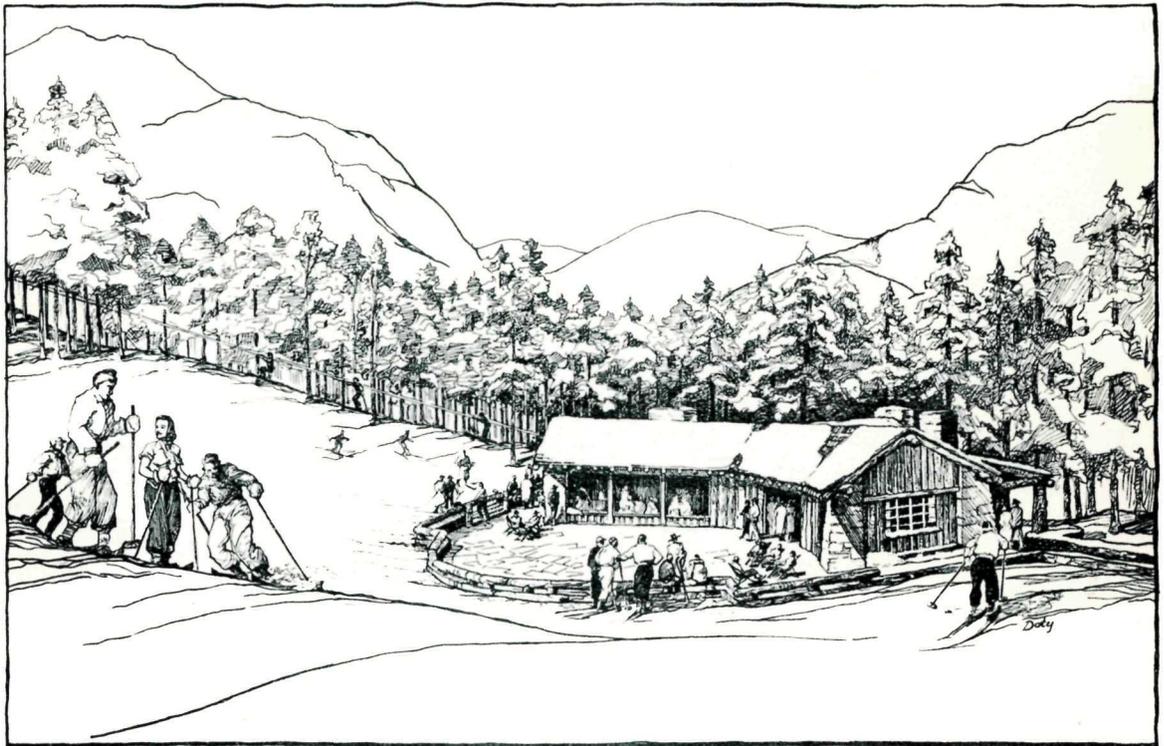


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HYDE STATE PARK

NEW MEXICO

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C O N T E N T S

| | |
|---|----------|
| HORACE M. ALBRIGHT | Page 3. |
| HUMAN PRUNES By Don Watson | Page 4. |
| THE WHITE SANDS By Tom Charles | Page 10. |
| ECONOMICS OF BIRD BANDING By Natt H. Dodge | Page 14. |
| THE STONE LIONS OF COCHITI - AND OF ZUNI By Erik K. Reed | Page 23. |
| GROWTH OF WINTER SPORTS By Milo F. Christiansen | Page 25. |
| SAVE THE RUINS! By Dr. Aubrey Neasham | Page 29. |
| RATTLESNAKES! By T. O. Thatcher | Page 34. |
| THE SANTA FE CONFERENCES | Page 41. |

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Santa Fe

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R E G I O N III

NATIONAL PARK SERVICE

ARIZONA - ARKANSAS - NEW MEXICO
OKLAHOMA - TEXAS AND SOUTHERN
PARTS OF COLORADO - NEVADA
AND UTAH



HORACE M. ALBRIGHT

He was Director of the National Park Service
from 1929 to 1933.

HORACE M. ALBRIGHT

Horace M. Albright was a mere youth when he first saw those oldest of living things, the Big Trees, in his native California. He has been an active conservationist ever since.

Mr. Albright went to Washington, D. C., shortly after receiving his Bachelor of Letters degree from the University of California, in 1912. He was a member of Secretary of the Interior Franklin K. Lane's staff from 1913-1915, and attended night classes to get an L.L.B. from Georgetown University, in 1914. He became Assistant Director of the National Park Service when that agency was established in 1917. Two years later he was sent to Yellowstone National Park as the first civilian superintendent, after the park had been transferred from the War Department's jurisdiction. While in the Yellowstone he served in the dual capacity of Field Assistant to the Director. He became Director of the Service in January, 1929, following the retirement of Stephen T. Mather, and continued to head the Service until August, 1933, when he resigned to become Vice President and General Manager of the United States Potash Company. He still serves in the latter position, with headquarters in New York City.

A conservationist of the Theodore Roosevelt school, Mr. Albright, throughout his adult life, has been in the front ranks of preservationist campaigns. Never passive in his support of all things aimed at keeping natural areas intact, he has been, and is today, a national leader in preaching the gospel of husbanding our natural resources. Much of this country's wilderness that still stands unspoiled is so because of him. The American Scenic and Historic Preservation Society, in 1933, awarded him the Pugsley gold medal.

When President Franklin D. Roosevelt's plan for organization of the Civilian Conservation Corps was approved by the Congress in March, 1933, Mr. Albright, as Director of the National Park Service, was called upon to formulate a nationwide program under which thousands of these youths could be started immediately on extensive conservation and development work in parks and other recreational areas. It was a tremendous task, encompassing not only national parks but state parks, county parks, and metropolitan parks. The program was ready, even before the CCC enrollment got under way. The business world, at this time, again beckoned Mr. Albright but not until after the National Park Service part of the CCC machine was functioning smoothly in all departments did he retire from the government service.

Though now engaged mainly in commercial activities, Mr. Albright, as President of the American Planning and Civic Association, and through close contact with National Park Service and other conservation work, continues unselfishly to serve the public.

HUMAN PRUNES

By Don Watson,
Park Naturalist,
Mesa Verde National Park.

Mummies are the darndest people! You go scratching and digging through the depths of a cave, carefully sifting out the accumulated dust of the ages, suddenly to come face to face with a person who has been sitting there quietly, unblinkingly, for a thousand years. In spite of the sudden intrusion, it still bats not an eye. Mellowed by time, aged in the dust, so to speak, it is immune to surprises.

Except for two things, that mummy is just like anyone else. Only two changes have occurred. The parts of the body are all there; the skin, the hair, the eyes, even the pupils are visible. Every bone is intact and still clothed with the original flesh. The organs are all in place. Long black hair still hangs down over the shoulders and in it are the eggs of lice that once knew it as home. Everything is in place; the body is perfectly preserved. What are the two changes? The only difference between the mummy and anyone else is that the mummy has lost the spark of life and the moisture. Admittedly, it is a big difference!

These natural mummies have been found in ruins in many parts of the Southwest. They are not common, certainly, but many have been found, and others may be sitting in unexplored caves, patiently awaiting the archaeologist's trowel. Preserved through natural processes, these mummies are not to be confused with those of Egypt, where actual embalming was practiced. In the Southwest the process was entirely natural - a slow drying of the tissues due to the dryness of the grave.

The Southwest is an arid region. The air is dry; the earth is dry; the great caves where the ancient Indians built their homes are often as dry as dust. When bodies were buried in those caves a natural dehydration took place. The moisture from the flesh was absorbed by the dry materials surrounding it. Slowly the body dried and shriveled. Finally the moisture had completely disappeared and the body was as dry and as hard as rawhide. In this state it has lasted very well. The process is just the same as that by which a fleshy, juicy plum is reduced to a dried prune. As the moisture evaporated the flesh dried and shriveled. A human prune resulted.

Mummies are practically always found in caves; only very rarely have they been found in open ruins. The dry conditions necessary for mummification can scarcely exist without the protection of the cave. One of the first questions that arises in connection with mummies is that of why the ancient Indians sometimes buried the dead in caves where they themselves lived. First of all it must be considered that the early people buried only a small percentage of their dead in the caves. Cliff Palace, in Mesa Verde National Park, is a typical case. That cave was occupied by three

or four hundred people at a time, for a couple of centuries. There were hundreds of deaths. Mr. John Wetherill, who was one of the discoverers of Cliff Palace, says that fourteen mummies were found in it at the time of discovery. In addition there were a few skeletons in the cave. This means that of the hundreds of bodies disposed of during the two centuries, not more than two score were buried in the cave.

