkansas. Mammoth Spring is one-eighth of a mile north of the town which bears the same name, in Fulton county. It issues for a high bluff of cherty limestone. The course of the subterranean river that feeds the spring is thought to be marked, eight miles northwest, by a sink hole three-fourths of a mile long, known as the department, Dr. George C. Branner, state geologist, said today.

Mammoth Spring is one-eighth of a mile north of the town which bears the same name, in Fulton county. It issues the same name river that feeds the spring is thought to be marked, eight miles northwest, by a sink hole three-fourths of a mile long, known as the department of the department of the departm (Continued on Page 10.)

tinge but as being odorless and taste- Texas has four major springs issuing

Idaho has 15 major springs, Oregon The Florida springs issue from Ter- 16 and California 7, all issuing from

limestone and sandstone.

#### **EXCAVATION DISCLOSES** May ANOTHER HOT, SPRING

Hot Springs, Ark., Nov. 25.—(AP) new hot spring was discovered here

The new spring gushed forth when uncovered during excavation work on Hot Springs mountain, where for many years 46 thermal springs have flowed.

Calculations by George Bolton, assistant park supervisor, were that the new spring yielded 45 gallons a minute at a temperature of 145 degrees Fahrenheit.

#### DIGGERS FIND FIVE **NEW HOT SPRINGS**

#### One Exceptionally Large With Temperature of 112 Degrees.

Special to the Gazette. 3-18-31

Hot Springs, March 17.—Workmen employed by the Wickes Engineering and Construction Company while excavating for the construction of a new reservoir pump house near the office of the national park supervisor, revealed five new hot springs, one of which was reported to be exceptionally large, with temperature of not less than 112

Hot springs here owned by the gov-

ernment now number 32, all located on Hot Springs mountain.

#### Three New Hot Springs Are Found at Resort

Hot Springs, Ark., Aug. 23. (2) Hosovery of three new and exceedingly hot medicinal springs flowing out of the side of Hot Springs mountain from which 47 other government controlled hot springs flow, was announced by engineers working on a federal representation of the springs flow.

promenade project here.
Each of the springs was discovered by excavation close by the spot where a deposit of manganese was recently discovered.

#### Survey of Springs Mulso In State Proposed

## Old Springs of Little Rock

Among Other Advantages as the Site for a City Were the Fine Springs Found Here by the Pioneers . . . The One Near the County Jail Had Been Used by the Indians Long Before

White Men Came Adventuring Up the River. By FLETCHER CHENAULT.

Little Rock was a choice location for a city because it was the first plateau the explorers found when they navigated the Arkansas river. The point of rocks here was the first high ground they reached after leaving New Orleans. Day after day a lowland plain studded thick with cottonwood forest had stretched out on both sides of the river

They must have realized at once that here was an ideal location for a settlement in the wilderness, but daring adventurers of those days were forced to consider other details of homesteading, the most important being the necessity of pure drinking water. That meant springs, cold and clear even during hot summer days. We may assume that game was abundant wherever they reared their log-cabin homes but excellent springs also were de-

These springs—they still exist beneath the city but have lost their usefulnesswere the beginning of the city's water supply. Deep wells were bored in time and many cisterns built, but it was not until 1884 that a water distribution system was installed, and several years after that before its use became general. In 1884 many springs continued in use and water still is taken from springs in the suburbs. It is a fact that spring water has been used in Little Rock more than a century. Picnic parties use it now when they motor out to Boyle park for an evening meal over a camp fire.

In this modern age, however, it is necessary for the health authorities to maintain constant supervision over spring water in the cities. Water from open springs in the outskirts of the city is analyzed at regular intervals to make sure it contains no disease germs. Frequently the analysis from springs shows danger of typhoid, and other diseases, and the public is warned not to use it. A few days ago one of the springs in Boyle park was closed because of unsanitary conditions

In early days there was little danger from contamination. Possibly disease germs had not followed the flag. Men who vorked in stores and also the housewives walked only a short distance to scoop up water fresh from subterranean passageways. Most of the springs emptied into the town branch, at that time an open stream through the heart of the city, and others emptied into the river above Main street. Still others flowed into Swaggerty branch and reached Fourche by that route, and eventually the river

When a campaign was launched in 1820 narrated to the author by Maj. Jacob water for use in making steam by the of the ardent patriots in the wilderness. to move the territorial capital from Arkansas Post to Little Rock, one writer in Hill, in 1833. Mr. Pope was so impressed of the site proposed for the capital, and corded all the salient facts at the time concluded: "Several springs of good water and referred to them many years later issue perpetually from the hills-a bless- when compiling his history. ing which, west of the Mississippi river, is seldom met with.'

