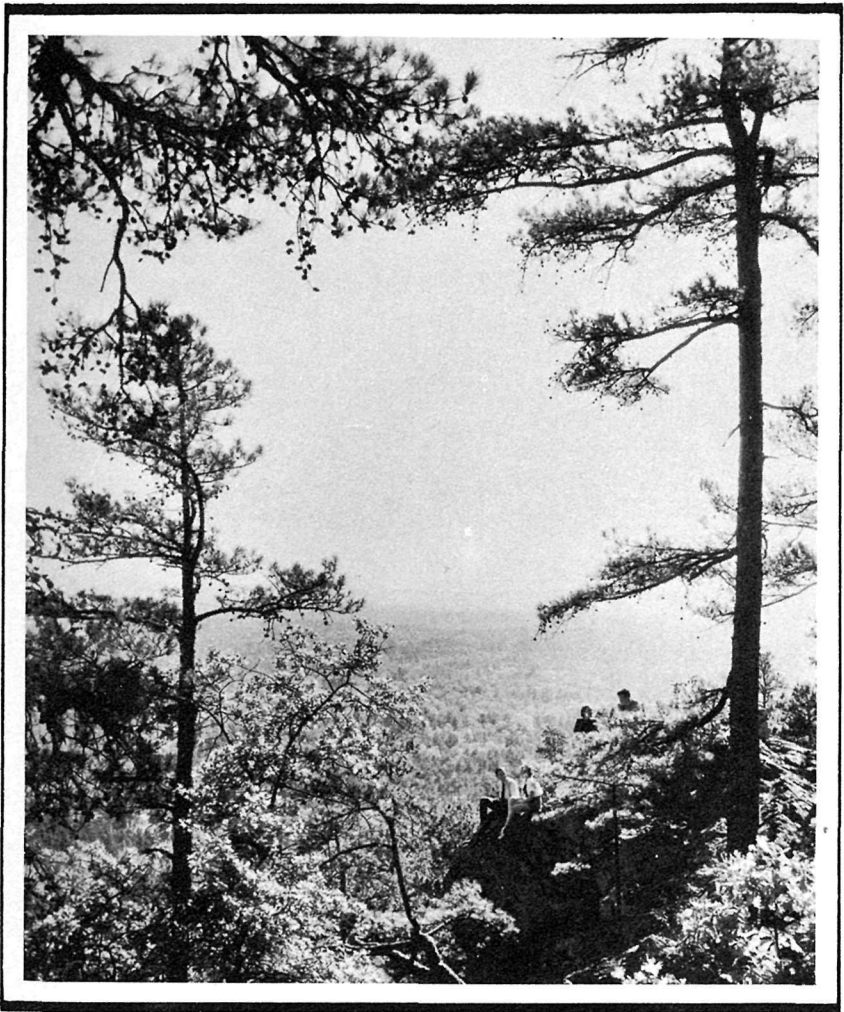


HOT SPRINGS NATIONAL PARK

✦ *ARKANSAS* ✦



*UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE*

UNITED STATES DEPARTMENT OF THE INTERIOR
HAROLD L. ICKES, Secretary
NATIONAL PARK SERVICE
ARNO B. CAMMERER, Director

GENERAL INFORMATION REGARDING

HOT SPRINGS

NATIONAL PARK

ARKANSAS



OPEN ALL YEAR

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1935

RULES AND REGULATIONS

(BRIEFED)

Hot Springs National Park has been under Government control as a reservation or a park for over 100 years, and its present well-kept condition has been made possible through the cooperation of our visitors. We are sure that that cooperation will continue and we will be able for even longer periods to plan for the comfort and convenience of an increasing number of visitors, and 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 the public camp ground, and 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.—The soliciting or sale of anything, no matter how minor, is not allowed except by persons holding contract with the United States, and these are restricted to the bathhouses and the Hot Springs Mountain Observatory.

Automobiles.—All of our roads are of mountain type and care should be used 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 be closed always.

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 camp grounds.—All visitors are welcome to utilize the Government public camp grounds on Gulpha Creek, but due to the limited space, use of the grounds by each party is limited to a 30-day period. Camp grounds 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 camp ground is available for use between sunrise and sunset only.

The park police are always in uniform and are glad to answer inquiries at all times.

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IMPORTANT HISTORICAL EVENTS

- 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.
- 1800. First white settler.
- 1803. Included in lands in the Louisiana Purchase and became United States property.
- 1804. Visited by Dunbar and Hunter as part of Lewis and Clark Expedition.
- 1807. First house erected by Manuel Prudhomme.
- 1809. First bona fide visitors.
- 1820. First hotel 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 building.
- 1884. Arch constructed over Hot Springs Creek where Bathhouse Row promenade walk now is located.
- 1903. Establishment of Federal Registration Board to qualify physicians.
- 1921. Hot Springs Reservation made a national park by act of Congress.
- 1932. Centennial Anniversary.
- 1933. Completion of Army and Navy General Hospital.