Many suggestions have been made, none of which seems especially logical, so no harm can come from the suggestion of another answer to the problem of these few cave burials. During the winter the Mesa Verde is sometimes subjected to severe, blizzard-like storms. The snow reaches a depth of two or three feet. At such times the Cliff Dwellers were probably a cold, more or less miserable group of people. When death came at such a time they were probably very reluctant about going out to dig a grave down through the snow and frozen earth. The only escape was by burying within the cave. In the rear was a long low space where there were no houses. This was the turkey roost and it was here that part of the refuse from the village was thrown. In this dry refuse the mummies are found. Could these have been burials that were made within the cave in order to avoid severe winter storms? There in the back of the cave they would have remained cold for several months. Because of the cold, decomposition would not have set in. By the time warm weather came, dehydration would have been well under way. As a result, the bodies mummified. It seems possible, then, that the mummies may have resulted from winter burials.

In the museum of Mesa Verde National Park are a number of well preserved mummies typical of those found in the Mesa Verde area as well as in other parts of the Southwest. To a few of the visitors they are a bit gruesome, but most people enjoy the mummies more than any other ancient objects in the museum. This is well evidenced by the fact that glasses on exhibit cases containing mummies always gather more finger and nose prints than do the glasses on other cases.

The outstanding mummy in the Mesa Verde Museum is "Esther". She is the newest, having arrived only last summer, but she is already the most famous. In the short time that she has been on display she has gained a host of admirers. A surprising thing about Esther is that, being so well preserved and having a name, she has become a personality. To many people she has become almost an actual being. No one refers to her as a mummy.

"Where is Esther?" is the first question many people ask, upon entering the park museum.

"Esther is just around the corner in the second room," is the museum attendant's answer.

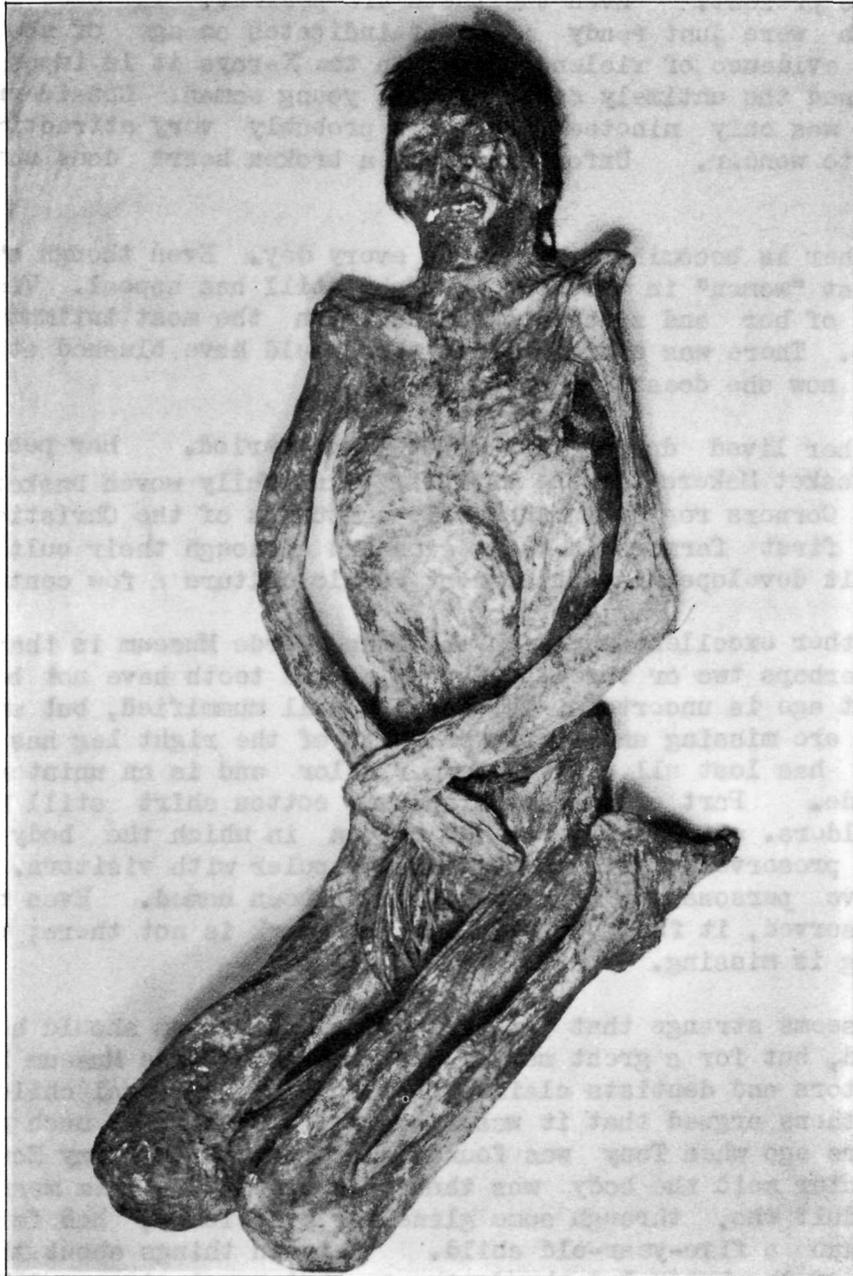
From any conversation that ensues, no listener would suspect that Esther is only a mummy. She was found in a cave in Falls Creek Canyon, nine miles north of Durango, Colorado. The cave was excavated in 1938 by Earl Morris, archaeologist of Carnegie Institution of Washington, D.C. Esther had been found shortly before the formal excavation, but she was turned over to the Carnegie Institution and has been loaned to the Mesa Verde Museum. The cave, located at the base of a high cliff, was very shallow. In the back was a deep, well-protected cleft in the rocks, filled with dry trash and earth. There, under the protective covering that had kept her intact for at least 1700 years, sat Esther.

Often when a mummy is found someone calls it a name and that name sticks. We will never know the name the woman had in life, but in death she has become Esther. With her in the crevice was the mummy of a young man now known as "Jasper". Just what relations existed between Esther and Jasper is not known but even in death they knew no privacy. Seventeen other bodies were buried in the same spot. Out of all these burials, Esther was in the driest place, so her body was the best preserved of the entire group.

Archaeologists who have seen Esther feel that she is the most nearly perfect mummy that has been found in the Southwest. The skin over the entire body is unbroken except for a small patch on each leg just below the knee. The skin is dried and shriveled, and as hard as weathered rawhide. In color it is a light brown but in some places there is a warm reddish-brown tone that could have been the natural color of the young lady's skin 1700 years ago. Esther weighs only sixteen pounds. In life she was about five feet, three inches tall, so she must have weighed over 100 pounds. This is a striking demonstration of the fact that the human body is 85 or 90 percent water.

Some people are inclined to feel that Esther died in agony because her face is set in a horrible grimace. The tongue is extended and is tightly clenched between the teeth. The right eye is open but the left one is almost closed. The left side of the mouth is drawn up in a leer. The face is such as anyone can make by extending the tongue, biting down on it, squinting the left eye and drawing up the left corner of the mouth. It is the face Esther probably would make at curious onlookers if she were to come suddenly to life.

The Basket Makers and the Cliff Dwellers usually buried their dead in a fully flexed position: the arms folded across the chest, and the legs tightly drawn up against the body. Esther is only partially flexed. The arms are folded across the stomach, with the left hand grasping the right wrist. The lower limbs are bent slightly forward at the hips; with the lower legs bent tightly back against the upper legs. The head, turned slightly to the left, is covered with a thick mat of short hair. Basket Maker women usually wore a short bob, their hair being needed for ropes. The men sometimes wore their hair long, braided into an elaborate coiffure. Esther's only garment is a small apron of juniper bark held by a yucca fiber string about her waist.



THE GLAMOROUS ESTHER

It is interesting to speculate about the cause of this young woman's death. No definite conclusions have been reached. Complete X-rays have been taken of her entire body but no evidences of violence are visible. Every bone is intact and no foreign bodies such as arrow or spear-heads are present. Even the teeth are perfect. The fact that the wisdom teeth were just ready to erupt indicates an age of about nineteen. Since no evidence of violence shows in the X-rays it is impossible to say what caused the untimely death of this young woman. Considering the fact that she was only nineteen, and was probably very attractive, one is tempted to wonder. Unfortunately, a broken heart does not show in an X-ray!