The most noted spring of early days is the one a few yards west of the county jail, which now is walled up, from which Spring street derived its name. This is believed to have been a favorite rendezvous for Indians perhaps a century before Little Rock was incorporated. It was a noted watering place in 1809 when an expedition site of the future capital of Arkansas and on the elevation where the old statehouse, headed by Captain Hillare, believed by many to have been Jean Lafitte the pirate, came up from New Orleans in search

It would have been interesting in those early days to drop in on a Fourth of July

Och 16, 1932 came to it and remained for weeks at a seeking an outlet to the sea. Many of them time. In the early days it supplied water still flow into the town branch and others for most of the inhabitants for drinking reach the river by a devious course. ARKANSAS and domestic purposes. Later it supplied celebration, which were the main events RIVER >>> CHERRY MULBERR (3rd ST. WALNUT ORANGE (5-4) SPRING.

Some of the best known springs in the early days of Little Rock. The one shown in the upper left-hand corner of the map at the foot of Spring street was a favorite rendezvous of Indians before the pioneers came. The noted spring at Dr. Cravens Peyton's home on Main street between Third and Fourth streets, is the present location of the Gus Blass Company furniture store. Other springs were at the present location of the Western Union building, Gus Blass Company retail building and the Boyle building, and there were two in the block bounded by Third, Fourth, Scott and Cumberland streets. The old Bell spring was at Capitol avenue and Ferry street.

Pyeatt, a well-known planter of Crystal the Gazette gave a glowing description by Major Pyeatt's narrative that he re-

> of quartz near Crystal Hill which contain- near this spring. ed gold. It was sent to New Orleans to be the swashbuckling adventurers of that city. An expedition was organized by the age up the river, which they ascended to mysterious "Captain Hillare" and in that the present site of Dardanelle. But sevsame year the adventurers reached the camped by the spring made famous by In- now the War Memorial building, stands.

"The magnificent spring referred to," Mr. Pope wrote, or rather dictated, for he of these graves, and it was said to be, Details of this expedition set forth in was blind, "has a history far older than also, an old Indian burying ground. Pope's "Early Days in Arkansas" are the history of Little Rock. It was known

manufacturing enterprises near by."

The old spring was then (1895) enclosion, also, of the first settler's home in

It may be considered superfluous to add no gold here, nor elsewhere on their voyeral of them died here, and were buried In 1836 several persons objected to the site chosen for the state capitol because

Hundreds of tiny streams from the hills claimed to be authentic because they were far and wide among the Indians, who west of Little Rock flow under the city

There was always a feast at some leading citizen's home, a variety of tempting foods ed in the jail yard. It may surprise the and viands and sonorous toasts, such as reader to learn that spring water here "The Spirit of America-May It Ever Rewas used for making steam. It marks the main Free and Untrammelled." And there would be also a general gathering around In 1809, according to Major Pyeatt, a Little Rock. In July, 1812, William Lewis, some favorite spring for picture take and hunter known as Trammell found a piece a hunter, built his home, a rude shack, games, singing and dancing, for example, and political oratory.

Most of Little Rock's old springs downanalyzed and created excitement among that the New Orleans adventurers found town disappeared with the advent of modern improvements. Building contractors had difficulty restraining the flowing water when they excavated for deep foundations. The spring in the Boyle building at Main street and Capitol avenue was used a few days once to supply drinking water for the tenants of the building. This was an emergency, however, because whenever the water is used daily analysis is required to make sure it is not contaminated. It was necessary for several years to

(Continued on Page 8).

pump the spring water into the sewer, but when excavations were made for the Gus Blass Company building the flow from the Boyle spring decreased. There was a large spring under the Western Union building at Second and Main streets, and another under the Gus Blass furniture store on the east side of Main street. Many

Miss Georgine Woodruff, daughter of William E. Woodruff, founder of the Gazette, has a clear memory of most of the popular springs that once flowed in the downtown section of Little Rock. They

In the yard at Mrs. King's home on Fourth street, between Scott and Cumberland streets.