HOT SPRINGS NATIONAL PARK

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, in a picturesque wooded area of the romantic Ouachita 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 there 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 making the first national park reservation of the country and preserving the waters of the springs in perpetuity free from monopoly and commercial exploitation. In 1921, by act of Congress, its name 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 946 acres, and includes Hot Springs Mountain, North Mountain, West Mountain, and Sugar-Loaf Mountain, being part of the Ouachita Range, and Whittington Park, located in the city of Hot Springs. The springs are all grouped about the base of Hot Springs Mountain, their aggregate flow being approximately 1,000,000 gallons per day. The hot water is supplied to the various bath-houses, the receipts from this source being deposited in the United States Treasury. There are more than 12 miles of well-built roads and 18 miles of trails and footpaths over the mountains.

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, Thos. J. Allen, Jr., whose 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 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 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.

Lying as it does within the region of the Ouachita Mountains, the climate of Hot Springs is favorable 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.

As a result, while the winters in Hot Springs are mild, permitting outdoor recreation in comfort except at infrequent intervals, the summers are free from excessive humidity, with temperatures moderated by 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, pure atmosphere and sunshine, are considered by local physicians as important aids to the bath treatments.

As a resort, Hot Springs is of 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.

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 latter



One of the many fine golf courses at Hot Springs.

being well equipped with rest benches at popular viewpoints. These long have offered nearby opportunities for motoring, horseback riding, and tramping through the pine forests. The mountain roads around the park are numerous, and lead through interesting Arkansas mountain-life settings. Water sports of every sort have become available through the building of

Hot Springs National Park—Arkansas

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 shoreline, provide for motor-boating, sailing, canoeing, and fishing. Numerous streams are also accessible for fly fishing.



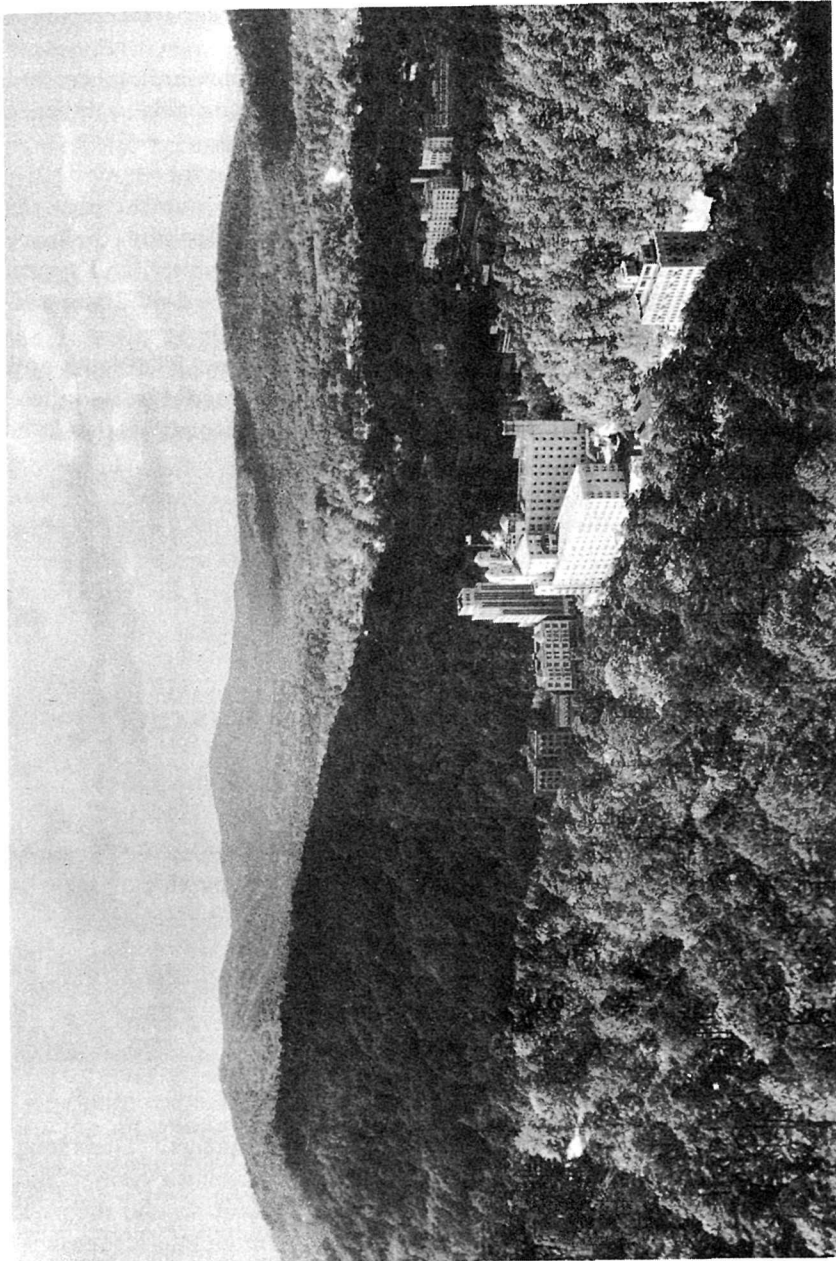
A popular way to enjoy the pure air and sunshine at Hot Springs National Park.

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.

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.

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 counter-attractions of a large city to lure delegates' from attendance at business sessions.



View from top of Hot Springs Mountain.