Esther is becoming more famous every day. Even though she is one of the oldest "women" in the Southwest she still has appeal. Visitors stand in front of her and speculate endlessly on the most intimate details of her life. There was a time when Esther would have blushed at things they say, but now she doesn't seem to mind.

Esther lived during the Basket Maker period. Her people, who are called Basket Makers because of their beautifully woven baskets, lived in the Four Corners region in the early centuries of the Christian Era. They were the first farmers in the region and although their culture was very simple, it developed into the great Pueblo culture a few centuries later.

Another excellent mummy in the Mesa Verde Museum is that of a small boy of perhaps two or three. X-rays of the teeth have not been taken so the exact age is uncertain. The body is well mummified, but small patches of skin are missing and the lower part of the right leg has disappeared. The skin has lost all of its former color and is an uninteresting dull gray shade. Part of a small slip-over cotton shirt still hangs around the shoulders. Several pieces of cotton in which the body was wrapped are well preserved. This mummy is not popular with visitors. It has such a negative personality that it has never been named. Even though it is well preserved, it fails to click. The spark is not there; that certain something is missing.

It seems strange that an archaeological museum should house a problem child, but for a great many years the Mesa Verde Museum had "Tony". Some doctors and dentists claimed that Tony was a normal child of four or five. Others argued that it was a cretin, or dwarf, of much greater age. Many years ago when Tony was found in a crevice in Mummy House, a well-known doctor said the body was that of a cretin. This meant that Tony was an adult who, through some glandular deficiency, had failed to grow larger than a five-year-old child. Certain things about the formation and size of the bones led the doctor to that conclusion. Other doctors were consulted and immediately there was dissension, some arguing that Tony was a normal child. For years the argument continued until at last Tony was taken to a dentist. On that day the mummy became a child of five years. The X-ray showed the six-year molars in their normal place in the jaw bone, almost ready to erupt.

Tony is only a fair mummy. The legs are missing and some of the skin is gone from the face. The torso, however, is in good condition, with the internal organs well preserved. The sex of this mummy is not known, even though the name indicates that the child was a boy. Tony is only a nickname, however. Originally the mummy was christened "Antoinette".

In 1935, the mummified head of "The Old Man" was found. The condition of the bones indicates decapitation. For some reason the head was cut from the body and buried by itself. Over it was a willow mat and a turkey feather robe, and beside it was a mug. It seemed to be a perfectly normal burial - except that the body was missing! This perplexing burial was found in Adobe Cave, a very shallow opening at the foot of the cliff near Mug House, a large cliff dwelling. This mummified head is in good condition except that the face is somewhat contorted due to pressure in the grave. Practically all of the hair is still in place. "The Old Man" was a Pueblo Indian, not a "Basket Maker", for the skull is broad and is decidedly flattened from the pressure of the hard cradle board. Since the burial was found so near Mug House, it seems safe to assume that he once lived there. It is impossible to determine whether decapitation took place before or after death.

One of the interesting features of this mummified head is the definite evidence that it was once very thickly populated. The hairs are covered with hundreds of little silvery specks. They are nits - louse eggs! And if the scalp were searched very carefully the mummified lice themselves probably could be found. "The Old Man" was a serious menace to the comfort of his neighbors. Perhaps they resorted to a very drastic method of getting rid of the infestation!

These are excellent examples of the mummies that are found in the ruins of the Southwest. They hold a peculiar fascination. To a few people they are morbid and ghastly. To many, however, they have a certain warmth, for they are the nearest approach to the ancient people. When viewing Esther, one need only remember that there, minus the moisture and the spark of life, is a Basket Maker woman. The moisture could be replaced easily - a thorough soaking in a tub of water would do that. Then if, by some strange alchemy, the spark of life could be restored, this young woman of seventeen centuries ago would arise and speak. No one would understand her, though, and Esther would be terribly embarrassed, so the experiment may as well be dropped.

Mummies, because of this human touch, will always be the most interesting reminders of the ancient inhabitants of the Southwest. They have come to us solely because of the natural dryness of the region. The air is dry; the earth is dry, and the great caves where sorrowing relatives sometimes buried the dead are often exceptionally dry. Natural mummification, or dehydration, was the result.

Visitors to the region often notice the dryness. Occasionally some suffer from nosebleed, because the membranes of the nose dry out and become brittle. Their lips crack, and their hands get dry and rough. They fail to realize that they are in the first stages of mummification!

THE WHITE SANDS

By Tom Charles,
Former Custodian,
White Sands National Monument.

Of all the places in the world to look for a skiing club, you would think the last would be the White Sands National Monument, in New Mexico. This area, near Alamogordo, is in the heart of a semi-tropical desert where snow is practically unknown. Still they have a Summer Skiing Club in the town of Mountain Park, near Cloudcroft, from where skiers go to the nearby White Sands for practice on summer moonlight evenings. They get satisfactory runs of 100 to 150 yards and the members say that it is a 100 percent practice ground for winter skiing.

But summer skiing is not so surprising to those who have even a passing acquaintance with the White Sands. The area is known as the land of contrast and contradiction. All over the world it is the "White Sands" and yet, strictly speaking, there isn't a particle of sand in it. It is pure gypsum. If heated to 165 degrees it becomes Plaster of Paris, and then can be molded into plaques, picture frames, and candle sticks. When lightning strikes a sand dune and calcines the sand in its path, it is entirely logical to believe the story that moisture has turned that calcined gypsum into solid rock, and that it is one place in the world where we may have the image of the lightning bolt in stone!

Recently a transportation company published a picture of the Sands under the caption, "America's Sahara", yet in 90 percent of the area there is water within 18 inches of the surface of the ground. Antelope and other wild animals dig their own water wells. The ordinary gray field mouse takes on a coat of ermine, as a measure of protection. This feat is so unusual that now the little mice rate posts in many of the larger museums of the country. The common roadside flower, four-o'clock, is different in the Sands from any place else on earth. So you can see that the White Sands National Monument is where you ski in summer; where sand isn't sand; where desert isn't desert; where the gray mouse is white, and the whole thing is in reverse. Even golf is a bit different, for the balls are painted black.

This "Sahara" is a place where heat-worn city residents congregate to "cool off" on summer evenings; where comely maidens and beach-brown Adonises, dressed in bathing suits, dig and play in the cool damp sands while modest matrons lounge barefooted and "beach bathe" or "sand bathe" on one of America's most unusual and bewitching "beaches". It is always cool by the time the long shadows of the hottest days of summer have disappeared; a wrap is comfortable in the evening. Even the tiny white gypsum crystals are said to be the product of rapid evaporation and therefore are children of the desert. The scarcity of plant life is not due to the shortage of water, but to the absence of nitrogen and other necessary elements. So with plants as with everything else, the whole area seems to be contradictory.

High, over-towering sand dunes, wind-rippled, curved, and coved, meet you on every side as you proceed along the winding road that leads you back nine miles into the heart of the Sands. While a rather turbulent storm may occur on the top of the dunes, and sand may "boil" to an elevation of two or three feet, the wet, cool sand never rises much higher than that. The areas between the hills are practically free from the movement of sand. So here in the heart of the "Sahara" you will be free from sand storms. Even our sunsets are not the common mixture of rainbow colors. Here the Great Pastel Painter combines the best of the usual Southwest sunset with the florescence of gypsum, the deep blue of the San Andres, and the dark shadows of the sands against the snow white hills. What a picture!

What fun to follow the legends of lost carretas of the early Conquistadores. One of the old hand-hewn cottonwood ox-carts is now in the headquarters museum with a miniature replica tucked under its huge wheels. The original was recently found in the north end of the monument by Watson Ritch. How long it had been there no one knows; where it came from is as great a mystery. It was far from the well-beaten paths of the early day explorers and apparently had been covered under one of the sand dunes for the 56 years that Watson Ritch had lived in that vicinity. It could have been the handiwork of some unfortunate salt vender who was gathering salt from the flats north of the sands in the early part of the 19th century. The fact that Mr. Ritch has found parts of two different carretas of similar type and pattern seemingly gives credence to the legendary yarn that when the Piro Indians were driven from Gran Quivira in the latter part of the 18th century and were making their exodus down the Rio Grande, through the Jornada del Muerta, or Journey of Death, they were attacked by plains Indians just west of Rhode's Pass. The Piro Chief and his beautiful daughter, according to the legend, crossed the mountains to the White Sands in the hope that they might escape on this side of the range. They were never heard from again.

