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HOT SPRINGS

NATIONAL PARK

Arkansas

Hot Springs

ARKANSAS

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Events OF HISTORICAL IMPORTANCE

- 1541 Hot Springs area probably visited by Hernando de Soto and party.
- 1682 Area included in land claimed for France by La Salle.
- 1762 Included in area given to Spain by France.
- 1803 Included in lands in the Louisiana Purchase and became United States property.
- 1804 Visited by Dunbar and Hunter Expedition.
- 1807 Manuel Prudhomme established first permanent settlement.
- 1820 First inn erected.
- 1830 First bathhouse erected. Bathing previously had been in unprotected hillside pools.
- 1832 Four square miles of land, including the hot springs, set aside by the Congress and Hot Springs Reservation created.
- 1874 First railroad line, the "Diamond Jo," reached Hot Springs.
- 1877 Hot Springs Reservation physically and administratively separated from city of Hot Springs, Ark., by Federal Survey and plotting of town sites. Streets, alleys, and public building sites given to city by Government. Permanent park area designated and restricted from settlement or sale.

NATIONAL PARK

OPEN ALL YEAR

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- 882 Erection of original Army and Navy General Hospital.
- 884 Arch constructed over Hot Springs Creek where Bathhouse Row promenade walk now is located.
- 903 Establishment of Federal Registration Board to regulate the practice of physicians.
- 921 Hot Springs Reservation made a national park by act of Congress.
- 932 Centennial Anniversary.
- 933 Completion of present Army and Navy General Hospital.



UNITED STATES DEPARTMENT OF THE
INTERIOR - - - Harold L. Ickes, *Secretary*

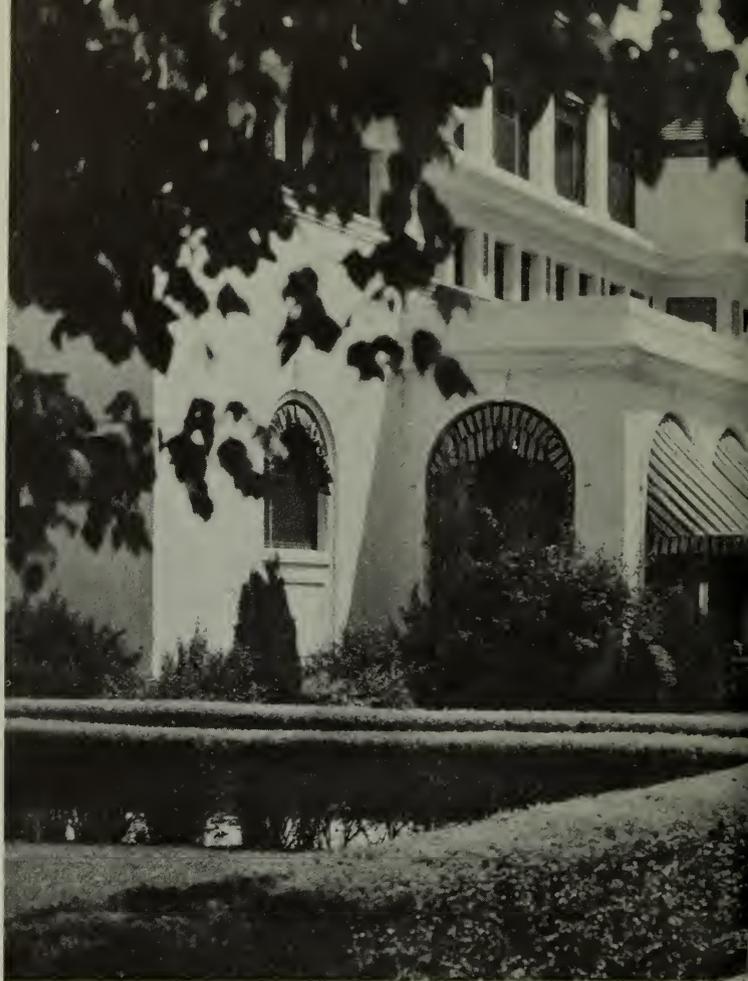
NATIONAL PARK SERVICE

Arno B. Cammerer, *Director*



BATHHOUSE

ROW



THE HOT SPRINGS of Arkansas, 47 in number, included in the Hot Springs National Park, are situated in a picturesque wooded portion of the romantic Ouachita (*pronounced Wash-i-taw*) Mountains. Adjoining the park area on all sides is the city of Hot Springs. The park and city are near the center of the State of Arkansas, about 50 miles southwest of Little Rock.

In addition to the many hot springs, there are also cold springs furnishing palatable waters which are extensively used as table waters. All cold springs are outside of the national park area and are privately owned.

The hot springs were probably visited in 1541 by De Soto, who traveled this region extensively in that year. According to tradition, the spring waters were used by the Indians long before the advent of the Spaniards. There is a tale that the various tribes battled from time to time for control of the hot waters, in which they believed the "Great Spirit" to be ever



present, but that finally a truce was declared under which their benefits were extended to the sick of all tribes.

It is believed that the earliest white settlement was made about the year 1800. Dunbar and Hunter, who visited the place in December 1804, found an open log cabin and a few huts built of split boards which had been erected by persons resorting to the springs in the hope of regaining their health. Manuel Prudhomme built a cabin in 1807 and was joined the same year by John Perciful and Isaac Cates.

GOVERNMENT CONTROLLED SINCE 1832

In 1832 the hot springs and the four sections of land surrounding them were, by act of Congress, set aside for the future disposal of the United States, not to be entered, located, or appropriated for any other purpose whatever, thus preserving the waters of the springs in perpetuity, free from monopoly



Werner photo

ADMINISTRATION BUILDING

and commercial exploitation. In 1921, by act of Congress, the reservation was changed from the Hot Springs Reservation to the Hot Springs National Park.

The year 1932 was fittingly celebrated as the one hundredth anniversary of the reservation by Congress of the area included in the park and the dedication of the use of its waters to the American public.

The Hot Springs National Park contains 1,016 acres and includes Hot Springs Mountain, North Mountain, Indian Mountain, West Mountain, Sugar Loaf Mountain and the Whittington Park, which is located in the city of Hot Springs. The area lies in the eastern part of the Ouachita Mountain region, which extends from Little Rock, Ark., westward to Atoka, Okla., a distance of 200 miles, and which, throughout the greater part of its extent, is between 50 and 60 miles wide. The hot springs are all grouped about the base of Hot Springs Mountain, their aggregate flow being approximately 1,000,000 gallons per day. This hot water is supplied to the various bathhouses, the receipts from this source being deposited in the United States Treasury.

