

# *Hot Springs*

**NATIONAL PARK • ARKANSAS**

# HOT SPRINGS *National Park*

ARKANSAS

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UNITED STATES DEPARTMENT OF  
THE INTERIOR · Harold L. Ickes, Secretary  
NATIONAL PARK SERVICE · Arno B. Cammerer, Director

# The

HOT SPRINGS of Arkansas, 47 in number, and the only Government-owned and operated hot springs in the United States, are included in the Hot Springs National Park, 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 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 1,009 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, hydrotherapy, and the operation of bathhouses, 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 town, 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.



NEW ADMINISTRATION BUILDING

As a result, while the winters in Hot Springs are mild, permitting outdoor recreation in comfort except at infrequent intervals, the summers are generally free from excessive humidity, with temperatures moderated by the rugged hills and surrounding forests of fragrant pine. Persons remaining in Hot Springs beyond the first of April should have their summer clothing, as the average temperature is from 65° to 85°.

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. In recent years the number of baths given has averaged over 600,000. 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.



VARIOUS WAYS OF ENJOYING PURE AIR AND SUNSHINE  
AT HOT SPRINGS

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.

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.



THE EASTER SUNRISE SERVICE

One of the most popular ways of taking 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 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. Another important factor is the local auditorium with stage and balcony, which is peculiarly adapted to convention assemblies.

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 Stanley 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 of the present mountains.

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



FISHING IN ADJACENT OUACHITA RIVER

the Hot Springs sandstone and the Stanley shale. The springs area contains a limy deposit called travertine, to which the waters are constantly adding more material.

Although the exact mechanism responsible for the hot springs is not 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 shale, 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.

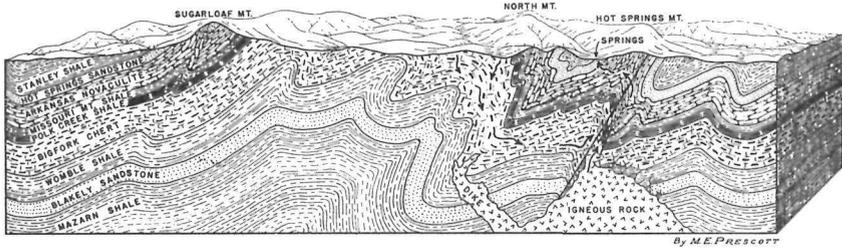
The weight (hydrostatic pressure) of the column of water confined in the rocks below the collecting area on the slopes of West and Sugarloaf Mountains supports an equal column of water below the hot springs. Since part of the supposed collecting basin is below the level of the springs it is suggested 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.)



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

### PLANT AND ANIMAL LIFE

The plants found in Hot Springs National Park are representative of the flora of the Ouachita Mountain Province and are perhaps more abundant here than in most parts of this physiographic unit because of a greater rainfall. 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. Individuals of the local flora, and also fauna, belong to the Carolinian and Austroriparian life zones, most species apparently coming in from the highlands to the north, but a considerable number coming from the southern lowlands.

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, redbaw, and dogwood. A thick understory of shrubs, including huckleberries, New Jersey tea, and blackberries, covers the forest floor. Many of these trees 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. Chiefly the elms, sweet gum, black gum, hickory, oaks, sassafras, dogwood, and huckleberry produce spectacular scenery by combining their many shades of red, yellow, orange, and purple. Along the narrow stream valleys there occur such trees as the alder, sycamore, willow, and ironwood.

One may find a great number of herbs, a few species of which brighten the landscape with the brilliant color of their flowers in every month of the year. 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 non-flowering 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.

#### MAMMALS

The greatest ecological disturbance attending the encroachment of civilization on this area was that affecting the animal life. The limited area of this park, traversed as it is with city streets, is not suited for restoration of its original fauna. The larger animals, such as buffalo, bear, beaver, deer, mountain lion, wolf, bobcat, and fox, have long abandoned the park area as home territory. Foxes, bobcats, and possibly wolves, may still wander into the park occasionally. Small animals, including rabbits, squirrels, chipmunks, flying-squirrels, and opossums, are very numerous, and raccoons are occasionally seen. Insects of many kinds provide food for many bats.