Reference has already been made to the central location of Hot Springs and to its excellent hotels, 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 class 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 ²

The Hot Springs of Arkansas are located on a spur of the Ouachita Mountains called Zigzag Mountain. The springs are found principally along the outcrop of the Hot Springs sandstone located in the valley between West and Hot Springs Mountains. These mountains trend north-northeast and were formed by lateral compression which produced overturned folds and fractures. The Hot Springs sandstone is Mississippian in age; however, the period of folding was much later, probably Pleistocene.

The hot water rises within a comparatively small area, about 20 acres, near the southwest base of Hot Springs Mountain. The area is marked by a limy deposit formed by the springs which is called travertine. This porous limestone covers the older rocks by a layer from a few inches to 8 feet thick. The springs are making daily additions to this travertine.

Evidence as to the source of the heat of the spring water which ranges from 95° to 147° F. is not conclusive. One explanation is that these springs

² By Earl A. Trager.

begin as meteoric water or rainfall which seeps into the Bigfork chert, a sandy formation, near the top of a fold in the rocks just northwest of West Mountain. According to this explanation, the water passes downward through the porous sandy layers where it is heated by a buried mass of cooling rock. After this water crosses the lower bend of the rock, called a syncline, it then rises to the surface through the upward dipping layers of rock on the southwest side of Hot Springs Mountain. Lack of evidence of recent volcanic activity in the area to provide heated rocks at reasonably shallow depths, together with the fact that part of the intake area is 200 feet lower than the springs, would indicate that this theory requires revision at least in part.

A second explanation states that the waters are of juvenile origin, i. e., water which has never been at the surface before, but is discharged by buried, cooling rocks.

This reasoning may take two forms: (1) That there is a relatively shallow buried mass of igneous rock discharging water due to cooling and crystallization; (2) that a fracture, fault, or series of fissures extends into the deep interior of the earth, through which deep-seated waters, juvenile or of mixed origin, rise to the surface. The first of these examples is a specialized case and is considered less probable than the second.

The future of Hot Springs, Ark., is largely dependent upon the origin of the water, for if it is of meteoric origin (rain water) the supply will always be dependent upon the annual rainfall, the porosity and the surface cover of the beds through which it enters the surface rocks, and for these reasons the quantity may fluctuate considerably.

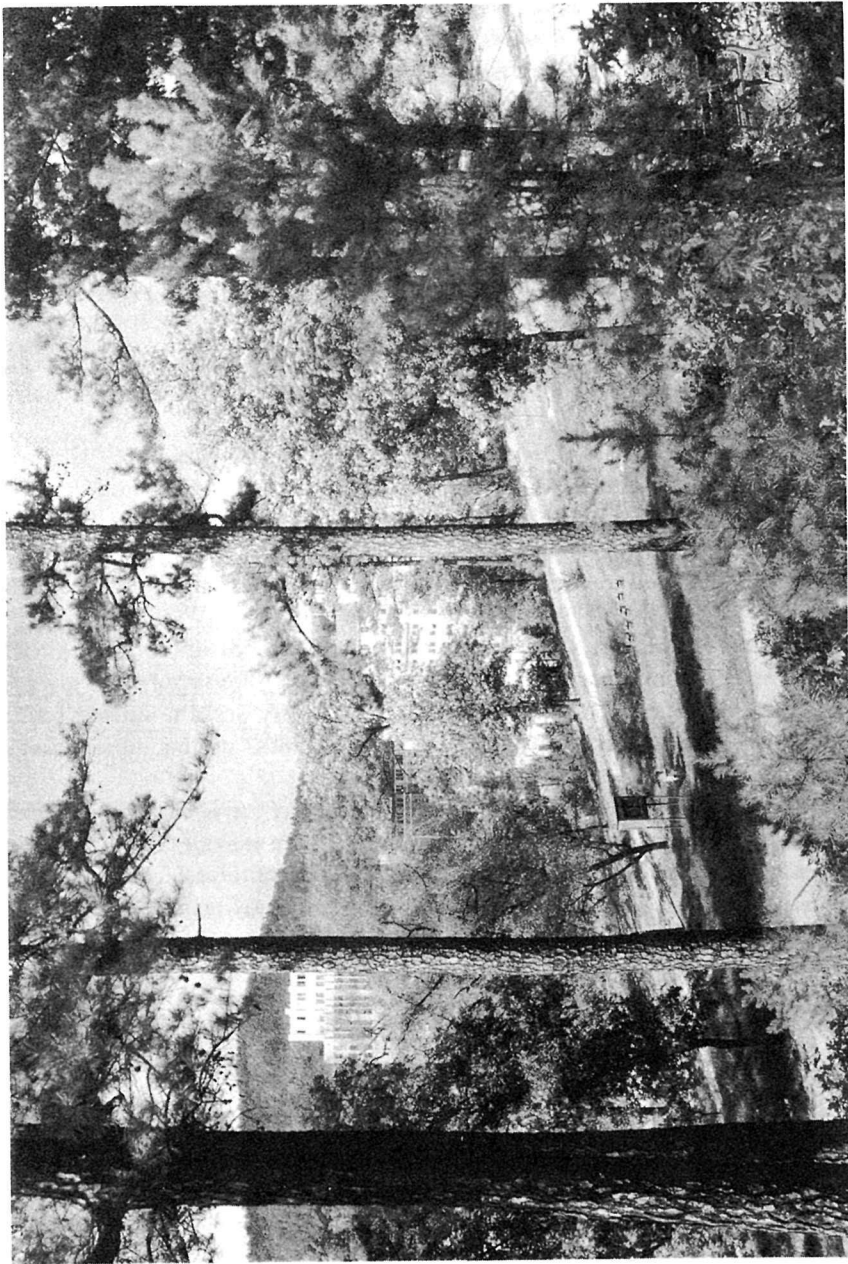
If it is of deep-seated origin, the water rising to the surface through a series of fractures, the probability is that the supply is practically inexhaustible.