The story is almost on a par with that of Pavla Blanca, the White Wraith, the beautiful woman who comes to the Sands at dusk each evening dressed in the flowing robes of her wedding gown; searching for her lover who was lost and buried in the White Sands. Don't follow her. One look at her radiant beauty is enough for a lifetime; twice is a misfortune; the third time is death. "My father saw her twice," said Pedro, an early day guide. "Never could he go back to the Great White Sands again."

But why waste time on the mythical, legendary things at the White Sands? The thing is wrapped in the woof and warp of unbelievable events. Who made the "giant's tracks"? There they are, 22 inches long. Pictures have been taken of them in the solid rock. A dozen men have seen them. They appear to be human footprints. And where do the fish come from? Why is it that water holes made by ranchmen for their livestock should mysteriously fill with little fish? Some years ago Frank



TANDEM ON SAND SKIS



A NEW USE FOR THE "BLACKBALL"

Andregg, who still lives near the monument, dug a water hole at the edge of the sands for his goats, and within a few weeks there were dozens of fish in it. Mr. Andregg believes that they came in from the bottom. Last year we had a small hole out in the heart of the sands where we showed visitors the shallow water level. One day a fish about an inch and a half long appeared in that hole and lived there for ten days. Where did it come from? White Sands is the land of mystery!

Army records say that in the eighties two companies of negro soldiers fought all day long in the "arena blanca". Paul I. Wellman, in his *Death in the Desert*, recounts the vengeance foray of Chief Nana, 81 years old and rheumatic, who swore retaliation against the white man for double dealing which cost the life of Chief Victoria. Nana and 15 braves came up from Mexico in July, 1881. Their first engagement was at the headwaters of Dog Canyon, some 17 miles to the southeast, where White Sands is to get its domestic water. On the second day three citizens were killed at the point of the sands; on the third day the fight was in "arena blanca"; on the fifth day they took up camp in Hembrillo Canyon, that rugged, natural fortress which looks down from the west upon the White Sands.

It was on April 17, 1880, that Companies H and L of the 9th Cavalry attacked the Apaches in Dog Canyon. On the morning of the next day Almer Blazer, who still lives at the Blazer Mill on the Mescalero Apache Reservation, met the remnant of those troops after their engagement with the Apaches on the winding trail of the "box". According to Mr. Blazer, there were only 12 of the 200 horses and mules left in the possession of the soldiers. The Indians used bows and arrows, and rolled rocks down upon the enemy in the narrow pass of the hills. They had led the soldiers into a trap which proved to be a massacre, not an engagement.

So it makes little difference whether you be artist, ecologist, geologist, botanist, newsman, or historian, the White Sands is still a virgin field. Its mysteries are dark and deep. The water is red, in lakes formed by rain. Why? An alga, you answer. True, we concede. But why is it here, and where else do you find it? It takes time to answer such questions. It takes prowling, plodding, detail men, and they are beginning to come into the area. As for time, there seems to be no shortage. Mathematicians tell us that with the present northeast movement of the sands, about 8 or 10 inches a year, it will be over 100,000 years before the town of Alamo Gordo is reached, 18 miles away.

ECONOMICS OF BIRD BANDING

By Natt N. Dodge,
Naturalist,
Southwestern National Monuments.

To some persons, the whole program of national parks and monuments may appear in the light of an experiment in idealism, unjustifiable from the economic standpoint, an expensive luxury subsidized by the taxpayer with Park Service employes as parasites upon farmers and businessmen. This viewpoint is largely due to a lack of appreciation of the economic values of human relaxation and inspiration. It is difficult to credit the mental stimulus derived from the sight of the Grand Canyon, Old Faithful Geysers, or the glorious autumnal coloring of hardwood foliage in the Great Smokies with the inspiration for a successful sales program or a revolutionary idea in making bricks.

There are today state legislative bodies which oppose the establishment of national parks and monuments because of waterpower, mineral, grazing, or timber resources thereby tied up, failing to grasp the economic significance of ever increasing hordes of tourists attracted by outstanding features of scenic, historic, or scientific interest which such reserves protect and publicize. Comparable to the national parks idea in the intangibility of its value is the whole program of scientific research. In this unorganized but none the less real and endless quest for accurate and detailed knowledge and more knowledge, the project of making careful studies of the habits and activities of avifauna through a government-supervised project of bird banding is of relatively minor importance. The possibilities which bird banding offer for obtaining enlightenment regarding little known activities of feathered denizens of forest and canyon have appealed strongly to bird students and educators in the realm of natural history. Among these may be included many National Park Service field men whose work places them in a favorable position to carry on banding. Yet the time involved together with the relatively small amount of immediately useful data obtained spotlights the question of economics of bird banding. In simple language, does bird banding pay?

It is not the purpose of this discussion to attempt to show that enrichment of human life is as much an economic goal as the accumulation of wealth, the latter being merely a means toward the attainment of the former. For the purposes of this paper, then, the customary meaning of the word "economic" will be used, and a brief outline given of the several projects in which bird banding, although still in its infancy, has been of value in preventing loss of money or of bringing a failing industry to a state of convalescence.

In this day of conservation-conscious governments, and nature study courses in the majority of our schools, it would not seem necessary again to bring to the attention of the public the immense importance of bird life to the economic structure of a nation. (5) Yet the writer is con-

tinually being reminded that the tragic story of the extermination of the passenger pigeon and the heath hen, and the present pitiable status of the ivory-billed woodpecker and the trumpeter swan has never permeated the consciousness of the average American. Many small boys still spend their Saturdays shooting song birds with air-rifles; homeless cats roam the fields; and unenlightened farmers continue to blast every hawk or owl that comes within shotgun range, proudly hanging the carcasses on their fences, monuments to their marksmanship and ignorance.

Gasps of surprise and disbelief arise from audiences of school children over the proven statements of Michelet and Forbush (5) that "If it were not for birds, no human being could live upon the earth, for the insects, upon which birds feed, would destroy all vegetation"; "An acquaintance with birds of the farm is as important to the farmer as is a knowledge of the insects that attack his crops"; and "Were the natural enemies of forest insects annihilated, every tree in our woods would be threatened with destruction, and man would be powerless to prevent it."

Buried within the files of scientific reports must be the results of bird stomach-content studies (11) which show that in one meal a mourning dove consumed 9,200 seeds, of which 64 percent were species noxious to man, and that a nestling robin eats more than its own weight of insects in one day, for laymen universally express an ignorance of these facts.(4). Fortunately such truths long ago brought about the passage of laws protecting our birds and effectively stopped their indiscriminate slaughter.

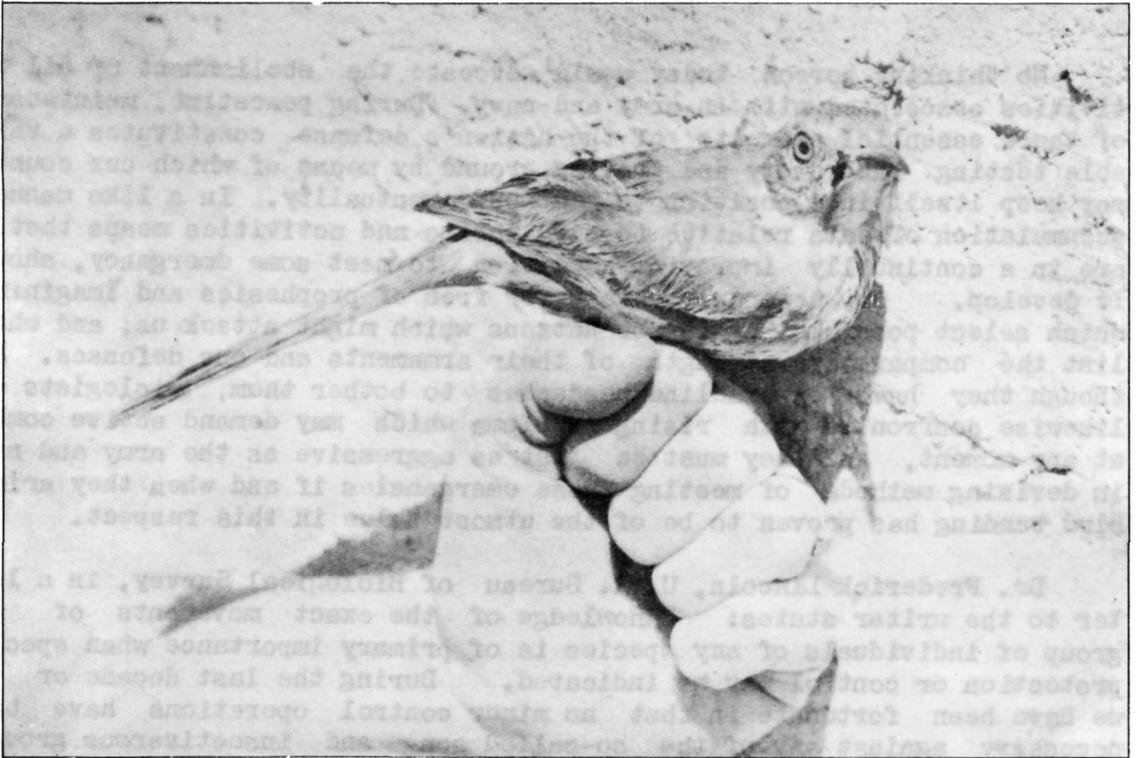
The history of conservation shows that slow but steady improvement in game management and wildlife control has developed from a slow but steady increase in knowledge of plant and animal requirements and relationships based upon an increasingly careful and accurate technique of wildlife study. Stages of advance in wildlife conservation are as follows: (6) hunting restrictions (which are recorded from Biblical times); predator control; establishment of refuges; artificial propagation; and control of environment. The last and most effective requires, for the control of all environmental factors, in the words of Ivey (6) "the highest type of scientific research and technically qualified administration of regulations based thereon." Bird banding is scientific research, and if the requirements of an expanding civilization with its dust bowls and its exterminated species of wild fowl and fur bearers demand a greater accuracy of knowledge of wildlife ecology to preserve the birds whose value to that civilization is without question, and if bird banding can help us to attain that knowledge, it is not only desirable but it is economically indispensable.