#### REPTILES

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.

#### AMPHIBIANS

This group of animals is represented by various kinds of salamanders and frogs. The latter attract considerable attention, at least during the spring months, by their nocturnal "concerts."

#### BIRDS

A mild climate and a wide variety of seeds, berries, and other wild fruit sustain a bird population that includes over 90 observed species within the park. Brilliantly colored tanagers, blue jays, cardinals, bluebirds, orioles,

indigo buntings, and others add the attraction of their color to the inspiring music of mockingbirds, thrushes, Bachman's sparrows, and many others. Even the nights of spring and early summer are not entirely without the jubilant song of birds, for the mockingbirds, whip-poor-wills, and chuck-will's-widows often sing throughout the night.

The boundaries of Hot Springs National Park do not include any bodies of water, except a few streams that flow several hundred yards through the park, and the actual park area has no habitat suitable for water birds. However, upwards of 60 species of water and shore birds have been observed on Lake Hamilton, which comes to within 3 miles of the park. Including these water birds, over 190 species of birds have been observed in the immediate vicinity of 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. Dogwood, Goat Rock, and Iron Spring Trails on North Mountain are included in this system.

Seasonally, illustrated lectures upon a variety of subjects pertaining to Hot Springs and other national parks are offered, free of charge, to the public.

Throughout the year competent guides conduct organized groups, upon request, through the hot springs area and hot water supply facilities.

#### THE CHARACTER AND ACTION OF THE WATERS

Chemical analyses of 47 hot springs have shown the waters to be practically identical in chemical composition. With the recent completion of a central collecting and impounding system collecting water from all the springs, any difference in analyses of waters from the different springs is of no significance, since all bathhouses receive exactly the same water. The collected waters are impounded such a short period of time that no change from the water fresh from the different springs is possible. By an ingenious method of insulating and covering all water mains and reservoirs, practically none of the original heat in the water is lost between spring and bathhouse. The water temperature in the central collecting basin is always over 140° F.

As mentioned, water used in each bathhouse is the same, and originates in 47 springs of practically the same chemical analysis. The following analysis represents the approximate chemical composition of the hot water used:

*Approximate chemical composition of the Hot Springs waters*

[Parts per million]

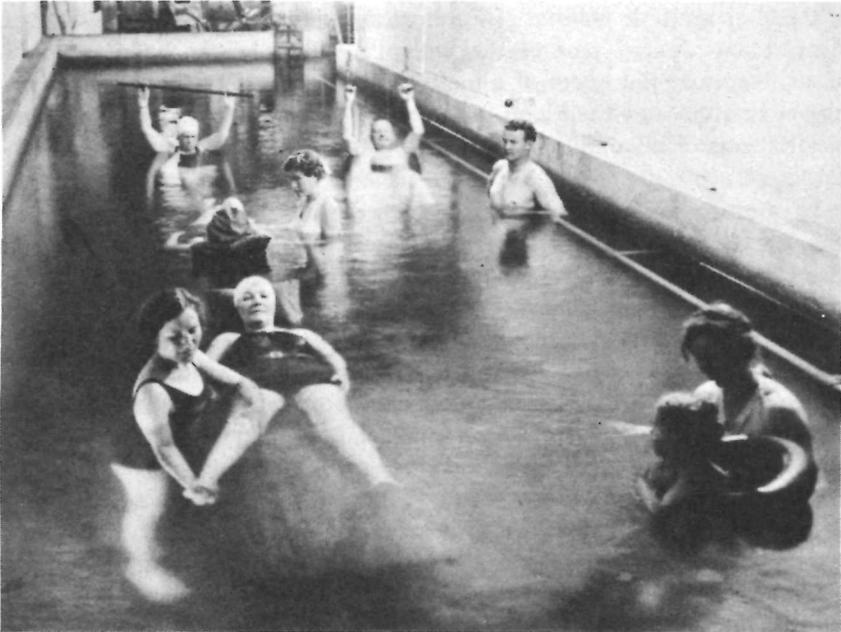
Silica (SiO <sub>2</sub> )	45
Iron (Fe)	.05
Manganese (Mn)	.26
Calcium (Ca)	46
Magnesium (Mg)	5.8
Sodium (Na)	5.1
Potassium (K)	1.6
Bicarbonate (HCO <sub>3</sub> )	165
Sulphate (SO <sub>4</sub> )	9.1
Chloride (Cl)	2.1
Fluoride (F)	0
Nitrate (NO <sub>3</sub> )	0
Total dissolved solids	197