The Hot Springs National Park is under the control and supervision of the Director of the National Park Service. The officer in immediate charge is the superintendent, Donald S. Libbey, whose post office address is Hot Springs, Ark. The park is open throughout the year.

The superintendent has charge of all general matters connected with the Government's interests, enforces the rules and regulations of the Department, supervises sanitation, hydrotheraphy, and the operation of bath-houses, has charge of the Government free bathhouse for the indigent, the instruction and supervision of bath attendants and the determination as to their fitness for employment, and the operation of the auto camp.

HOT SPRINGS—THE CITY

Administration of the national park by the Federal Government does not extend to the city of Hot Springs, which operates under its own municipal and State laws. Whenever the interests of the two join in promoting community welfare, the efforts of the two agencies are coordinated for the common good. In particular, the Government, through local officers of the United States Public Health Service, assists the city of Hot Springs in physical examinations, vaccinations, and matters of municipal and rural sanitation.

There is a resident population of 20,000 in the city proper, which is a typical modern American city, with churches of every denomination, public and private schools, civic clubs, fraternal organizations, and theaters.

CLIMATE AND RECREATION

Lying as it does within the region of the Ouachita Mountains, Hot Springs has a favorable climate the year around. The Ouachitas, to the south of the Arkansas River as it runs from west to east, parallel the Ozark Ranges lying to the north of the river. The altitude in the park area varies from 600 feet above sea level in the valleys to more than 1,200 feet along the summits.

The winters in Hot Springs are mild, permitting outdoor recreation in comfort except at infrequent intervals, while the summers are moderated by the elevation of the rugged hills, with their forests of fragrant pine and mixed hardwoods.

The average annual temperature data are as follows:

Average temperature	62.6 °F.
Average maximum temperature	74.5 °F.
Average minimum temperature	50.8 °F.
Average precipitation	53.29 inches

The beneficial effects of outdoor life in Hot Springs, with its pure atmosphere and sunshine, are considered important aids to the bath treatments.

As a resort, Hot Springs has a popular appeal throughout the year, offering numerous and varied attractions. The majority of persons from the more northerly States make their visits during the autumn, winter, and spring months, while most of the summer visitors come from the Gulf States and those immediately adjoining Arkansas.



THE EASTER SUNRISE SERVICE

Life in the open offers almost every form of diversion. The slopes and crests of the park are traversed by 12 miles of excellent roadways; and there are many more miles of forest trails, bridle paths, and footpaths, the last being well equipped with rest benches at popular viewpoints. Motoring, horseback riding, and tramping through the pine forests are popular diversions. The mountain roads adjacent to the park are numerous and lead through interesting Arkansas mountain-life settings. Numerous side trips to scenic places of interest and recreation require only a few hours' motor trip. Fireplaces and tables are available on Hot Springs Mountain near the observation tower for picnic parties.

Water sports of every sort have become available through the building of two large hydroelectric dams on the Ouachita River near Hot Springs. These projects have created Catherine and Hamilton Lakes, where many square miles of open water, enhanced by 320 miles of wooded shore line, provide for motorboating, sailing, canoeing, and fishing. Many streams are also accessible for fly fishing.

Excellent facilities for golf are found at the Hot Springs Golf and Country Club, where there are three complete 18-hole courses, including both grass and sand greens and tees. At Oaklawn Park there is a 9-hole course.

A popular way of enjoying the air and sunshine in leisurely fashion is the open-top, horse-drawn carriage, a custom at Hot Springs which has survived the motor age.

SPECIAL COMMUNITY ACTIVITIES

The church choirs, teachers and pupils of the Hot Springs schools, and talented singers in the community, each year render an impressive Easter



VISITORS ENJOY THE NOVELTY OF SEEING HOT SPRINGS
FROM THE HORSE-DRAWN CARRIAGE

Sunrise Service on Easter morning and a spectacular Christmas Carol Pageant on Christmas Eve. Many visitors from distant States come to attend these inspirational services.

HOT SPRINGS AS CONVENTION CENTER

Hot Springs offers peculiar advantages as a convention city, and this fact is being increasingly recognized by both local and national organizations. As a result of years of experience along this line, the efficient handling of conventions, from both a business and entertainment standpoint, is assured. One factor that appeals to convention managers is the fact that Hot Springs does not offer the counterattractions of a large city to lure delegates from attendance at business sessions.

The city of Hot Springs is centrally located and offers excellent accommodations, two important items in convention planning.

Specific information regarding convention facilities may be obtained from the Hot Springs Chamber of Commerce.

ACCOMMODATIONS

There are many hotels in Hot Springs, the largest affording accommodations for more than 1,000 guests and equaling in service and cuisine those of other well-known resorts and watering places in America and Europe. Among the larger hotels, visitors have a choice between those operating on the European plan and those on the American plan. Then there are several hundred boarding places, ranging in price from \$7 per week upward.

For those desiring permanent or light-housekeeping quarters there are many kitchenette and standard apartments and cottages, furnished and unfurnished, which may be rented at prices from \$20 per month up.

In all, Hot Springs will house comfortably 25,000 visitors at one time.

Lists of hotels, boarding houses, and other accommodations may be obtained from the Hot Springs Chamber of Commerce. Inquiries of a general nature, such as transportation routes, road maps, and recreation features which do not relate to the park administration, will be answered by the secretary of this organization.

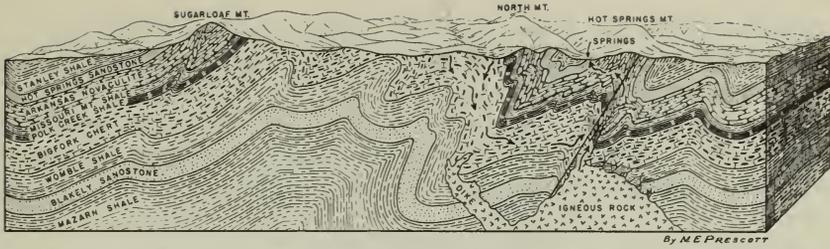
GEOLOGY

The Hot Springs National Park is located in the Zigzag Mountains and the Masarn Basin of the Ouachita Mountain section. The rock exposures in the park area represent sedimentary formations exclusively, although several small igneous dikes are found within the four sections of land included in the original reservation. These formations include chert, shales, sandstone, and the unusual formation called novaculite. The following formations, arranged from oldest to youngest, with their corresponding ages, are found in the park: Bigfork chert, Ordovician; Polk Creek shale, Ordovician; Missouri Mountain shale, Silurian; Arkansas novaculite, Devonian and Mississippian; Hot Springs sandstone, Pennsylvanian; and Stanton shale, Pennsylvanian.