At the old Christian church, known as "Clock Church," because the town clock was in its steeple, between Third and Fourth and Scott and Cumberland streets.

On East Capitol avenue near Ferry street on part of the Bell property, which was bought by Miss Fannie Bell's mother, daughter of William E. Woodruff, a half

At the Woodruff home on east Ninth street was a clear white sulphur spring. This water was sometimes used, but most of the water for domestic purposes at the Woodruff home came from a deep well.

At Raleigh springs, Twenty-fourth and High streets, a swimming pool, called a "natatorium," was built about 35 years ago. Gum springs, in the vicinity of Fifteenth and McGowan streets, supplied most of the water for domestic use in that neighborhood and still supplies water through pipes.

Dickison Brugman, dean of Arkansas newspapermen, who has lived in Little Rock since antebellum days, except a few years in St. Louis, remembers when the spring at Dr. Peyton's home was a popular rendezvous and practically a public institution. Whenever there was a parade down Main street in hot weather the paraders, and even the spectators, made frequent trips to this spring to quench their thirst. Cold lemonade often was served there by the Peyton family to their

These springs of Little Rock were the scenes of many social and political gatherings, not only in antebellum days but long after the Civil war. Even those in private yards were regarded as quasi-public property, and thirsty wayfarers who followed the paths to them always found a gourd or cup hanging near by. It was before the days of germs and the water was cold, sweet and pleasant in winter

# 85-Year-Old Letter Gives Location of Salt Springs

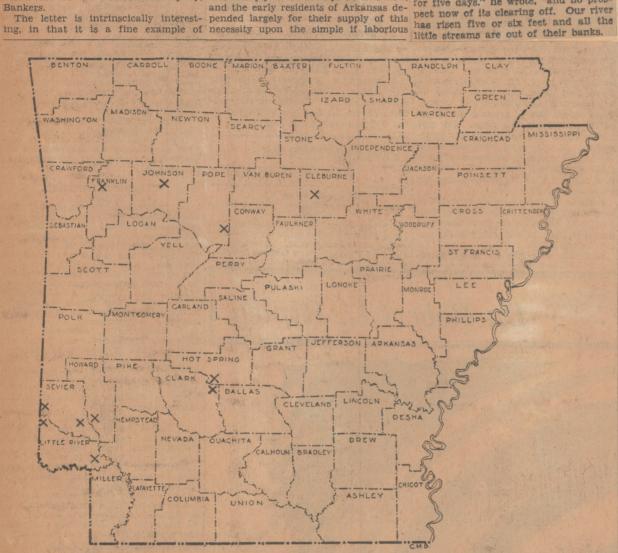
old papers recently, David F. S. Gallo-state could not sell the springs and Mr. Shall, Mr. Peay, who was then 26 way of Little Rock came across a letter tracts nor lease them for longer than Mr. Shall, Mr. Peay, who was then 26 way of Little Rock came across a letter tracts nor lease them for longer than years old, continued his letter with written in 1845 to his grandfather, 10 years without the consent of Concomments on current events in Little David F. Shall, by Gordon Peay, fath- gress. the present chairman of the

Rummaging through a collection of dividuals. It provided also that the

Salt was not mined so extensively Rock board of W. B. Worthen Company, and cheaply in those days as it is now, for five days," he wrote, "and no pros-Bankers.

"It has been raining here increased and no pros-and the early residents of Arkansas de-

"It has been raining here incessantly



The cross-marks on the above map show the location of the salt springs granted to Arkansas by Congress

envelope, and cost the sender 50 cents value of the salt springs.

subject—the salt springs of Arkansas.
It seems that Mr. Shall, wishing to

produce a map of Arkansas showing the salt springs granted by Congress to the state, wrote his friend, Gordon Peay for information regarding them. The letter found recently by Mr. Galloway was Mr. Peay's answer

'Dear David (he began) "Above you will find a description

the locality of the Salt Springs donated to the State by Congress taken from the plat on file in the State Land Office. I have merely given the Quar-Section in which each spring is situated which will be sufficient to enable you to lay them down accurately on your map.