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, September-October 1922, pp. 425-449).

PLANT AND ANIMAL LIFE ³

Hot Springs National Park consists principally of heavily forested broken mountainous tracts, occupying a part of the picturesque watersheds of two perennial streams, Bull Bayou and Gulpha Creek. This fact, together with its proximity to the adjacent valleys and floodplain of the Ouachita River, much of which has been inundated by the extensive waters of the man-made Lakes Catherine and Hamilton near the park, makes it a delightful place for the display of wild flowers, trees, and shrubs. These conditions also make it ideal as a habitat for many species of wildlife.

³ By Raymond R. Gregg.



Slopes of Hot Springs Mountain.

The forests of the section consist primarily of short-leaf pine and numerous species of oak and hickory, variously supplemented by sweet gum, black gum, elm, maple, sycamore, dogwood, willow, locust, cottonwood, magnolia, linden, hackberry holly, ironwood, hop hornbeam, ash, birch, cedar, and other trees less common or scarcely arboreal. The shrubs and woody climbers of the forest floor, field, or streambanks include many species bearing abundant and beautiful flowers. Azaleas, hydrangea, service-berry, styrax, pawpaw, elderberry, wild cherry, black-haw, red-haw, St. John's-wort, St. Andrew's-Cross, trumpet-creeper, wild-honeysuckle, leather-flower, buckeye, wild plum, New-Jersey tea, red bud, buttonbush, wild roses and blueberries are but a part of the woody plants that contribute reds, pinks, yellows, purples, orange, and all conceivable shades of white to the color pattern of the woodland in blossom time.

As early as the end of February dainty violets, tooth-wort, wood sorrel, and rue-anemone, newly sprung from the warming earth, start the vernal flowering season. Prominent among the prolific spring flowers to be seen are shooting-star, bird-foot, violet, ragwort, dandelion, wood-betony, phlox, wild hyacinth, spiderwort, golden tickweed, heal-all, blazing star, field daisy, purple cone-flower, common thistle, larkspur, and skullcap. High grass meadows of the North Mountain section of the park abound with a multitude of blossoms of many species.

Summer and fall flowering are featured by the dominance of species of the mint, legume, and composite families. Wild sunflowers, black-eyed Susans, partridge pea, golden coreopsis, rose gentian, mullens, butterfly-pea, downy skullcap, Mountain-mint, ruellia, day-flowers, blue and cardinal lobelias, Indian-pink, horse-nettle, bitter weed, passion-flowers, buffalo-bur, trumpet bindweed, seedbox, willow primrose, tar-weed, golden aster, evening primroses, purple asters, beggar's-lice, ironweeds, blazing-stars, Joe Pye-weed, potato vine, horse-mint, smooth and downy false foxgloves, goldenrods, bur marigolds, sneezeweed, four-o'clocks, purple monkey-flower, leaf-cup, chicory, rattlesnake-weeds, great blue sage, pluchea, sparges, vervain, heliotrope, lespedezas, mist-flower, and bonesets are common and attractive flowers of the summer and fall representing every imaginable shade of floral coloration.

Deer, bear, beaver, buffalo, wildcat, panther, mountain lion, wolf, fox, and perhaps elk and antelope were once common in the vicinity of Hot Springs. The inroads of civilization, wasteful destruction of animals, and absence of regulation of planning in the past, long since have forced these animals out of existence or into the remote and inaccessible parts of the Ouachita Mountains. Wildcats, wolves, and foxes occasionally wander

into the park, but recorded instances are few in recent years. The park today is the refuge of only those small animals that can successfully exist under the habitat conditions available. There is an abundance of gray and fox squirrels, cottontail rabbits, chipmunks, flying squirrels, opossums, and bats. Raccoons frequently range into the park, but the area is not satisfactory for animals of roving disposition. There are myriad insects, many of them interesting indeed in their habits; others at once admirable for their bright colors and distinctive design. Skinks and American chameleons are the principal lizards. Snakes are few, principally of harmless species, such as blacksnakes, kingsnakes, blue racers, chicken snakes, coach whips, garter snakes, grass snakes, and spreading adders. Poisonous moccasins, copperheads, and rattlesnakes are practically unknown in the park.

The prolific birdlife of the region includes birds distinguished by brilliant color, vocal ability, or both. Such flashy species as the jay, cardinal, indigo bunting, yellow warbler, goldfinch, scarlet tanager, summer tanager, bluebird, robin, sweet-toned thrush, vireo, warbler, mocking bird, thrasher, and wren are representative. Numerous covies of bobwhites, or Virginia quail, reside within the park. Of the larger land birds there are turkey buzzards, crows, horned, barred, and screech owls, red-tailed sparrow, sharp-shinned, and Cooper's hawks. Kingfishers, sandpipers, snipes, cormorants, Canada geese, herons, cranes, ducks, grebes teal, and rarely egrets are the principal resident and migratory birds that may be seen around the lakes and water courses close to the park.