The birds of today face a danger even graver than that occasioned by the commercial hunter of the past. Streams polluted with waste from factories, nesting grounds drained and turned under by the plow, forests felled by the axe or dissipated in the smoke of fires, coastal waters

fouled by oily waste pumped from the bilges of passing ships, all contribute to the destruction or the rendering uninhabitable of environments upon which wild fowl depend for food, shelter, and nesting grounds; those factors upon which their very existence rests. Ivey (6) estimates that the decrease in wildlife due to direct killing and destruction of habitat threatens an annual return of one billion dollars. It is only in recent years that importance of regulating and protecting these environmental features has been realized. In the case of migratory aquatic game birds, banding has been the means by which the facts were determined, and accuracy of these findings is borne out by effectiveness of recent laws and conservation activities based upon them.

It should be thoroughly understood that bird banding in itself is not a revolutionary technique displacing all hitherto practiced methods of acquiring wildfowl information. It is simply an additional device which adds innumerable possibilities of refining bird study. Briefly, it enables scientists to learn of the activities of individual birds in addition to studying the activities of the masses. It is comparable to the liberation of an ethnologist confined to the tower of a metropolitan skyscraper who has been forced to study the movements of people by the observation of their mass activities in traffic below. Released, he is enabled to mingle with the crowd and to select individuals whom he may follow about as they carry on their daily customs and activities. Many deductions based upon his observations from the tower will be found entirely erroneous when viewed in the light of the detailed records kept upon individuals. But both are necessary to give the correct picture.

Since the United States Biological Survey took over the supervision of bird banding activities in this country in 1920 (7), the problem of the disappearing wild duck population has been solved. By means of bands, movements of thousands of individual ducks have been followed, migration routes charted, breeding grounds located and potentialities measured. The existence of four major flyways (8) has been accurately determined, and the grave consequences of over-shooting, draining of lakes and marshes, and other activities of man which have unfavorably influenced environment have been correlated with the rapid decrease in ducks. (10) As a result, legislation has been enacted and a definite rehabilitation project put into effect with the establishment of refuges, development of swamps and resting areas, reorganization of game laws, fighting of certain diseases, planting of necessary foods, and other conservation activities carried out which have already resulted in a definite check of the decrease, and, latest census releases indicate, actually turned the tide with a slight increase in numbers over the previous count. If duck banding has established a permanent basis of control of migratory aquatic game birds, it has not only prevented the vast economic loss resulting from violent upset of the biotic balance following the destruction of millions of ducks, but it has saved for sportsmen an outdoor pastime of considerable economic importance when the manufacturers of special clothing, arms, ammunition, and similar supplies and equipment which it supports are considered. Four naturalists are now continuously in the field (12) on this project which is the major economic success credited to bird banding to date.



BANDED AND READY FOR RELEASE



BANDED CHICKADEE RETURNS FOR "HANDOUT"

No thinking person today would advocate the abolishment of all activities associated with an army and navy. During peacetime, maintenance of these essential elements of the nation's defense constitutes a valuable testing laboratory and proving ground by means of which our country may keep itself in a position to meet any eventuality. In a like manner, accumulation of data relative to bird habits and activities means that we are in a continually improving condition to meet some emergency, should it develop. Our newspapers are never free of prophesies and imaginings which select possible aggressor nations which might attack us, and which list the comparative strength of their armaments and our defenses. Although they have few headline headaches to bother them, biologists are likewise confronted with rising problems which may demand active combat at any moment, and they must be just as aggressive as the army and navy in devising methods of meeting these emergencies if and when they arise. Bird banding has proven to be of the utmost value in this respect.

Dr. Frederick Lincoln, U. S. Bureau of Biological Survey, in a letter to the writer states: "Knowledge of the exact movements of any group of individuals of any species is of primary importance when special protection or control may be indicated. During the last decade or two we have been fortunate in that no minor control operations have been necessary against any of the so-called song and insectivorous groups. Such are, however, to be anticipated. For example, the common robin has increased so rapidly under federal protection that it may sometime become necessary to take steps to protect small fruit and other crops against their depredations. Knowledge of the actual birds responsible for the damage will at such times be invaluable. The Herring Gull is another species that has made inordinate increases under the protection of federal law, and in some places they are responsible for considerable damage. By controlling the number of eggs that are allowed to hatch, it is possible to regulate the population of this bird and if such operations are concentrated in the colonies that supply the birds involved, all interests are properly served. Other species of gulls eventually enter this picture as well."

Lack of space prevents the citing of more than one or two specific instances where bird banding has produced results of definite economic application, so these are limited to the following which are reported by Assistant Biologist Johnson A. Neff of the Sacramento, California, office of the U. S. Biological Survey. In a letter to the writer, Mr. Neff reports: "In the huge triangle formed roughly by Stockton, Sacramento, and Antioch or Pittsburg, and Vallejo, damage to crops by blackbirds is severe in some locations. Upon inspecting sunflower damage near Brentwood, I found that the population was largely Agelaius tricolor. Now this species does not nest abundantly in that immediate area. On the other hand, banding of some 12,000 nestling tricolors during the last six years in various marshes in Merced County has furnished definite evidence that the major fly-way for these birds is northwesterly into the immediate area where the sunflower damage was occurring. Here two factors seem clear. First, the breeding area of the blackbirds doing

severe damage was nearly 100 miles south; second, from even the economic standpoint alone, attempting to control blackbirds on the sunflower-producing ranch was utterly impractical under the apparent evidence that we could control on a few hundred acres (of breeding ground) possibly most of the blackbird population of two or three counties."

Mr. Neff also cites the case of Gambel Sparrows which, in the interior valleys of California, "may destroy every ornamental or truck plantlet that germinates between November and March in the ranch garden. Since this is definitely a migratory sub-species, it was my first opinion that succeeding waves of migrating birds would continue to flood any certain specific ranch or district, and that the only method of preventing damage was by repellents or by plant cover frames. Some banding done under my supervision and discussion with a number of Southern California banders, however, has developed the fact that very often as high as 35 or 40 percent of the Gambel Sparrows return each year to the same station. Such percentage might be said to justify control measures in such locations, if the damage were severe enough to warrant the destructive methods." In this case the fact, determinable only by banding, that the same individuals remained throughout the year rather than successive waves of migrants passed through, as was thought before banding was carried on, put an utterly different aspect on the matter and indicated an entirely different and much less expensive means of control.

The instances just cited are indicative of the importance which facts ascertainable only by banding may play in establishing control methods in cases of very definite economic importance. The illusive feature in the whole project of banding lies in the fact that the banding of a certain species may go on for years, the knowledge obtained therefrom being of no apparent value whatever and the time apparently wasted, when suddenly the species comes into the economic spotlight and all of the knowledge about its habits becomes of crucial importance in immediately establishing methods of protection or control, as the case may be. If this information had to be obtained after the emergency developed, it would be not only costly, but probably too slow to do any good.