The list described 17 springs in 11 localities in what are now Johnson,

Franklin, Cleburne, Pope, Hot Spring, Little River, Clark and Sevier coun-

A search of the file of early maps of Arkansas at the statehouse reveals that Mr. Shall made good use of the in-formation supplied by Mr. Peay. On one of these old maps, signed by him, all the "State Salt Springs" are clearly marked (as indicated in the accompanying illustration taken from Mr. Shall's man).

These salt springs, with six sections of land around each, were granted to Arkansas by Congress in 1836 in an act supplementary to the act admitting Arkansas to the Union. The act provided that the springs and the surrounding sections of land were to the selected by a state commission and were not to include springs the rights of which already were vested in in-

beautiful penmanship, was folded, seal-ed with wax and mailed without an collecting the saline residue. Hence the

no stamps, the amount of postage re- springs and the six sections of land ed being merely marked in one around each and to report on individual claimants of such springs and The substance of the letter, too, is of lands. The act also provided for the interest to students of Arkansas his-It deals with a once important agent to rent or lease the springs for a period of five years, the agent to re-

the sale of the whole or any part of cuit Court is the place. the saline grants.

it can be obtained by evaporation of saline solutions.

If you are interested in looking up these old salt springs, here are the descriptions given by Mr. Peay 86 years

T 11 N, R 23 W. S 1-2 Sec 2. T 11 N, R 28 W, NE 1-4 Sec. 24. T 10 N, R 11 W, SE 1-4 Sec 4.

T 8 N, R18 W, line Secs. 11 and 12 south of 1-4 sec. corner. T 6 S, R 19 W, NW 1-4 Sec 22; SE

1-4 Sec. 21; SE 1-4 Sec. 28. T 13 S, R 28 W, NW 1-4 Sec. 2. T 7 S, R 19 W, line NE 1-4 and SE -4 Sec. 3; SE 1-4 Sec. 10.

T 3 S, R 32 W, SE 1-4 Sec. 30; SW -4 Sec. 29; SE 1-4 Sec. 9. T 10 S, R 29 W, SE 1-4 Sec. 12; SE 4 Sec. 10; NE 1-4 Sec. 15 T 10 S, R 33 W, NW 1-4 Sec. 1.

"Your letter from the mouth of White river was not received until last night that are being built, first noticed that on account of the failure of the East- something unusual was taking place. for transmission. Incidentally, the letter was addressed simply to "David F. Shall, City of New York," and bore no stamps, the amount of postage rewashed away. I called on your mother and informed her of your safe arrival at the mouth, etc. I called at the bank today to see Mr. Crease relative to the matter you requested, but he was not in." (The Mr. Crease referred to was ing to get some of the gar eminetic.) in." (The Mr. Orease referred to was ing, to get some of the gas eminating John C. Orease, receiver for the old from the spring and have an analysis State Land bank, who later became Mr. made of it," Dr. Collins said, "but that

None of the records in the office of since you left, indeed if there was it is very probably that I would not hear dicate whether the salt springs are still it, for it seems to me that I am living they not seem to me that I am living it, for it seems to me that I am living flowing. Even if they are, they no in this community as a perfect stranger, longer have a commercial value, since and one reason why I cannot give you almost pure rock salt is now mined in the latest town gossip is because I do large quantities far more cheaply than not visit any of the young ladies; but mark me. I do not intend by that remark to slander the ladies, and you must not bring it up in judgment against me hereafter: for you know that I hold to the opinion that the man that does not visit the young ladies is

totally unworthy of their notice "Speaking of the ladies puts me in mind of music: returning from supper few nights since I heard Miss H. G. singing in her usual sweet style took my seat at our old place on the curb stone, of the pavement, and was sitting all alone enjoying myself as I thought in first rate style, when lo: in the midst of one of the sweetest strains it commenced raining so violently that was compelled to decamp, which makes the second time that I have been driven from there by the same fatality, if I may so call it. So in future I have determined not to wait at the gate if