These formations and the remainder of the underlying and overlying series of the region were deposited in horizontal layers on the floor of ancient seas over a period of millions of years. Originally sand, mud, and perhaps a colloidal silica, the sediments were consolidated into the rock formations. Intense pressure from the southeast during the latter part of the Paleozoic era folded the rocks of the area into wavelike mountain ridges. Along the lines of greatest strain, faults (breaks) developed; in some instances the rock mass on one side of a break was pushed over the rocks on the opposite side to form an overthrust fault. The intensity of the folding altered some of the shales to slates and some of the sandstone to quartzite. Erosion during millions of years wore away the mountains until the region was reduced to a low-level plain (peneplain). Renewed uplift and erosion resulted in the present mountains being carved from the uplifted peneplain which now is entirely gone, except for the patches composing the summits.

The 47 hot springs are located in a small area apparently along a fault line at the southwestern base of Hot Springs Mountain, near the contact of the Hot Springs sandstone and the Stanley shale. Tufa, a limy deposit or travertine, abounds in the springs area.

Although the exact mechanism responsible for the hot springs is not



BLOCK DIAGRAM OF THE AREA ABOUT HOT SPRINGS, ARK., SHOWING THE PROBABLE ORIGIN OF THE SPRINGS AND THE INFLUENCE OF THE ROCKS AND THEIR STRUCTURE ON THE UNDERGROUND ROUTE OF THE WATER

known, several theories have been advanced. Perhaps the most favored is the meteoric theory which supposes that the rain water which sinks into the Bigfork chert in the valley between West and Sugarloaf Mountains finally emerges in the hot springs. The rain water follows the slope of the chert downward under North Mountain to the southeastward, being confined between the impervious Womble shale below and the Polk Creek shale above. Somewhere on its downward path the water is believed to be heated either by passing close to a mass of hot rock or by absorbing heated gases rising from such a mass. Since the overlying Polk Creek and Missouri Mountain shale and Arkansas novaculite also are impervious, a hidden crack or fault must be the medium of escape for the heated waters from the chert to the porous Hot Springs sandstone at a higher level. Reaching this sandstone, the heated waters are confined to it until they reach the surface.

The weight (hydrostatic pressure) of the column of water confined in the rocks below the collecting area on the slopes of West and Sugarloaf Mountains supports an equal column of water below the hot springs. Since part of the supposed collecting basin is below the level of the springs, it is suggested that the hot waters rise the additional height because of expansion after being heated.

According to another theory, the hot springs water has never before been at the surface of the earth, but comes from heated rocks of the earth's interior. Such magmatic or juvenile water escapes from molten rock that is slowly cooling and rises to the surface due to differential pressure.

Other sources of heat have been postulated to explain the temperature of the water, among which are the following: (1) Heat from chemical reactions taking place near the water somewhere during its underground course; (2) heat extracted from rocks, the temperature of which has been increased from friction between masses of rock sliding along one another during periods of folding and faulting; (3) heat of compression due to overlying burden of rocks; (4) heat from radioactive minerals.

Whatever the source of the water and its heat, the springs continue to have a constant daily flow of almost a million gallons of water that has a constant temperature of more than 145° F.

A more detailed discussion of the geology may be obtained from the paper by Kirk Bryan, The Hot Water Supply of the Hot Springs, Ark. (Jour. Geol., vol. XXX, no. 6, Sept.-Oct. 1922, pp. 425-449).

PLANT AND ANIMAL LIFE

The plants found in Hot Springs National Park are representative of the flora of the Ouachita Mountain province. The thin mantle of soil covering the extremely rocky hills and valleys, aided by favorable temperatures and an annual rainfall of about 55 inches, maintains an unusually large variety of plant life.

Forests of approximately equal numbers of pine and deciduous trees cover the steep and rocky mountain ridges of the park. Besides the southern short-leaved yellow pine, a few scattered junipers (cedar) are the only native conifers. The principal deciduous trees are oaks, hickories, and elms, which are supplemented by a smaller number of such species as hackberry, wild cherry, sweet gum, black gum, sycamore, redbud, redhaw, and dogwood. A thick understory of shrubs, including huckleberries, New Jersey tea, and blackberries, covers the forest floor. Many of these trees



Werner photo

ALL SPRINGS ARE CLOSED, EXCEPT ONE WHICH IS OPEN FOR DISPLAY

add the beauty and fragrance of their flowers of many hues to the prevailing green of their foliage. Worthy of particular mention is the gorgeous display of brilliantly colored leaves every fall.

The more common spring flowers include violets, toothwort, streptanthus, bluets, rue anemone, spring beauty, spiderwort, wild hyacinth, blue larkspur, verbena, phlox, and pentstemon. In the summer months wild sunflowers, coreopsis, partridge pea, blazing stars, milkweed, pale and purple cone flowers, skullcap, bitterweed, and black-eyed susan are among the most noticeable flowers. Goldenrod, aster, blazing star, foxglove, golden aster, ironweed, and great blue sage are the principal fall blooming plants.

Along the cool, moist banks of springs and streams one usually finds a luxuriant growth of mosses, ferns, and other forms of the nonflowering group of plants. The bare stones become covered with thallophytic lichens. Where some organic matter has accumulated, mosses of different kinds form a thick soft matting on the ground. The graceful fronds of ferns of many species add considerable beauty to these places. Closely associated with these nonflowering plants is the evergreen partridgeberry, whose recumbent vines are decorated throughout the winter with brilliant red twin berries.

Because of the limited area of the park and its proximity to the commercial and residential communities, only a few common mammals have been recorded in the park.

The local reptile list includes several genera of lizards and snakes. Most interesting of all the lizards is the American chameleon, which has the unusual faculty of changing its color to either brown or green. Local snakes are chiefly of harmless species, although the poisonous copperhead, rattlesnake, and cotton-mouth moccasin do occur here.

A mild climate and a wide variety of seeds, berries, and other wild fruit sustain a bird population including over 90 observed species within the park.

PARK INTERPRETATION SERVICES

A modern museum is housed in the Administration Building at the corner of Central and Reserve Avenues, including displays depicting geologic history; mechanism of the hot springs; rocks, minerals, and fossils; prehistoric culture; early and recent history; development of bathing; interesting plants and animals; and scientific studies of the hot waters.

Self-guided nature trails, with interesting trees, rock exposures, and other natural features labeled at the wayside, are maintained for hikers and nature lovers. Seasonally, illustrated lectures upon a variety of subjects pertaining to Hot Springs and other national parks are offered, free of charge, to the public.

THE CHARACTER AND ACTION OF THE WATERS

Chemical analyses of 47 hot springs have shown the waters to be practically identical in chemical composition. The waters from all these springs are impounded in reservoirs and all bathhouses receive exactly the same water. The water temperature in the central collecting basin is always over 140° F.