Gases in cubic centimeters per liter at 0° C. and 760 millimeters pressure: nitrogen (N), 8.8; oxygen (O), 3.8; free carbon dioxide (CO<sub>2</sub>), 6.9; hydrogen sulphide (H<sub>2</sub>S), 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.

The Turkish bath at Hot Springs National Park is given either by using a hot room or a hot dry-air cabinet, the body thereby being immersed in hot, dry air. It is used only on directions from a physician and under careful supervision. Owing to the delay in inducing perspiration in some patients by this bath, its applicability is more limited than the vapor bath.

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 the 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. Drying off follows, and the attendant directs a rest period for the bather while reclining in a cooling room. This bath, in addition to the usual eliminative effect, is followed



*National Park Service photo*

**HOT POOL FOR MUSCULAR REEDUCATION**

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."

The full immersion effervescent or artificial Nauheim bath is given on a physician's directions, using Hot Springs mineral water. This bath causes a skin stimulation and increase in circulation through the pores of the skin. Physicians make use of it in treating valvular disease of the heart and in dilation of the heart. They believe it causes a steadier, stronger heart beat at a lower rate and often a distinct diminution in size of a dilated

heart. This form of bath is popular in diseases of metabolism—the normal building up of tissues and breaking down of old body tissues—since it stimulates metabolism and hastens elimination.

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.

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. Of these, probably the most useful is the douche using a single or multiple column of water at any desired temperature, directed against any desired part of the patient's body. In the hands of proficient operators the effect of almost any other form of hydrotherapy on the circulation and the blood may be attained, while the probable beneficial effects of inhaling emanation from the mineral water are not to be forgotten.

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

Aside from the beneficial effects of free 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.

For those interested in the above commonly accepted effects of proper hydrotherapeutic use of the waters of Hot Springs, the comments which follow will probably be of interest:

Increase in metabolism, highly desirable in many chronic conditions, is probably indicated in the increased temperature of persons immersed in the Hot Springs water. Increased tissue change is made evident in desirable increased 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 condition and increased 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.