For several years, a number of field men of the National Park Service have been actively cooperating with the Biological Survey in the nationwide program of obtaining information regarding the habits and activities of birds through banding. In the Southwest, banding has been carried on in Grand Canyon National Park, Zion and Bryce Canyon National Parks, and in nine monuments of the Southwestern National Monuments group. The greater part of this work has been done primarily to determine specific facts regarding the local habits of certain species in order to answer visitor questions. More park and monument visitors express an interest in birds than in any other natural history subject except, perhaps, flowers. At Grand Canyon National Park, such questions arise as, "Do birds cross the Grand Canyon, or does the Canyon act as a barrier to many mammals as well as to birds?" "If birds cross the canyon, do they fly directly across, or do they follow down one slope and up the other?" "Do birds use the canyon as a flyway, following the winding course of the Colorado River as a travel route?" These and many problems of a similar

nature face the interpretative staff of every Park Service area, and no technique except banding supported by other approved methods of bird study, has yet been devised to answer them.

Although the National Park Service is not set up to sponsor exhaustive programs of primary research, the demands of the interpretative program, together with the policy of providing visitors with accurate and complete answers to their questions, require a certain amount of actual fact-finding activity in the field. Interpretative personnel must be competent accurately to identify local species of flora and fauna in the field, as much to answer visitor queries as to assure a sound basis for observation records and such required reports as the annual wildlife census. Bird banding, which enables the station operator to handle and closely scrutinize individual birds, is far superior to field observations as a means of familiarizing personnel with identification details.

As a conservation agency, the National Park Service has an enormous sphere of influence. Minds of visitors in parks and monuments are open to explanations of approved conservation methods and the basic scientific reasons for them. Trained members of the Service staffs are in demand as outside speakers before service clubs, student assemblies, and hobby groups, such as garden organizations, in towns and cities near parks and monuments, and an important opportunity is provided for spreading the gospel of conservation. An enormous amount of good may be accomplished in bringing to the attention of local farmer groups the injury done to their own interests by the widespread practice of indiscriminately killing hawks and owls. Operation of banding stations keeps an interpretative staff up to date on these matters as well as providing bands and similar supplies and equipment useful as illustrative material.

There are a number of minor ways in which a small bird-banding project is indirectly of aid to the interpretative program of a park or monument. Captured birds prove valuable subjects for photographs, otherwise very difficult to obtain, for making projection slides for illustrating campfire and hotel talks. Data obtained by banding is of assistance in supporting facts for observation records and the wildlife census report. Park Service areas are unique in providing wildlife relationships but slightly effected by the presence of mankind where bird banding may be carried on by qualified operators trained to utilize data obtained. Similar areas outside of the Service are so inaccessible as to provide little opportunity for banding stations. Findings obtained in Park Service areas should eventually be of importance in supporting or disproving theories regarding primitive regions. Trained personnel and the permanent basis of Park Service stations make possible the continuance of a project which, when operators are privately employed, may be terminated at any time. Thus the knowledge obtained should be of more value to the Biological Survey's nationwide program. Since records acquired from the entire nation, and also from bird banding station operators in Canada (where the project is under the jurisdiction of the

Bureau of National Parks) are available through the Biological Survey, much assistance may be obtained by Service personnel to be brought to bear on local problems.

A recent communication from Park Naturalist M. V. Walker of Zion and Bryce Canyon National Parks stated, in part: "Bird banding was started here by Mr. Clifford Presnall late in 1934 and was continued off and on until January, 1937 ... That the project of bird banding is of inestimable value to the bander himself is perhaps its best point of argument, for one who carefully and scientifically carries on such a project is bound to learn much concerning species, habits, migration times, and food requirements." However, Walker warned, banding takes considerable time which often cannot be spared from other duties, and identifications must be accurately made or the work is more than useless.

Acting Park Naturalist Louis Schellbach wrote that banding has been carried on continuously at Grand Canyon National Park since 1932, yielding much new and valuable data concerning local problems and migration routes in the Great Basin. He said: "Banding is carried on at all seasons of the year as time and opportunity permit, aided by CCC personnel when available and performed mostly by interested park residents. In a region formerly thought deficient in bird life, through bird banding stations and observation records Grand Canyon National Park is producing some interesting results, records, and material for further study."

As at Grand Canyon, much of the banding in the Southwestern National Monuments is accomplished by wives of the personnel, and other individuals who are especially interested and have time available. The greater portion of record keeping detail is also accomplished by persons not on the Park Service payroll, field men spending only the time necessary to verify identifications and to check and transmit records and reports. The Southwest, therefore, makes its contribution to the bird banding program with a negligible use of government time.

In conclusion, it is well to remember that, although true scientific research may appear to be a waste of time, the values of these records are "cumulative and unpredictable". Parasites found in smears of blood taken from birds captured in banding traps indicate that birds may possibly act as host carriers of human diseases. Dr. C.B. Worth of the Rockefeller Institute for Medical Research is conducting exhaustive studies on this important subject this winter. The homing instinct of cowbirds (2), five out of 23 of which returned a distance of over 1,000 miles in from 14 to 30 days, indicates the possible value of this species as message carriers in time of war. As yet, possibilities in these secondary values of bird banding may only be guessed at, the primary ones, according to Dr. Lincoln (7) being, "from the viewpoint of the Biological Survey, the solution of problems concerned with the distribution and migration of North American birds. In this, every station operator is a potential factor. A great many problems, however, are ready at hand for each cooperator, any one of which, when worked out to its logical conclusion, may furnish the basis for an important contribution to ornithological science".

And the matter of the economic importance of any human activity, although customarily associated with the accumulation of wealth, might be considered thoughtfully in the terms of Henderson (5), "Whatever tends to make the world happier and better, is of direct material value".

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THE STONE LIONS OF COCHITI -- AND OF ZUNI

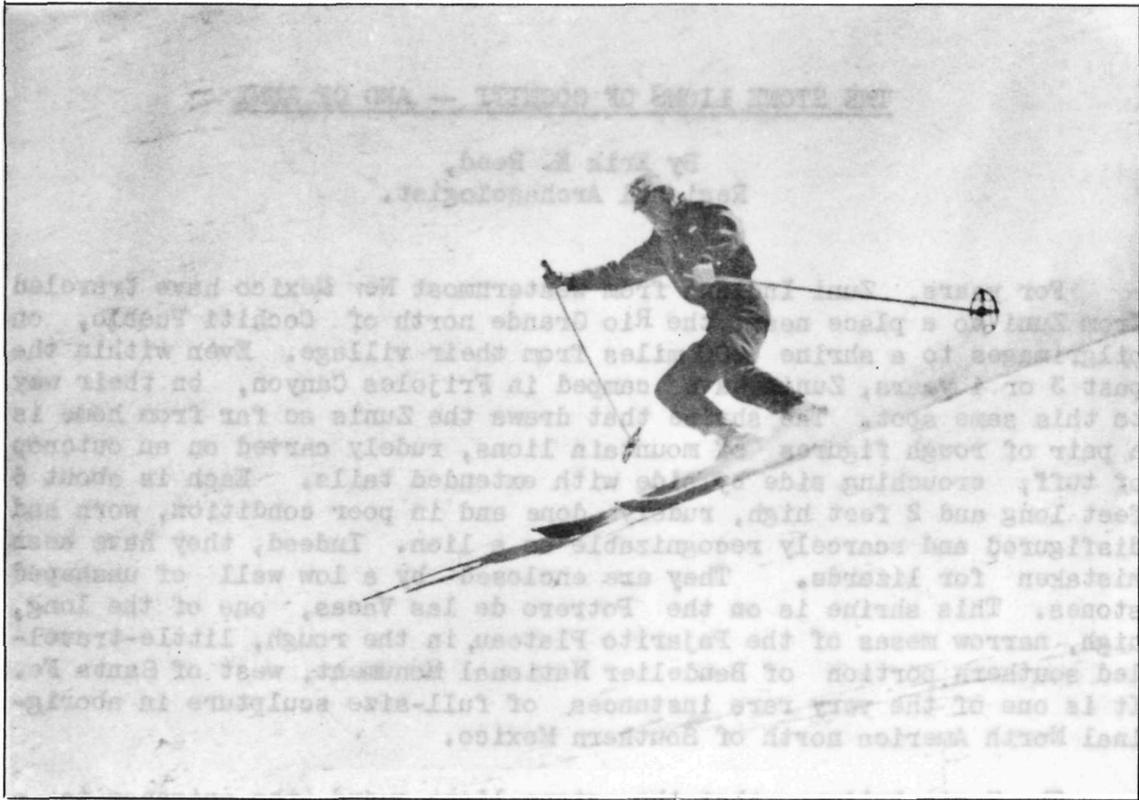
By Erik K. Reed,
Regional Archaeologist.