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

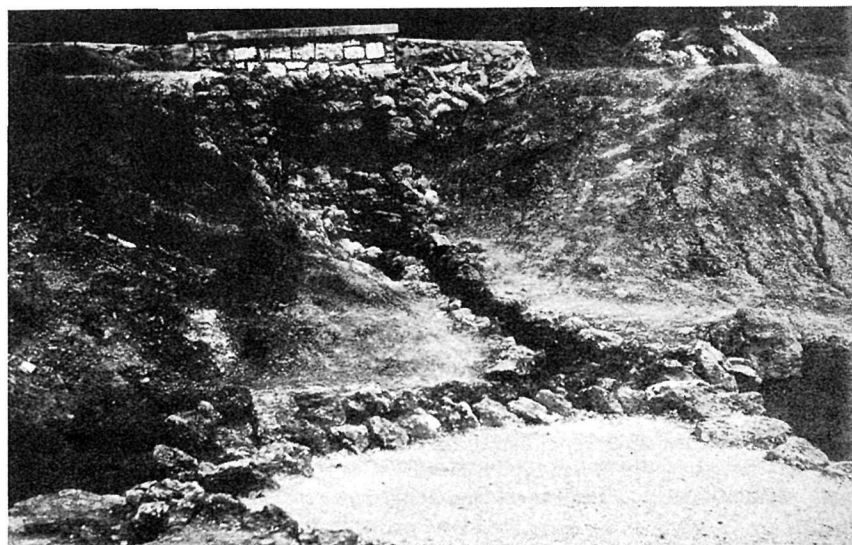
	[Parts per million]
Silica (SiO ₂)	45
Iron (Fe)	.05
Manganese (Mn)	.26
Calcium (Ca)	46
Magnesium (Mg)	5.8
Sodium (Na)	5.1
Potassium (K)	1.6
Bicarbonate (HCO ₃)	165
Sulphate (SO ₄)	9.1
Chloride (Cl)	2.1
Fluoride (F)	0
Nitrate (NO ₃)	0
Total dissolved solids	197

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.

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



Hot water exhibit, showing cascades and pools.

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 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 dilatation 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 new 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.

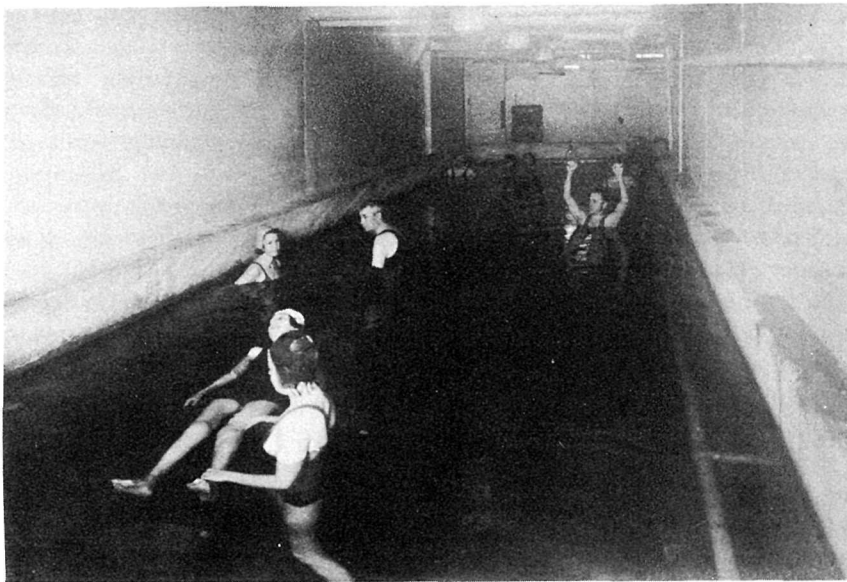
In addition to and in conjunction with each of these types of treatment, the hot water is utilized internally through drinking. The practice of drinking it is considered a great aid to whatever other treatment is being given. Several free hot-water fountains at convenient locations in the park furnish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



Hot pool for muscular reeducation.

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 recent 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 paralyses following anterior poliomyelitis (infantile paralysis) and other nerve lesions leading to weakening and nonuse of muscles still capable of development. Children 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 is 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 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.

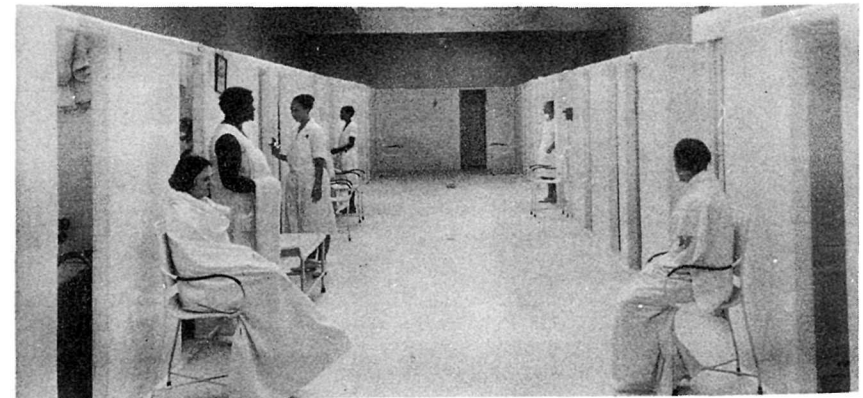
THE PAY BATHHOUSES

There are 19 pay bathhouses operated under rules and regulations approved by the Secretary of the Interior. Nine 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 bathhouse 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.