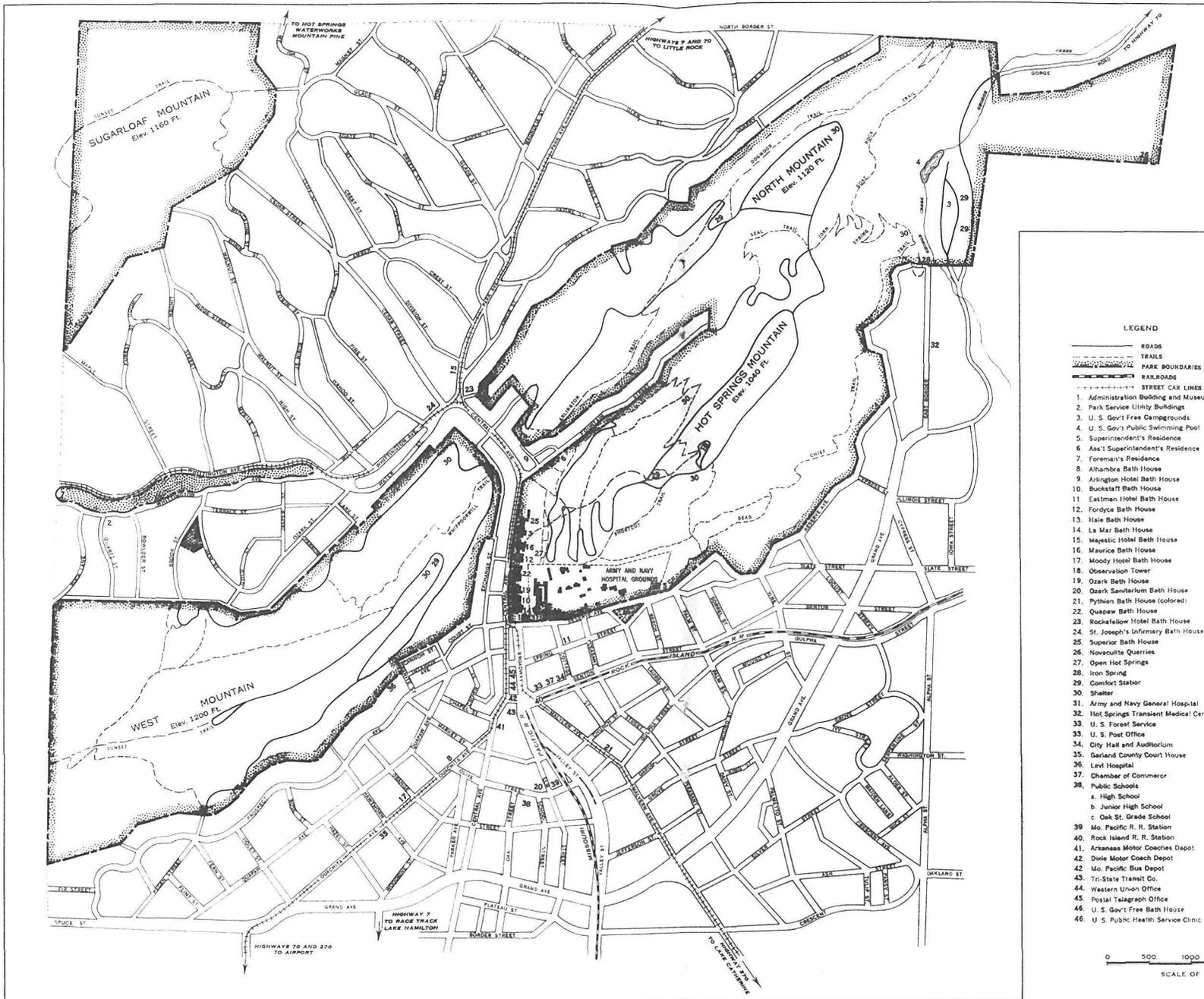
In these cases—which, of course, should first receive proper surgical attention—the increase in bodily resistance, and hence in general health and strength, is often surprising and gratifying after taking a series of properly directed baths in the Hot Springs water. The chronic joint troubles (arthritis) 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 recent and successful treatment in the use of the waters at Hot Springs has been made possible by the construction of a thermic hydrotherapeutic pool for appropriate exercises and physiotherapy for patients submerged in the water at a suitable temperature. This permits a more complete treatment for extreme joint and muscular ailments.

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. Great care is exercised by the park superintendent in permitting only persons highly trained and experienced in this form of physiotherapy to conduct these treatments. 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.