The following analysis represents the approximate chemical composition of the hot water used:

Approximate chemical composition of the 'Hot Springs waters

[Parts per million]

Silica (SiO ₂)	45
Iron (Fe)	.05
Manganese (Mn)	.26
Calcium (Ca)	46
Magnesium (Mg)	5.8
Sodium (Na)	5.1
Potassium (K)	1.6
Bicarbonate (HCO ₃)	165
Sulphate (SO ₄)	9.1
Chlorine (Cl)	2.1
Fluoride (F)	0
Nitrate (NO ₃)	0
Total dissolved solids	197

Gases in cubic centimeters per liter at 0° C. and 760 millimeters pressure: nitrogen (N), 8.8; oxygen (O), 3.8; free carbon dioxide (CO₂), 6.9; hydrogen sulphide (H₂S), none. Radioactivity, 0.45 millimicrocurie per liter.

The water from the hot springs is generally considered to have definite favorable therapeutic effects. It is used exclusively in the bathhouses at Hot Springs National Park with satisfactory results in the approved methods of modern water treatment. This includes full and partial immersion baths of different types, and also by means of vapor cabinets, in the equivalent of the well-known Russian baths. This form of treatment promotes vigorous perspiration, calling for simultaneous drinking of large quantities of the water. What might be called a "washing out of the system" is thus attained with breaking down of fatty tissues. This form of treatment is therefore of service where increased elimination is desired, as in obesity, chronic rheumatism, and mild Bright's disease, in connection with such other treatment as diet and medication. The vapor bath calls for careful supervision by a competent attendant and can be used only to a limited extent without a physician's directions. It is usually concluded with a graduated shower.

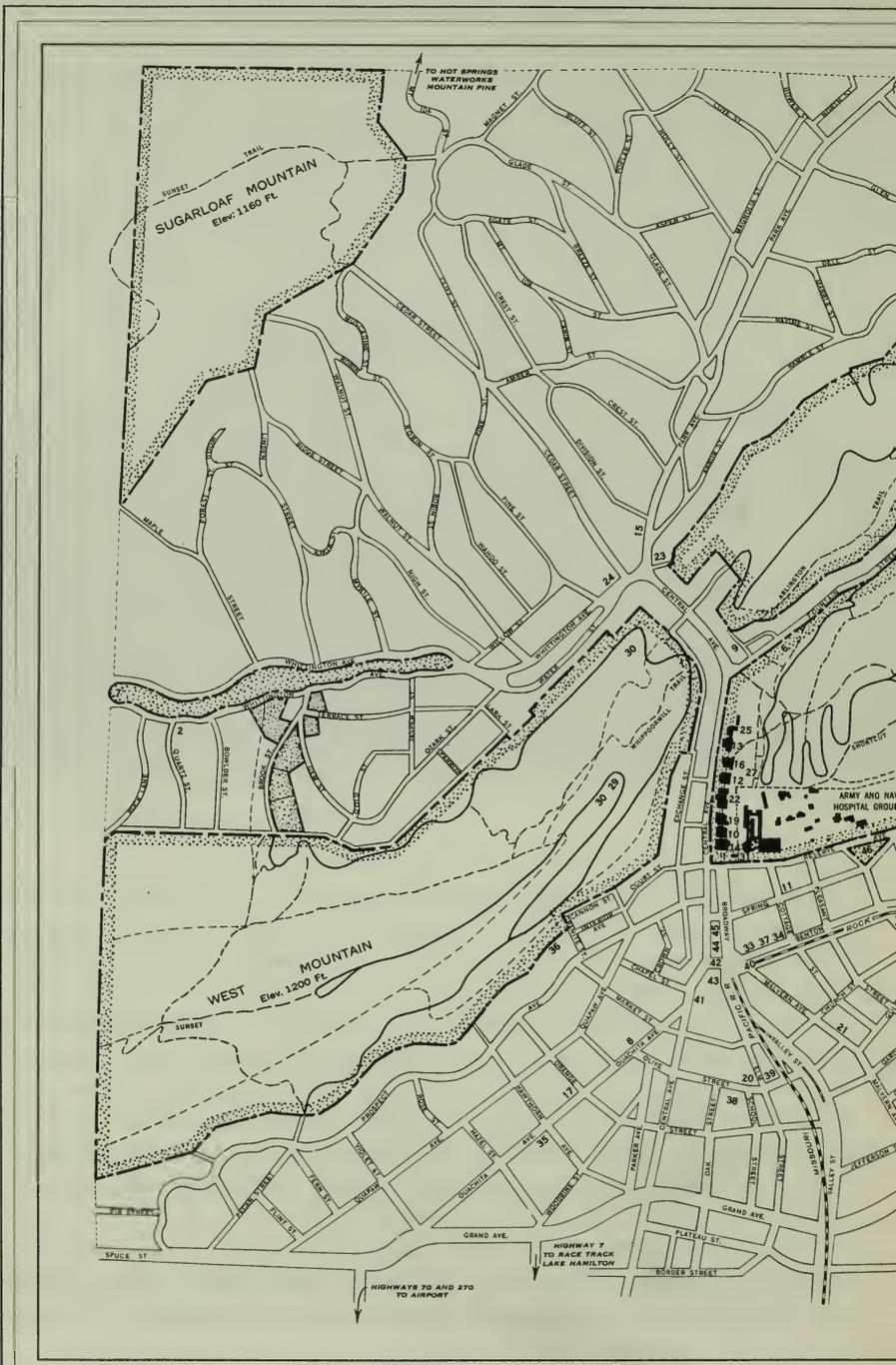


Verner photo

POOL FOR MUSCULAR REEDUCATION

The full immersion bath is used in several forms. The customary bath is a neutral bath for about 15 minutes. The bather is advised to drink freely of hot water during the bath, and a free perspiration results. While submerged, the bather is given a vigorous massage by the attendant. The attendant also rubs the bather down with a fiber mitt and concludes the bath with a short graduated shower. The bather, while reclining in a cooling room, then enjoys a rest period. This bath, in addition to the usual eliminative effect, is followed by relaxation and a sedative effect. It is the form of bath customarily taken by visitors to the park who desire relaxation or seek recuperation and may be taken without a physician's directions. It is sometimes referred to as the "standard bath."

Partial immersion baths at Hot Springs National Park are often prescribed. Various bathhouses are equipped to give the sitz bath, leg bath, and hand-and-arm bath given by properly trained attendants.