All bathhouses have individual bathing rooms.

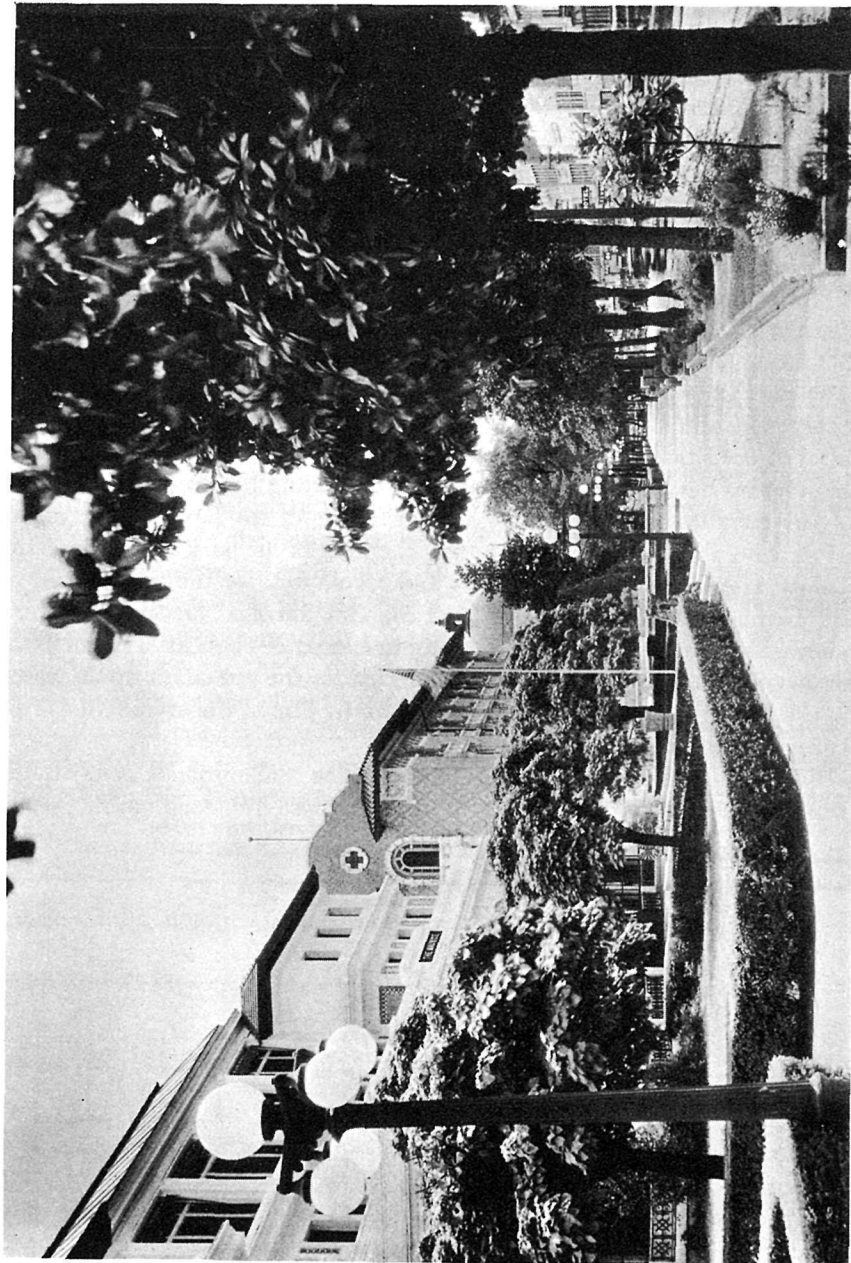
Hot Springs National Park—Arkansas

SCALE OF RATES FOR BATHS AT 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
Imperial.....	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
Woodmen of Union (colored).....	1. 00	4. 60	8. 60	16. 00

Bathhouse Row.



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, shall be as follows:

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 March 2, 1911, 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 to exceed \$25, or 30 days' imprisonment, or both. The law reads as follows:

ACT OF MARCH 2, 1911 (36 STAT. 1015)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, 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, Arkansas; 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 subject to a fine of not to exceed twenty-five dollars, or thirty days' imprisonment, or both.