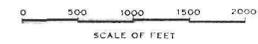
Not only has the recreational or play factor no place in this form of physiotherapy, but it is actually discouraged, inasmuch as such exercises as recreational swimming tend to develop unaffected muscles at the expense of those paralyzed, and hence tend to increase the very deformity which it is desired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



LEGEND

- ROADS
- TRAILS
- PARK BOUNDARIES
- RAILROADS
- STREET CAR LINES
- 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. Asst. Superintendent's Residence
- 7. Foreman'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 Quarries
- 27. Open Hot Springs
- 28. Iron Spring
- 29. Comfort Stator
- 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. Levi Hospital
- 37. Chamber of Commerce
- 38. Public Schools
  - a. High School
  - b. Junior High School
  - c. Oak St. Grade School
- 39. Mo. Pacific R. R. Station
- 40. Rock Island R. R. Station
- 41. Arkansas Motor Coaches Depot
- 42. Dore Motor Coach Depot
- 42. Mo. Pacific Bus Depot
- 43. Tri-State Transit Co.
- 44. Western Union Office
- 45. Postal Telegraph Office
- 46. U. S. Gov't Free Bath House
- 46. U. S. Public Health Service Clinic



MAP OF HOT SPRINGS NATIONAL PARK AND PORTION OF CITY SHOWING LOCATION OF BATHHOUSES AND PUBLIC BUILDINGS

are treated in the shallower end of the tank. The deep-water end of this tank is of especial value in reeducation, under guidance, of muscles used in walking and in the initial steps of persons using crutches after leg and hip operations.

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 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



*National Park Service photo*

THE SWIMMING POOL AT THE PUBLIC CAMPGROUND



BATHHOUSE ROW

the other hand, experience indicates that while taking the baths and drinking the water dosage of medicines may be materially increased.

To recapitulate, the buoyant effect of the water permits ordinarily unused muscles, often considered paralyzed, to function and hence develop, thus overcoming contractures and similar deformities. The warmth of the water, and very possibly its inherent therapeutic value, relax and soothe chronically inflamed and stiffened joints, permitting most desirable and extensive manipulation.

#### 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 before employing a physician procure from the superintendent of the park a list of the qualified practitioners.

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 18 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 10 are located at various points in the city. Nine are in connection with hotels, hospitals, or sanatoria. The water is the same in all, but the prices charged for the baths vary between the different houses in accordance with 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.

Any dissatisfaction relative to administration of the baths or treatment of patients should be brought to the attention of the park superintendent.

Bath attendants, under the rules and regulations for the government of the bathhouses receiving water from the Hot Springs National Park, are allowed to charge for their services not to exceed 20 cents for a single bath, or \$4 per course of 21 baths, to be collected for the attendant by the bath-

house manager and properly accounted for by him to the attendant. This charge is included in the bath price.

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

*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
Kingsway.....	1.25	5.85	11.10	21.00
Maurice.....	1.25	5.85	11.10	21.00
La Mar.....	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



*De Luxe photo*

HORSEBACK RIDING IS A POPULAR PASTIME IN THE PARK

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 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."



ARMY AND NAVY GENERAL HOSPITAL

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.

## 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 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. Modern camping facilities, an abundant supply of pure water, and the unsurpassed scenic beauty surrounding it make this one of the most attractive camps available to the public. 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.

The following rules and regulations apply to those utilizing the campground:

1. Any person desiring to camp in the public campground must first register in the office of the caretaker and obtain a permit for the use of a campsite. Campfires are only permitted in designated places.
2. Campers will be required to use sites assigned to them and must not move to other sites without first obtaining the permission of the caretaker. Camps must not be maintained in the park for periods in excess of 30 days. All camps must be temporary camps. No structure of poles, lumber, or sheet metal is to be erected. Automobiles and trailers must be placed in the assigned areas.

## HOW TO REACH PARK

### BY RAILROAD

Hot Springs is served by the Missouri Pacific Railroad and Rock Island 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, in connection with the Missouri Pacific south thereof. 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, running in all directions.

### 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. This makes the park accessible to those with limited time by means of the fast, comfortable, de luxe, multi-engined planes operated by this air line.

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.



THE LOWER SLOPES OF HOT SPRINGS MOUNTAIN

## 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.

## 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.

*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.