I cannot get under shelter, at least I will hold to this determination until

'By the way I came very near for getting a small affair of Honor, that nearly took place here a few days since which will be news to you, and the recital of which I have no doubt will prove to you most conclusively that the days of ancient chivalry are returning; the circumstances as related to me are as follows. That at a party given to the citizens here on Wednesday evening last by old Capt. Pennywit" (a famous steamboat captain) "on board the Steamer Arkansas No. 4, Mr Elliott took offence at some of Frank Smithson's jokes and believed himself insulted: thereupon wrote the necessary billet doux and sent to Frank by his friend Mr. Whitely, demanding satisfaction for the insurt. You can easily imagine how Frank received it, after reading it over he asked Whitely what it was intended for. Whitely told him it was a challenge. Frank handed the document back to Whitely and told him to tell Mr. Elliott to go to hell, and that was the end of the whole affair, unless Whitely takes it up, which I do not think he will do. Elliott left the next day. Quite a chivalrous af-fair, don't you think so?" After a few more tit-bits of gossip,

Mr. Peay concluded:

"The 12 1-2 cents postage paid by you on your letter to me from the Mouth of White, I will pass to your credit in liquidation of your note given to me for that amount loaned you at the Catholic church, and in future I will not take your letters out if the postage is paid. Dave, the foregoing has been written in a hurry and I think if you can read it at all you will be satisfied that there is enough of it. So I will close it. I might add though that if I possessed the faculty that is attributed to the ladies in letter writing, I might have embraced the whole matter in one little postscript

#### Hot Spring Shows Greater Gas Pressure and Increased Heat.

Special to the Gazette.

Hot Springs, May 4.—The exceptional activity of the largest of the group of hot springs that have made this resort famous throughout the world, and which today has developed greater heat than ever before, according to official government records, and now seems to be surcharged with great gas pressure, has been under observation for over a week by Dr. William Collins, supervisor of Hot Springs National Park.

The spring has a capacity of over 200,000 gallons daily. It is located at the base of Hot Springs mountain and within a stone's throw of the upper end of "Bath House Row." All of the hot springs, it was said, contain evidence of gas of some kind, but it was not until workmen engaged in digging into the spring in connection with di-recting its flow into the new reservoirs

ceive 10 per cent of the proceeds, and Peay's father-in-law) "I will certain- is what I am going to ask the govern- the remainder to be paid into the school fund.

At the end of the first five years of operation, the legislature authorized the lease of the springs for a period of 10 "I was sorry to hear of your deten-At the end of the first five years of operation, the legislature authorized the lease of the springs for a period of 10 years, and two years later another act provided for the sinking of a salt well in Van Buren county to be leased by the state.

A search of the records at the state-house failed to reveal just how extensively the salt springs were worked. Nor do they show how much revenue they yielded. The grants, however, proved valuable because of the six sections of land accompanying each, and in 1847 Congress passed an act consenting to

#### Three New Hot Springs Found On Hot Springs Mountain.

Special to the Gazette. Hot Springs, Aug. 22.-Three new and very hot medicinal springs have been discovered on Hot Springs mountain, where 47 other springs of the same kind, all controlled by the United States government, are located. The three new springs are about the middle of the famous "Bath House Row," near a recently discovered deposit of manga-

Capacity of the three new springs has not been determined, as no effort has been made to develop them or enclose them. It is believed, however, that the flow will add considerably to the 1,000,000 gallons of the hot curative water from the 47 other medicinal springs that flow daily in the bath houses.

It was announced that the number of baths had increased 30 per cent this year over the corresponding period of 1933.

Architects who have been here from the National Park Department, Washington, propose to turn one of the re-cently discovered hot springs into a waterfall and permit it to cascade in a 30-foot fall, which would flow over projecting rocks opposite the Arlington hotel and adjacent to Fountain street The new springs were discovered while government men were making preliminary inspection of the route of the new concrete drive and walk running from Reserve avenue to Fountain street and past the new Army-Navy General hospital.