For years, Zuni Indians from westernmost New Mexico have traveled from Zuni to a place near the Rio Grande north of Cochiti Pueblo, on pilgrimages to a shrine 200 miles from their village. Even within the past 3 or 4 years, Zunis have camped in Frijoles Canyon, on their way to this same spot. The shrine that draws the Zunis so far from home is a pair of rough figures of mountain lions, rudely carved on an outcrop of tuff, crouching side by side with extended tails. Each is about 6 feet long and 2 feet high, rudely done and in poor condition, worn and disfigured and scarcely recognizable as a lion. Indeed, they have been mistaken for lizards. They are enclosed by a low wall of unshaped stones. This shrine is on the Potrero de las Vacas, one of the long, high, narrow mesas of the Pajarito Plateau, in the rough, little-travelled southern portion of Bandelier National Monument, west of Santa Fe. It is one of the very rare instances of full-size sculpture in aboriginal North America north of Southern Mexico.

The Zunis believe that the stone lions guard the entrance to a place called Shipapolima, the dwelling place of the important supernatural being called Poshaiyanki. Why these rude statues in north-central New Mexico are so important to the distant Zunis is unknown. The ideas of the local pueblos about the lions seem to be entirely different.

The stone lions are important to, and venerated by, the Cochiti Indians who live only about 10 miles to the south. But to the Cochiti they do not represent, as far as is known, an entrance to the dwelling place of a god. The Cochitis call them the "sacred place of Mokate". Mokate is the panther-fetich of Cochiti hunters, and is one of the most important animals in Cochiti ritual and belief. The shrine of Mokate was used as a place of sacred pilgrimage by a secret religious society of Cochiti, probably the hunters' society. The stone lions apparently are still objects of veneration to the Cochitis; tracks of unshod horses have been seen there within the past two or three years. The lions probably were made by the ancestors of the Cochitis who occupied the nearby ruin of Yapashi, which was probably occupied from the 13th to the 16th century.

On another mesa-point further south, the Potrero de los Idolos, there was formerly another pair of rudely carved lions. One of them was destroyed 60 or 70 years ago with dynamite by some ignorant treasure-hunter. The other lion is in fair condition. The Cochiti Indians told Adolph Bandelier in the 1880's that the lions on the Potrero de los Idolos were made by the people of Kuapa (a ruin very near, and ancestral to, Cochiti, occupied during about the same period as Yapashi).



JUST OUT OF TOWN, IN OLD SANTA FE



CCC-BUILT SHELTER IN HYDE STATE PARK

GROWTH OF WINTER SPORTS

By Milo F. Christensen,
Supervisor,
Recreational Area Planning Division.

Maybe you have stood on the top of a high mountain, and felt the soft beat of rain drops against your face; maybe you have hiked over Nature's wonder trails in the quiet and brilliance of a warm summer sun; maybe you have sat under a tall pine by a stream and listened to the water on its way to the sea. But you haven't experienced some of the finer pleasures offered by Nature until, from the summit of a high mountain, overlooking a white fairyland, you have glided on skis quietly, smoothly, and swiftly down the terrain which is blanketed with soft, clean, white snow.

Until recent years, six months of winter and three feet of snow meant "holin in" for Mr. and Mrs. Average American -- hibernating like the bears. Only under necessity, and after being garbed in several pounds of heavy flannels, mufflers and other wraps, did we venture out. Until recent years, too, one has often heard the expression that Americans take their recreation "sitting down." We had become a population diseased with "spectatoritis." We applauded long and loudly the achievements of a few skilled sports professionals.

Conditions have changed. Increased leisure and expanded recreational facilities have made Americans "doers" instead of "sitters." Recreation participating statistics throughout the country indicate a marked increase in various types of outdoor activities. The greatest increase has been in the field of winter sports. Thousands of youths and adults seek the hills, the mountains, the frozen lakes, ponds, and rivers to engage in skiing, coasting, tobogganing, skating, ice-hockey, snowshoeing, bobsledding, and ice-boating. Like the golf of some years ago, many of the winter sports were considered to be restricted to well-to-do persons. But the transportation companies and the purveyors of sports equipment assisted in popularizing winter sports as a desirable form of active recreation. Newspapers, magazines, movies, and the radio have also done considerable. Many of us in sections of the country where snow and ice have been relatively scarce, found it necessary to take stock of physical facilities.

Other interesting sidelights have developed. Witness the change of life and activity in the mining communities of Ketchum, in Sun Valley, Idaho; and in Alta, Utah, 30 miles from Salt Lake City, where winter skiers have almost seven months' skiing. Both places had been booming mining towns. Millions of dollars in gold, silver, copper, and lead had been mined. As the ore petered out, residents moved on to more fertile fields. Only a few stayed to mine the little remaining ore or engage in some phase of agriculture or cattle raising. Then overnight, these almost abandoned communities sprang to life. Trains, airplanes, and automobiles brought hundreds of visitors to engage in winter sports. The

residents heralded this activity as a new bonanza. Other communities and chambers of commerce insisted that excellent potentialities were available at their own back doors. Experts were engaged to make surveys. In many cases the dominating factor was of a commercial nature. Over a billion dollars is expended annually by winter sports enthusiasts for apparel, equipment, and other incidentals.

In making a survey or taking stock of existing and potential winter sports facilities, attention also must be focused on the work of the National Park Service, the United States Forest Service, the Civilian Conservation Corps, and other federal agencies. In the western sections of the United States, many of the most desirable places for outdoor activity are on federal land. In many places, too, otherwise suitable areas are inaccessible or too far removed from the using public. Thus, a more careful study had to be made to determine which of the desirable areas would be used, if developed.

Probably the two most popular forms of winter sports are skiing and skating. Both have become exceedingly popular within the last six or seven years. Organized skiing as a sport in this country is about fifty years old, but it never had general popular appeal until about six or seven years ago. It was limited naturally on the one hand by terrain and climate; and it was limited also by an indifferent public. Previously, jumping and tournament events were the newsreel cameramen's delight, but the breath-taking nature of jumping left John Public with the impression that skis were dangerous implements. There were numerous skiers in the mountains of New England, the hilly regions of the North Middlewest, and the high snow fields of the West. But the beginning of the new ski era in this country can be set at about 1931-32, the year of the winter Olympics at Lake Placid, New York. In the following years, skiing and other winter sports won thousands of converts. These new converts demanded and got increased sports facilities. Many summer hotels in the mountains began to stay open throughout the winter. Winter inns and hotels were constructed. Snow train and snow plane services were started.

The number of ski addicts in the United States is unknown, but those numbers can be imagined from the fact that in Seattle alone there are reported to be between twenty and thirty thousand. Many of our skiers may be only "meadow skiing", or you may see them at some more "hazardous" place, poised to leap off a bank or short slope. If there are hills within easy distance, these skiers may spend a weekend in the country, stopping in a farmhouse, tourist home or cabin. If they have better than average economic resources, they may go to more remote and expensive winter resorts: From the East, to Lake Placid and the inns of the Adirondacks, Berkshires, and White Mountains; from the Middle West, to the Rockies; and from the West coast, to Mount Rainier, Lassen, and Yosemite National Parks. There are ski or winter sports clubs in almost every western college and in many cities and towns. Many employers and employees vacation in Winter instead of in Summer. You will find stenog-

raphers, clerks, lawyers, businessmen and housewives "bitten by the bug." For many years, New York State's Bear Mountain Park, one of the most popular public areas in the East, has provided facilities and equipment for thousands of winter sports addicts.

Until the last few years there have been more skaters than skiers. Skating, in a sense, is like swimming or riding a bicycle: Once you acquire the technique, you never forget it. On the frozen ponds and rivers of New England; on the lakes and bays of the north Midwestern states, or wherever there is a body of ice large enough to turn around on, rural boys and girls have felt the joy of gliding along, with winter winds a-blowing. In some cities, youths have used garden hose to flood vacant lots and fields, and then waited for freezing weather. Cities like Minneapolis, St. Paul, and Milwaukee, and Newton, Massachusetts, and others have for many years done much to provide skating rinks in their parks and on the playgrounds. Skating and ski tournaments and contests have played an integral part in numerous winter sports carnivals conducted through the Midwest during the past 20 years.