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

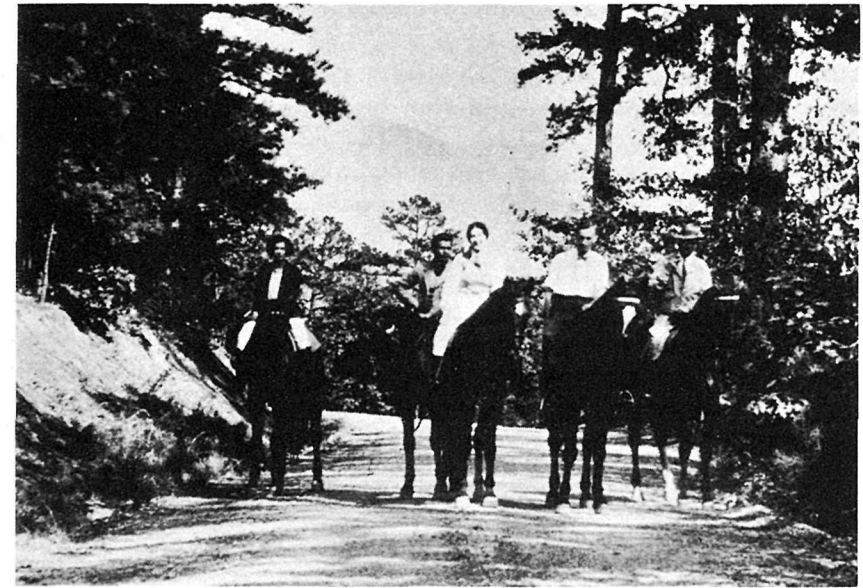
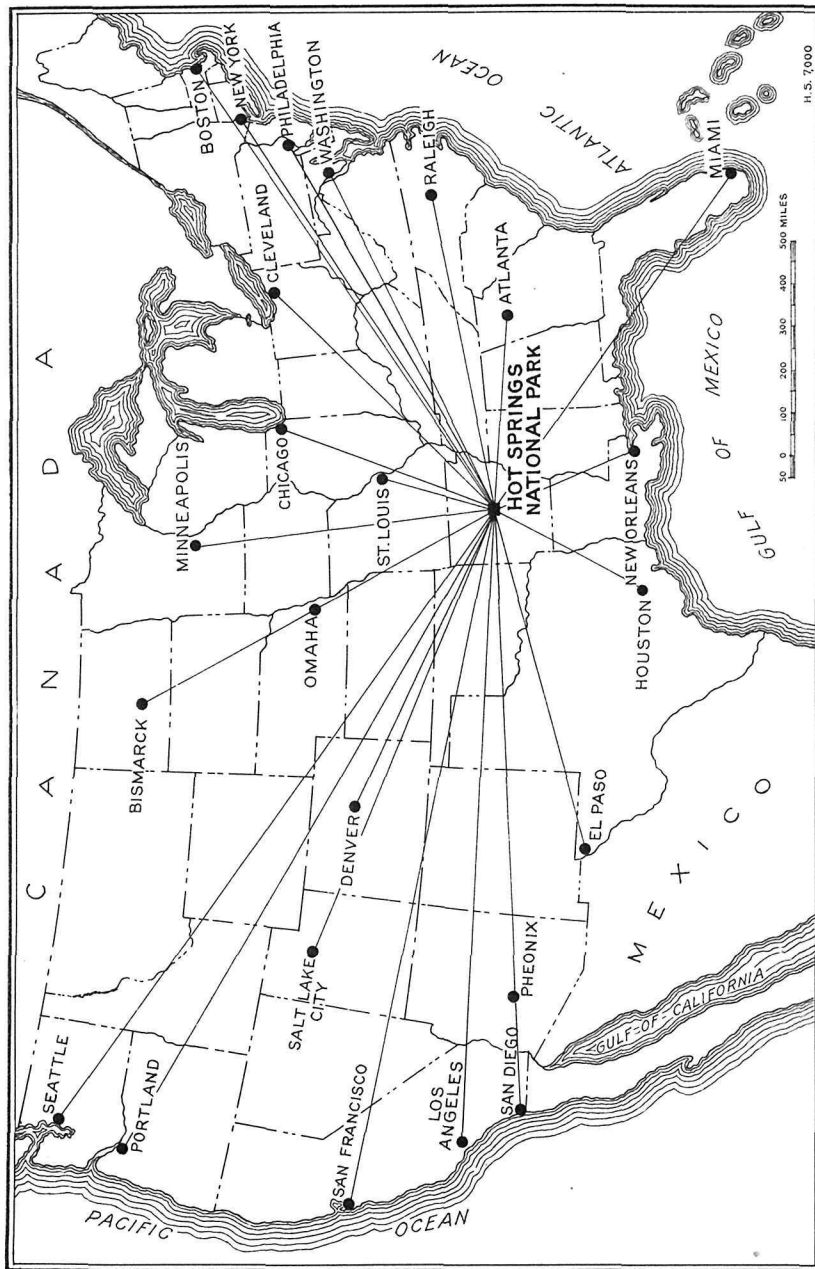
of the Revenue Cutter Service, now forming part of the Coast Guard, officers of the Public Health Service, and honorably discharged soldiers and sailors of the Regular and Volunteer Army and Navy of the United States, who are suffering from such diseases as the waters of the hot springs of Arkansas have 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.



The swimming pool at the public camp ground.



Horseback riding is a popular pastime in the park.

PUBLIC CAMP GROUND

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 camp site, with dressing rooms available for both men and women. The camp is 2 miles distant from the center of the city of Hot Springs.

AIRPORT FACILITIES

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.

HOW TO REACH THE 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 parts 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.