*Public campgrounds.*—All visitors are welcome to utilize the Government public campgrounds on Gorge Creek. Due to the limited space, use of the grounds by each party is limited to a 30-day period. Campgrounds must be kept clean and sanitary and are closed between the hours of 10 p. m. and 5 a. m. The swimming pool at the campground is available for use between sunrise and sunset only. Fires must be confined to sites designated by the campground caretaker.

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

## 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 site. Streets, alleys, and public building sites given to city by Government. Permanent park area designated and restricted from settlement or sale.
- 1882—Erection of original Army and Navy General Hospital.
- 1884—Arch constructed over Hot Springs Creek where Bathhouse Row promenade walk now is located.
- 1903—Establishment of Federal Registration Board to regulate the practice of physicians.
- 1921—Hot Springs Reservation made a national park by act of Congress.
- 1932—Centennial Anniversary.
- 1933—Completion of present Army and Navy General Hospital.

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VIEW FROM WEST MOUNTAIN

## 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; 24.91 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; 643.26 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; 163.32 square miles.
- MAMMOTH CAVE, KY.—Interesting caverns, including spectacular onyx cave formation. Established for protection 1936; 54.09 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.
- PLATT, OKLA.—Sulphur and other springs. Established 1902; 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.—General Sherman, largest and possibly oldest tree in world; 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. No stalactites or stalagmites. Established 1903; 19.75 square miles.
- YELLOWSTONE, WYO.—MONT.—IDAHO.—World's greatest geyser area, and an outstanding game preserve. Established 1872; 3,437.88 square miles.
- YOSEMITE, CALIF.—Valley of world-famous beauty; spectacular waterfalls; magnificent High Sierra country. Established 1890; 1,176.16 square miles.
- ZION, UTAH.—Zion Canyon, 1,500 to 2,500 feet deep. Spectacular coloring. Established 1919; 134.91 square miles.

## GOVERNMENT PUBLICATIONS

*Glimpses of Our National Parks.* Brief descriptions of national parks. Address Director, National Park Service, Washington, D. C. Free.

*Recreational Map.* Shows Federal and State recreational areas throughout the United States and gives brief descriptions of principal ones. Address Director, National Park Service, Washington, D. C. Free.

*Hot Springs Folio.* Contains information on the geology of the Hot Springs region. Address Director, United States Geological Survey, Washington, D. C. Price, 25 cents.

*Topographic Map of Hot Springs and Vicinity.* Scale, 1 mile to the inch. Address Director, United States Geological Survey, Washington, D. C. Price, 10 cents.

*Fauna of the National Parks.* Series No. 1. By G. M. Wright, J. S. Dixon, and B. H. Thompson. A survey of wildlife with recommendations for adequate protection. Illustrated. 157 pages. Superintendent of Documents, Washington, D. C. Price, 20 cents.

*Fauna of the National Parks.* Series No. 2. Wildlife management in the national parks. By G. M. Wright and B. H. Thompson. Illustrated. 142 pages. Superintendent of Documents, Washington, D. C. Price, 20 cents.

*National Parks Portfolio.* By Robert Sterling Yard. Cloth bound and illustrated with more than 300 pictures of places of outstanding scenic interest. Superintendent of Documents, Washington, D. C. Price, \$1.50.

Illustrated booklets about the following national parks may be obtained free of charge by writing to the National Park Service:

Acadia, Maine.	Mesa Verde, Colo.
Carlsbad Caverns, N. Mex.	Mount McKinley, Alaska.
Crater Lake, Oreg.	Mount Rainier, Wash.
General Grant, Calif.	Platt, Okla.
Glacier, Mont.	Rocky Mountain, Colo.
Grand Canyon, Ariz.	Sequoia, Calif.
Grand Teton, Wyo.	Wind Cave, S. Dak.
Great Smoky Mts., N. C.-Tenn.	Yellowstone, Wyo.-Mont.-Idaho.
Hawaii, Hawaii.	Yosemite, Calif.
Hot Springs, Ark.	Zion and Bryce Canyon, Utah.
Lassen Volcanic, Calif.	