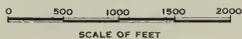
MAP OF HOT SPRINGS NATIONAL PARK AND PORTION OF CITY SHOWING LOCATI



LEGEND

- ROADS
- - - TRAILS
- ▬▬▬ PARK BOUNDARIES
- ▬▬▬ RAILROADS

1. Administration Building and Museum
2. Park Service Utility Buildings
3. U. S. Gov't Free Campgrounds
4. U. S. Gov't Public Swimming Pool
5. Superintendent's Residence
6. Ass't Superintendent's Residence
7. Foraman's Residence
8. Alhambra Bath House
9. Arlington Hotel Bath House
10. Buckstaff Bath House
11. Eastman Hotel Bath House
12. Fordyce Bath House
13. Hale Bath House
14. La Mar Bath House
15. Majestic Hotel Bath House
16. Maurice Bath House
17. Moody Hotel Bath House
18. Observation Tower
19. Ozark Bath House
20. Ozark Sanitarium Bath House
21. Pythian Bath House (colored)
22. Quappaw Bath House
23. Rockafellow Hotel Bath House
24. St. Joseph's Infirmary Bath House
25. Superior Bath House
26. Novaculite Quarnes
27. Open Hot Springs
28. Iron Spring
29. Comfort Station
30. Shelter
31. Army and Navy General Hospital
32. Hot Springs Transient Medical Center
33. U. S. Forest Service
33. U. S. Post Office
34. City Hall and Auditorium
35. Garland County Court House
36. Lavi Hospital
37. Chamber of Commerce
38. Public Schools
 - a. High School
 - b. Junior High School
 - c. Oak St. Grads School
39. Mo. Pacific R. R. Station
40. Rock Island R. R. Station
41. Arkansas Motor Coaches Depot
42. Dixie Motor Coach Depot
42. Mo. Pacific Bus Depot
43. Tri-State Transit Co.
44. Westarm Union Office
45. Postal Telegraph Office
46. U. S. Gov't Free Bath House
46. U. S. Public Health Service Clinic



BATHHOUSES AND PUBLIC BUILDINGS

Besides the different forms of baths, showers, sprays, and douches are given by means of modern apparatus and following the directions of the bather's physician. Douches, using a single or multiple column of water at any specified temperature, directed against the desired part of the patient's body, attain the effect of almost any form of hydrotherapy. There are also probable beneficial effects from inhaling the vaporous emanations from the mineral water.

In conjunction with each of these types of treatment, drinking the hot water is considered a great aid to whatever other treatment is being given. Several fountains at convenient locations in the park furnish free hot water direct from the springs.

Aside from the beneficial effects of internal use of the water, the hot water applied in the many methods of modern hydrotherapy is considered effective in the various conditions in which increased elimination, increase in the normal building up and breaking down of body tissue (metabolism), and increase in bodily resistance to poisons of bacterial origin (immunity) is desired. Conditions favored by decrease in abnormally high blood pressure are favorably influenced and liability to unfavorable results from high blood pressure such as sudden small hemorrhages into important tissues is believed to be lessened.

Increase in metabolism, highly desirable in many chronic conditions, is probably indicated in higher temperature of persons immersed in the Hot Springs water. Additional tissue change is made evident in desirable greater elimination. Excretory waste of this origin may be readily calculated from time to time by urinary analysis by the patient's physician.

Increase in bodily resistance in bathers availing themselves of the Hot Springs water has long been noted in the improved general health, strength, and vitality in persons in a run-down or debilitated condition, in all probability due to absorption of poisons of bacterial origin from locations of bacterial activity, such as apices of apparently sound teeth, from infected tonsils often incompletely removed, and from undesirable bacterial growth caused in the intestine by constant swallowing of bacteria from bad teeth, diseased tonsil, or infected nasal sinuses.

The chronic joint troubles (arthritis) so often seen in these cases of slow absorption of poisons of bacterial origin almost invariably improve. The decrease in pain and stiffness in the affected joints is often most gratifying. It should be added that where persistent absorption of poisons from the intestine is suspected as a cause of debility, high blood pressure, or arthritis, proper intestinal treatment should accompany the course of baths. A thermic hydrotherapeutic pool for appropriate exercises and physiotherapy for patients submerged in the water at a suitable temperature permit a more

complete treatment for extreme joint and muscular ailments for both adults and children.

The thermic physiotherapy pool is in no sense a swimming pool or a recreational feature. It is used primarily for muscle reeducation in cases of paralysis. The buoyant effect of the water enables the patient to exercise and hence develop muscles impossible to use when not submerged. These voluntary or resistive movements are much more effective in muscle reeducation and development than are passive or assistive movements given them by a physiotherapist when the part is not submerged. This treatment is materially aided by the readily regulated temperature of the water of Hot Springs, which is of distinct benefit in cases where pain or spasm of a joint exists, and it removes fear and apprehension on the part of the patient. Caution is taken to prevent overwork or fatigue, a result often following submerged exercises. Qualified physical therapists only give these treatments.

Not only has the recreational or play factor no place in this form of physiotherapy, but it is actually discouraged, inasmuch as such exercises as recreational swimming tend to develop unaffected muscles at the expense of those paralyzed, and hence tend to increase the very deformity which it is desired to correct.

This form of therapy is particularly used in various paralyzes following anterior poliomyelitis (infantile paralysis) and other nerve lesions leading to weakening and nonuse of muscles still capable of development.

A second class of cases successfully treated in the thermic hydrotherapeutic pool is that comprised under the term "arthritis of joints." The stiffness, pain, and spasm common in these joints are greatly reduced when the patient is submerged in the warm, spring water of the pool. Motions of wide range, painful and often impossible when attempted under ordinary conditions, may be given by the physiotherapist in the pool.

It is often the case that persons come to Hot Springs suffering from absorption from bacterial poisons who are quite properly taking a course of injections of scientifically prepared vaccines. These cases can continue their injections with added advantage during the baths, the injections being given by local physicians according to instructions from the patient's home physician. Vaccines operate particularly well when the element of resistance to bacterial poisons is increased in the blood. The amount of this resistant element (complement) is believed to be materially increased by properly and carefully given baths in the Hot Springs water.

Although extended observations have not been completed, the baths are believed with appropriate medical therapeutics favorably to influence the condition of the blood. This would explain the gratifying results of the



RELAXING IN THE SUN ON BATHHOUSE ROOF

baths often noted in certain forms of anemia, particularly those following malaria.

It should be emphasized that in acute diseases, fevers, lung tuberculosis, cancer, and similar diseases with marked breaking down of tissue, the baths are distinctly contraindicated and can do more harm than good. On the other hand, experience indicates that while taking the baths and drinking the water dosage of medicines may be materially increased.