LITERATURE AND MAPS

Government publications on Hot Springs National Park may be obtained as indicated below. Separate communications should be addressed to the offices mentioned.

DISTRIBUTED FREE BY THE NATIONAL PARK SERVICE

The following publications may be obtained free on written application to the Director of the National Park Service or by personal application to the office of the superintendent of the park:

RECREATIONAL MAP OF THE UNITED STATES, with brief descriptions on reverse side.
GLIMPSES OF OUR NATIONAL PARKS. 92 pages, including illustrations. Contains descriptions of the most important features of the principal national parks.

SOLD BY THE SUPERINTENDENT OF DOCUMENTS

The following publication may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C.

NATIONAL PARKS PORTFOLIO, by Robert Sterling Yard. 274 pages, including 312 illustrations. Bound securely in cloth. Contains 9 chapters, each descriptive of a national park, and one, a larger chapter, devoted to other national parks and monuments. Price, \$1. Postage prepaid. Remittances should be made by money order or in cash.

SOLD BY DIRECTOR OF UNITED STATES GEOLOGICAL SURVEY

HOT SPRINGS FOLIO. Contains information regarding the geology of the Hot Springs region. Price, 25 cents.

TOPOGRAPHIC MAP showing Hot Springs National Park and vicinity. Scale, 1 mile to the inch. Price, 10 cents.

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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.

OTHER NATIONAL PARKS

Circulars of general information regarding the national parks listed below may be obtained free of charge by writing to the Director of the National Park Service, Washington, D. C.

Acadia National Park, Maine
Carlsbad Caverns National Park, New Mexico
Crater Lake National Park, Oregon
Glacier National Park, Montana
Grand Canyon National Park, Arizona
Grand Teton National Park, Wyoming
Great Smoky Mountains National Park: North Carolina, Tennessee
Hawaii National Park, Territory of Hawaii
Lassen Volcanic National Park, California
Mesa Verde National Park, Colorado
Mount McKinley National Park, Alaska
Mount Rainier National Park, Washington
Platt National Park, Oklahoma
Rocky Mountain National Park, Colorado
Sequoia and General Grant National Parks, California
Wind Cave National Park, South Dakota
Yellowstone National Park: Wyoming, Montana, Idaho
Yosemite National Park, California
Zion and Bryce Canyon National Parks, Utah

DO YOU KNOW YOUR NATIONAL PARKS

- Acadia, Maine.**—Combination of mountain and seacoast scenery. Established 1919; 21.61 square miles.
- Bryce Canyon, Utah.**—Canyons filled with exquisitely colored pinnacles. Established 1928; 55.06 square miles.
- Carlsbad Caverns, New Mexico.**—Beautifully decorated limestone caverns believed largest in the world. Established 1930; 15.56 square miles.
- Crater Lake, Oregon.**—Astonishingly beautiful lake in crater of extinct volcano. Established 1902; 250.52 square miles.
- General Grant, California.**—Celebrated General Grant Tree and grove of Big Trees. Established 1890; 3.96 square miles.
- Glacier, Montana.**—Unsurpassed alpine scenery; 250 lakes; 60 glaciers. Established 1910; 1,533.88 square miles.
- Grand Canyon, Arizona.**—World's greatest example of erosion. Established 1919; 1,009.08 square miles.
- Grand Teton, Wyoming.**—Most spectacular portion of Teton Mountains. Established 1929; 150 square miles.
- Great Smoky Mountains: North Carolina, Tennessee.**—Massive mountain uplift covered with magnificent forests. Gorgeous wild flowers. Established for protection 1930; 615.76 square miles.
- Hawaii: Islands of Hawaii and Maui.**—Volcanic areas of great interest, including Kilauea, famous for frequent spectacular outbursts. Established 1916; 245 square miles.
- Hot Springs, Arkansas.**—Forty-seven hot springs reserved by the Federal Government in 1832 to prevent exploitation of waters. Made national park in 1921; 1.48 square miles.
- Lassen Volcanic, California.**—Only recently active volcano in United States. Established 1916; 163.32 square miles.
- Mesa Verde, Colorado.**—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, Washington.**—Largest accessible single-peak glacier system. Third highest mountain in United States outside Alaska. Established 1899; 377.78 square miles.
- Platt, Oklahoma.**—Sulphur and other springs. Established 1902; 1.33 square miles.
- Rocky Mountain, Colorado.**—Peaks from 11,000 to 14,255 feet in heart of Rockies. Established 1915; 405.33 square miles.
- Sequoia, California.**—General Sherman, largest and perhaps oldest tree in the world; outstanding groves of Sequoia gigantea. Established 1890; 604 square miles.
- Wind Cave, South Dakota.**—Beautiful cavern of peculiar formations. No stalactites or stalagmites. Established 1903; 18.47 square miles.
- Yellowstone: Wyoming, Montana, Idaho.**—World's great geyser area, and an outstanding game preserve. Established 1872; 3,437.88 square miles.
- Yosemite, California.**—Valley of world-famous beauty; spectacular waterfalls; magnificent High Sierra country. Established 1890; 1,176.16 square miles.
- Zion, Utah.**—Beautiful Zion Canyon 1,500 to 2,500 feet deep. Spectacular coloring. Established 1919; 148.26 square miles.