PHYSICIANS

While the baths may be taken without the advice of a physician by procuring a permit at any of the bathhouses receiving water from the hot springs in the park, this practice is not recommended. Patients who assume to determine the nature of their ailments and to prescribe for themselves often fail to obtain the desired relief. The waters are not beneficial in all diseases and in some are harmful. In many ailments the baths will not afford material benefit unless taken in connection with proper medicines prescribed by physicians. It is a useless expenditure of time and money to take the baths for a disease that will not be benefited by them.

The only physicians allowed to prescribe the waters of the hot springs are those licensed practitioners of the State of Arkansas who have been examined by a Federal board of medical examiners appointed by the Secretary of the Interior. Visitors are warned that physicians who have not passed the Federal board and been registered in the office of the superintendent are not permitted to make use of the baths in the treatment of their patients. This rule is for the protection of visitors who, if they desire the baths, should secure a copy of the registered list of qualified practitioners at the Information Desk in the Park Administration Building before employing a physician.

Physicians' fees for examination for the baths are from \$5 to \$10.

Visitors are advised that soliciting for hotels, boarding houses, or doctors on the trains and busses running into Hot Springs is in violation of law, and are warned against heeding the advice of irresponsible and unknown persons.

In the interest of the public it has been found necessary to prohibit the bathing of anyone stopping at a hotel or boarding house in which the solicitation of patronage for doctors (commonly known as "doctor drumming") is allowed. The moral responsibility of good citizenship demands that visitors should make known to the superintendent of the park any instance of soliciting for doctors, thus effectively aiding the Service in eliminating an obnoxious practice and insuring to themselves the full benefits of proper treatment at this resort.

THE PAY BATHHOUSES

There are 17 pay bathhouses operated under rules and regulations approved by the Secretary of the Interior. Eight are in the park at the base of Hot Springs Mountain and nine are located at various points in the city. The water is the same in all, but the prices charged for the baths vary according to the equipment and accommodations furnished. The rates are fixed in each instance by the Secretary of the Interior. The charges for the services of the attendants are the same in all, and include all the necessities of the baths except towels, mitts, blankets, and bath robes, laundering bath robes and blankets, and handling helpless invalids.

Bath tickets are redeemable according to the redemption scale for baths fixed by the Department, a copy of which is posted in each bathhouse.

Any dissatisfaction relative to administration of the baths or treatment of patients should be brought to the attention of the park superintendent. The charge for bath attendant service is included in the bath price.

*Scale of rates for different bathhouses receiving water from the Hot Springs
National Park*

[Including fee of bath attendant, \$0.20 for single bath and \$4 for a course of 21 baths]

Bathhouse	Single bath	5 baths	10 baths	21 baths
Arlington	\$1.40	\$6.60	\$12.60	\$24.00
Fordyce	1.25	5.85	11.10	21.00
Buckstaff	1.25	5.85	11.10	21.00
Eastman	1.25	5.85	11.10	21.00
Maurice	1.25	5.85	11.10	21.00
Lamar	1.20	5.60	10.60	20.00
Majestic	1.20	5.60	10.60	20.00
Quapaw	1.20	5.60	10.60	20.00
Hale	1.15	5.35	10.10	19.00
Moody	1.15	5.35	10.10	19.00
Ozark	1.15	5.35	10.10	19.00
St. Joseph's Infirmary	1.15	5.35	10.10	19.00
Superior	1.15	5.35	10.10	19.00
Ozark Sanatorium	1.10	5.10	9.60	18.00
Rockafellow	1.10	5.10	9.60	18.00
Alhambra	1.05	4.85	9.10	17.00
Pythian (colored)	1.00	4.60	8.60	16.00

Pool rates

[All pool treatment requires a physician's prescription]

Single treatment with services of physiotherapist	\$2.25
Course of 10 treatments with services of physiotherapist	21.00
Course of 20 treatments with services of physiotherapist	35.00

Rates for massage

[The maximum charges for general massage, including all necessary accessories, at all bathhouses]

21 treatments	\$30.00
10 treatments	14.75
5 treatments	8.00
Single treatments	2.00

THE GOVERNMENT FREE BATHS

The Government free bathhouse for the indigent was established pursuant to act of Congress of December 16, 1878.

The act of June 26, 1936, provides that an applicant for free baths shall be required to make oath that he is without and unable to obtain means to pay for baths, and a false oath as to his financial condition makes him guilty of a misdemeanor and subjects him, upon conviction thereof, to a fine of not



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“AT HOME” IN THE TRAILER CAMP

less than \$25 or more than \$300, or 60 days' imprisonment. The law reads as follows:

ACT OF JUNE 26, 1936 (PUBLIC, NO. 828, 74TH CONG.)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the act entitled “An act limiting the privileges of the Government free bathhouse on the public reservation at Hot Springs, Ark., to persons who are without and unable to obtain the means to pay for baths,” approved March 2, 1911 (U. S. C., 1934 edition, title 16, sec. 371), is hereby amended to read as follows:

“That only persons who are without and unable to obtain the means to pay for baths and are suffering from ailments for which bathing in the water of the Hot Springs Reservation will afford relief or effect a cure shall be permitted to bathe at the free bathhouse on the public reservation at Hot Springs, Ark., and before any person shall be permitted to bathe at the free bathhouse on the reservation he shall be required to make oath, before such officer duly authorized to administer oaths for general purposes as the superintendent of the Hot Springs Reservation shall designate, that he is without and unable to obtain the means to pay for baths, and any person desiring to bathe at the free bathhouse on the Hot Springs Reservation making a false oath as to his financial condition shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined not less than \$25 nor more than \$300 and be imprisoned for not more than sixty days.”

Tickets are issued only to those who, after examination, are found to be suffering from diseases that may reasonably be expected to be benefited by the baths. Children are not allowed in the bathhouse unless they themselves are patients.

The Government free bathhouse is a modern concrete building fully equipped for bathing large numbers of people under sanitary conditions. In connection with the bathhouse the United States Public Health Service, with the cooperation of the National Park Service, is operating a clinic for the examination and treatment of indigents taking the free baths.

All applicants for free baths and treatment for disease must be prepared to provide and pay for their own board and lodging and have return railroad fare. There are no hospitals in the city of Hot Springs to which patients can be admitted free of charge, nor any funds available from which relief can be afforded or railroad transportation furnished.

This statement appears to be necessary, as many destitute invalids come each year from other and distant States in the belief that the Government maintains a public institution at which they will be cared for free of charge.



ARMY AND NAVY GENERAL HOSPITAL

Werner pl

THE ARMY AND NAVY GENERAL HOSPITAL

The Army and Navy General Hospital is also supplied with water from the springs. It is administered by the War Department for the benefit of officers and enlisted men of the military and naval service of the United States, cadets at the United States Military and Naval Academies, officers of the Revenue Cutter Service, now forming part of the Coast Guard, officers of the Public Health Service, and honorably discharged soldiers and sailors of the Regular and Volunteer Army and Navy of the United States, who are suffering from such diseases as the waters of the hot springs of Arkansas have an established reputation in benefiting.

Admission to this hospital of all such cases regardless of their severity is, however, not contemplated. Its facilities will not be extended to mild and transient cases which should yield to ordinary treatment, but are reserved for those of a serious and obstinate character.

In the case of veterans whose service was rendered since 1897, application for admission to this institution should be made to the Veterans' Administration, Washington, D. C., or to a district office of the Administration. The nearest district office to the hospital is at Little Rock, Ark. In all other



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SCENIC ROAD ON WEST MOUNTAIN

cases applications should be submitted to the Surgeon General, United States Army, Washington, D. C. No local applications can be considered.

FREE PUBLIC CAMPGROUND

For automobile tourists, the Government operates a modern tourist camp in the Gorge, a beautiful valley at the foot of the eastern slope of Hot Springs Mountain. Fireplaces and tables are available for picnic use. A large swimming pool fed by fresh running water is located in the heart of the campsite, with dressing rooms available for both men and women. The camp is 2 miles distant from the center of the city of Hot Springs. Rules and regulations pertaining to use of the campgrounds are contained on page 31.

HOW TO REACH PARK

BY RAILROAD

Hot Springs is served by the Missouri Pacific Railroad and Chicago, Rock Island & Pacific Railway. Through sleeping cars are operated daily by the Missouri Pacific between Memphis, New Orleans, St. Louis, Omaha, Kansas City, and Hot Springs; and between Chicago and Hot Springs via the Chicago & Alton Railroad and Wabash Railway north of St. Louis, connecting with the Missouri Pacific going south. Through sleeping cars are operated daily between Chicago, Memphis, and Hot Springs via the Illinois Central Railroad and Chicago, Rock Island & Pacific Railway.

Passengers en route to other destinations will find stop-over privileges available on both one-way and round-trip tickets for the purpose of making side trips to Hot Springs.

BY AUTOMOBILE

Hot Springs is located on two transcontinental motor highways, the "Broadway of America" and the Lee Highway, as well as on United States Highways Nos. 67, 70, and 270, which are all-year, hard-surfaced roads. In addition, the extensive road-building program conducted by the State government has provided many hard-surfaced roads throughout Arkansas, some of which afford unusual scenic attractions, and all of which connect with the main arteries of interstate highway travel.

BY BUS

The Arkansas & Dixie Motor Coaches, Missouri Pacific Transportation Co., Santa Fe Trail System, and Tri-State Transit Co., with their connections, provide bus service to Hot Springs. During the summer months low round trip fares to the park are in effect from practically all points in the



FISHING IN ADJACENT OUACHITA RIVER

United States and Canada. In addition, convenient side trips and stopover privileges may be arranged on bus tickets to or via most points in Arkansas, allowing passengers to include a side trip to the park.

BY AIRPLANE

American Airlines, with its connecting services to all points of the United States and its through service from New York, Buffalo, Boston, Cleveland, and Chicago to Los Angeles, has Little Rock, Ark., as a regular stop.

The Hot Springs Chamber of Commerce owns and maintains a conveniently located airport where ships of any type may land and take off and be serviced.

INTERESTING PLACES ON THE WAY TO HOT SPRINGS

FROM the East through the Memphis gateway along U S 70, known as the "Broadway of America" route, one traverses mile after mile of fertile cotton land. The White River, noted for its pearl fishing, is crossed at DeValls Bluff. Between Hazen and Lonoke are great rice-growing areas. The world's largest fish hatchery is at Lonoke. The State capitol building in Little Rock is worth several visits, and Benton is noted for its pottery plant. Seven miles from Benton on another highway are bauxite mines from which more than 90 percent of the world's supply of aluminum is made.

Fort Smith, thriving industrial center and northwestern gateway to Hot Springs, is on U S 64. From the north U S 71 also leads to Fort Smith, after passing through the famous apple country. Fayetteville, home of the University of Arkansas, is on this route. Between Fayetteville and Fort Smith the road follows the skyline route of the Ozarks. On U S 64 from Fort Smith there are four college towns: Clarksville, Russellville, Morrilton, and Conway. On U S 71 and on U S 270 (taken after leaving No. 71) one travels for miles through the thickly wooded Ouachita National Forest and the rugged Ouachita Mountains.

Texarkana, on U S 67, a bustling railroad center on the Arkansas-Texas line, is the southwestern gateway to Hot Springs. To the north is interesting river country famous for its cotton plantations and colorful Negro life, and bayous and streams, many of which are inhabited by alligators. From Arkadelphia, home of Ouachita and Henderson Colleges, State Highway No. 7 leads to Hot Springs. A few miles south of the park Lake Hamilton is crossed.

Another interesting town of this region is Pine Bluff, a cotton center 72 miles southeast of Hot Springs, and Malvern, home of large textile interests, 22 miles distant on State Highway No. 6.

REFERENCES

- ALLSOPP, F. W. Folklore of Romantic Arkansas, volumes I and II; the Grolier Society, Kansas City, 1931.
- ARKANSAS HISTORICAL ASSOCIATION. Volumes I, II, III, and IV; Democrat Printing Co., Little Rock, Ark.
- ARKANSAS TRAVELER'S SONGSTER. Dick & Fitzgerald, New York, 1864.
- ARKANSAS HANDBOOK. Archives of History.
- ARKANSAS SKETCHBOOK (1919). Archives of History.
- BABCOCK, BERNIE. Yesterday and Today in Arkansas, 1917.
- BIEDMA'S EXPEDITION OF HERNANDO DE SOTO.
- DUNBAR'S REPORT OF EXPLORATION ON THE WASHITA.
- FEATHERSTONHAUGH. Excursion Through the Slave States; Murray, London, 1844.
- HALLUM, JOHN. Biographical and Pictorial History of Arkansas; Lonoke, Ark., 1887.
- HARPER AND MCBRIEN. Story of Arkansas; the Grolier Society, Kansas City, 1931.
- HEMPSTEAD, FAY. Pictorial History of Arkansas; M. D. Thompson, St. Louis and New York, 1890.
- HERNDON, DALLAS T. Centennial History of Arkansas, volumes I, II, and III; the S. J. Clarke Publishing Co., Chicago, 1922.
- HERNDON, DALLAS T. High Lights of Arkansas History.
- HODGE, F. W., and LEWIS, H. T. Spanish Explorers in the Southern United States.
- JONES, RALPH B. Resources and Industries of Arkansas, the Wonder State (supplement to Human Geography, book II). J. Russell Smith.
- PARRISH, RANDALL. Life of Mr. Garland of Arkansas.
- POPE'S EARLY DAYS IN ARKANSAS.
- SCHLUNDT, HERMAN. Radioactivity of the Spring Water on the Hot Springs Reservation. Amer. Journal of Science. Vol. xxx. July 1935.
- SMITHEE, J. M. Arkansas in 1875; Woodruff, Little Rock, Ark.
- THOMAS, DAVID Y. Arkansas and Its People (4 volumes); American Historical Society, New York.
- WASHBURN, CEPHAS. Reminiscences of the Indians with Biography of Washburn; Rev. J. W. Moore, of Little Rock, Ark.
- WILMER, LAMBERT. The Life, Travels, and Adventures of Ferdinand de Soto, Discoverer of the Mississippi; Lloyd, Philadelphia, 1859.

NATIONAL PARKS IN BRIEF

- ABRAHAM LINCOLN, KY.—Birthplace of Abraham Lincoln. Established 1916; 0.17 square mile.
- ACADIA, MAINE.—Combination of mountain and seacoast scenery. Established 1919; 26.01 square miles.
- BRYCE CANYON, UTAH.—Canyons filled with exquisitely colored pinnacles. Established 1928; 56.23 square miles.
- CARLSBAD CAVERNS, N. MEX.—Beautifully decorated limestone caverns. Established 1930; 15.75 square miles.
- CRATER LAKE, OREG.—Beautiful lake in crater of extinct volcano. Established 1902; 250.52 square miles.
- FORT McHENRY, MD.—Its defense in 1814 inspired writing of Star Spangled Banner. Established 1925; 0.07 square mile.
- GENERAL GRANT, CALIF.—General Grant Tree and grove of Big Trees. Established 1890; 3.98 square miles.
- GLACIER, MONT.—Unsurpassed alpine scenery; 200 lakes; 60 glaciers. Established 1910; 1,537.98 square miles.
- GRAND CANYON, ARIZ.—World's greatest example of erosion. Established 1919; 1,008 square miles.
- GRAND TETON, WYO.—Most spectacular portion of Teton Mountains. Established 1929; 150 square miles.
- GREAT SMOKY MOUNTAINS, N. C.-TENN.—Massive mountain uplift; magnificent forests. Established for protection 1930; 683.75 square miles.
- HAWAII: ISLANDS OF HAWAII AND MAUI.—Interesting volcanic areas. Established 1916; 248.54 square miles.
- HOT SPRINGS, ARK.—Forty-seven hot springs reserved by the Federal Government in 1832 to prevent exploitation of waters. Made national park in 1921; 1.54 square miles.
- LASSEN VOLCANIC, CALIF.—Only recently active volcano in United States proper. Established 1916; 163.48 square miles.
- MAMMOTH CAVE, KY.—Interesting caverns, including spectacular onyx cave formation. Established for protection 1936; 60.20 square miles.
- MESA VERDE, COLO.—Most notable cliff dwellings in United States. Established 1906; 80.21 square miles.
- MOUNT MCKINLEY, ALASKA.—Highest mountain in North America. Established 1917; 3,030.46 square miles.
- MOUNT RAINIER, WASH.—Largest accessible single-peak glacier system. Established 1899; 377.78 square miles.
- OLYMPIC, WASH.—Forests of unusual density; rare Roosevelt elk. Established 1938; 1,012.5 square miles.
- PLATT, OKLA.—Mineral springs. Established 1906; 1.32 square miles.
- ROCKY MOUNTAIN, COLO.—Peaks from 11,000 to 14,255 feet in heart of Rockies. Established 1915; 405.33 square miles.
- SEQUOIA, CALIF.—Outstanding groves of Sequoia gigantea. Established 1890; 604 square miles.
- SHENANDOAH, VA.—Outstanding scenic area in Blue Ridge. Established 1935; 282.14 square miles.
- WIND CAVE, S. DAK.—Beautiful cavern of peculiar formations. Established 1903; 19.75 square miles.
- YELLOWSTONE, WYO.-MONT.-IDAHO.—World's greatest geyser area, and an outstanding game preserve. Established 1872; 3,471.51 square miles.
- YOSEMITE, CALIF.—Valley of world-famous beauty; spectacular waterfalls; magnificent High Sierra country. Established 1890; 1,176.41 square miles.
- ZION, UTAH.—Zion Canyon, 1,500 to 2,500 feet deep. Spectacular coloring. Established 1919; 138.04 square miles.

RULES AND REGULATIONS

[Briefed]

HOT SPRINGS NATIONAL PARK has been under Government control as a reservation or a park since 1832, and its present well-kept condition has been made possible through the cooperation of our visitors. It is felt that this cooperation will continue and the National Park Service will be able to plan for the comfort and convenience of an increasing number of visitors. To that end the rules and regulations are given in brief as follows:

Preservation of natural features.—Destruction, injury, defacement, or disturbance in any way of public buildings, signs, trees, flowers, shrubbery, rocks, animal or bird life is prohibited.

Fires.—Fires are one of the greatest perils to the park's existence. They are not permitted to be kindled anywhere but in designated sites. Extreme care should be taken that all cigarettes or cigars have been completely extinguished before they are thrown out at the side of roads or trails.

Hunting.—No hunting whatever is permitted within the park boundaries.

Private operations.—To solicit or sell anything, no matter how minor, except by persons holding contract with the United States, is prohibited. The excepted activities are those restricted to the bathhouses and the Hot Springs Mountain Observatory.

Advertising.—No advertising or distribution of placards or advertising matter is permitted in the park.

Automobiles and motorcycles.—All the roads are of mountain type, and care should be taken at all times while driving through the park area. There is no need of high speeds, as the park roads are altogether recreational in character. Muffler cut-outs must always be closed. Speed of motor vehicles in campground must not exceed 15 miles an hour.

Horses and horse-drawn vehicles.—Horses have the right-of-way at all times and must be given the inside of roads when they desire it. Drivers of automobiles and motorcycles should be careful not to frighten horses.

Camping.—Visitors using the free public campgrounds on Gorge Creek must first register in the office of the caretaker and obtain permit for campsite. Automobiles and trailers must be placed in assigned areas and not moved to other sites without permission of caretaker. Camping by each party is limited to 30-day period. No structure of poles, lumber, or sheet metal may be erected. Campgrounds must be kept clean and sanitary, and are closed between the hours of 10 p. m. and 5 a. m. The swimming pool is available between sunrise and sunset.

Park rangers are always in uniform and are glad to answer inquiries at all times.