Many Americans have never seen an ice rink, nor owned a pair of ice skates. They may have heard Granddad, who was reared "back east", or "up north", tell of the fun he had as a boy; of some of his adventures on "rubber", or thin ice. But times have changed since Grandpa's heyday. Mechanical refrigeration, the movies, and the much publicized ice shows have made the entire country skating conscious. New contrivances have made skating rinks possible in any climate at any time of the year. Ice hockey, which has been called the fastest game in the world, has also done considerable to stimulate interest in skating. It is estimated that about 17,000 pairs of rocker, or figure skates, were sold in this country in 1938, in addition to about a quarter of a million tube skates.

Thousands of persons neither skate nor ski, yet derive enjoyment from tobogganing, coasting, snowshoeing, iceboating, or possibly hiking in the snow. The most significant fact is that the individual derives a certain satisfaction from whatever he or she does. This effort, in many cases, is for exercise, but generally it is for good wholesome fun. Those who plan winter sports facilities for this new group of recreationists must recognize that everyone does not like to do the same thing. A variety of winter sports recreation opportunities and facilities multiplies the individual's interest and participation.

The Southwest has shown increased interest in winter sports activity. Winter sports clubs and other forms of group organization have sprung up in many communities. Membership in these groups is usually open to the public, upon payment of a small fee. Meetings are held to promote interest in development of new facilities, raising funds for ski tows, making areas more accessible by improving and keeping roads cleared of snow, or organizing contests and tournaments. Occasional parties and other socials are planned. In the Santa Fe of four years ago

there was no winter sports club; there were no skiing or coasting facilities except on a very small scale. Attempts had been made periodically to construct a skating rink. A handful of ski enthusiasts organized a winter sports club. Interest spread. The National Park Service and the State Park Board developed a ski run and ski field in Hyde State Park, 7 miles from Santa Fe, in the Sangre de Cristo Mountains. The work was done by the Civilian Conservation Corps. Use became so extensive that the field was extended. The C.C.C. now is completing a plate glass fronted Lodge, facing the ski area. The Lodge has three lounges, each with fireplace. There is a lunch-room, toilets, lockers, and a combination room that can be used for first aid and for ski-waxing. There is a flagstone terrace immediately in front of the building, with seating accommodations for 200 people. This terrace is enclosed by a guardrail, at the base of the ski run. The Lodge will be for year-round use.

A permanent ski tow also is being installed. The Winter Sports Club contributed approximately \$1,300 to the State Park Board toward the purchase and installation of this equipment. The tow, like all other facilities in the park, is for general public use.

Only 60 miles away, in Albuquerque, is another enthusiastic winter sports organization. Excellent skiing facilities have been developed by the United States Forest Service in the nearby Sandia Mountains. The Forest Service also has developed winter sports facilities in other New Mexico areas, such as near Taos, Ruidoso, and Las Vegas; and near Flagstaff, Arizona. Less than 300 miles south of Flagstaff, and only six hours away by automobile, are hundreds of seasonal residents and tourists who spend the winter "summering" near Tucson and Phoenix where oranges and grapefruit are being harvested. This short distance between the irrigated desert country, with its citrus fruits, and the snow covered mountain area with its winter sports, provides an interesting contrast to Southwest life.

The idea of snow sports in California comes to many recreation enthusiasts with a bit of surprise. This "Sunshine State" does not, in one's imagination, lend itself to such developments as ski huts, snow trains, and an American St. Moritz. But there are snow covered mountain ranges over a mile high in both Northern and Southern California, and many Winter sports areas have been developed.

So let it snow, let it blow. Let it be cold and crisp. Six months of approaching winter with its three feet of snow hold no terror for us now. It means lots of fun, exercise and recreation. No longer do we Americans have to take our recreation "sitting down" - unless it be while skating on the ice or skiing on the snow.

SAVE THE RUINS!

By Dr. Aubrey Neasham,
Regional Historian.

One of the evidences that we, as a nation, have come of age is in the preservation of our heritages from the past. Together with the concept of the conservation of natural resources, we have begun to realize that it is our duty to preserve historic sites and buildings. These, as evidences of our past culture, are held in trust by us for the enjoyment and enlightenment of this generation and those of the future. Preservation as applied to historic sites and buildings means to keep them from injury; to save them. It does not mean adding to the site or building, or taking away that which is historic. By the same token, the removal of non-historic accretions is implied.

Some people object to preservation work. They argue that an old ruin does not present a true picture of the historic site. In this they are correct. There are good reasons, however, why it is not within our province to add our own workmanship to an historic building to make it look as it did in historic times. Foremost, perhaps, is our desire to get away from the idea of deceiving the public. Historic sites and buildings are evidences of material culture. The more we know about how our ancestors lived and about how they built, the better able we are to understand them. Their material culture should be of use to us in many instances. The best of their architecture, landscape treatment, interior furnishings and decoration, and ways of living, may well be incorporated into our own material culture of today, as ours may be, also, into that of the future.

John Ruskin summed up well the idea of preservation, especially as to the information to be gained by historic buildings, when he said: "You may make a model of a building as you may of a corpse, and your model may have the shell of the old walls within it as your cast might have the skeleton ... but the old building is destroyed, and that more totally and mercilessly than if it had sunk into a heap of dust, or melted into a mass of clay; more has been gleaned out of the desolated Nineveh than ever will be out of rebuilt Milan."

The argument is put forth by some that the visiting public goes to an historic site to get as full a picture as possible. From that standpoint, many consider it necessary to restore and to reconstruct the historic setting in full. What results is an illusion. The illusion not only affects those who see it today, but also those who will see it in the future, even to the extent that what we have reconstructed and restored may be called the work of our predecessors. Such reconstruction and restoration is not only artificial and unreal, but scientifically unsound. No matter what we may do, we cannot supply in exact detail or spirit that which was done before us.

Since Ruskin's day, we have found new methods and technique which we may apply in preserving historic buildings. Our scientists and professional men are working continually upon methods for saving materials from deterioration. The more perishable materials, always the bugaboo of preservationists, are coming within the conquest of the experts. Paper, wood, and adobe are giving up their secrets, and before many years ways will have been found to preserve them.

There are proper ways to present the historical picture in full without trespassing upon the principles of preservation. To reconstruct and restore in full is not necessary in order that the public may visualize the historic setting. Museums with their informative rotating exhibits, dioramas, murals, and other presentations, lend themselves to a variety of possibilities for telling the story of the past. If the mission, for example, must be shown as it was originally, a miniature model in exact scale may be practicable. Pictures, paintings, photographs, documents, artifacts, dioramas, and pamphlets may further tell that mission's story. How much more impressive an historic building will be, if the genuine historic parts of the site are preserved and the museum interprets the story. Not only is such a method less artificial, but the public is better able to grasp the story as a whole, through means of directed interpretation.

It is questionable whether a museum should ever be placed within an historic structure. The glass exhibit cases, dioramas, and other exhibits break the unity of the historic setting. A museum in such a place, even though it is composed of historical materials relating to the area, adds a touch of unreality. It is far better to restore the setting with authentic furnishings to show how a room or building was used and how it appeared to those who used it in its heyday, than to clutter it up with an atmosphere which is partially modern. Experts are recommending that a separate small museum be placed outside of the historic area. This does not impinge upon the historical picture and is easier to handle in a scientific manner. In some instances, the museum may be combined with administrative units, where it is felt that such a combination is desirable because of practical and administrative reasons.

The terms "preservation", "restoration", and "reconstruction" are often used loosely and interchangeably. Actually, they mean different types of endeavor. Restoration means bringing back the historic building, so far as possible, to its condition at the time of its greatest historical importance. Restoration goes hand in hand with the principles of preservation, if properly applied.

Through restoration, the mission of which we have spoken takes on a truer atmosphere. Modern accretions are removed; landscape treatment is accorded the surrounding area; and, provided the condition of some buildings is adequate, it may be possible to furnish them as they were during historic days with authentic furnishings in keeping with the uses



RUINS OF OLD SPANISH CHURCH
GRAN QUIVARA NATIONAL MONUMENT, NEW MEXICO

and functions of the buildings. Such restoration is essentially restoration to original appearance. Restoration to original function is to be encouraged when possible. In such an instance, if a building was constructed as a church and was used as a church, its use as a church today would be the ideal use to be found for it. The same would apply to using an historic house as a house, a store as a store, a governmental building as a governmental building.

Reconstruction goes further than either preservation or restoration in the attempt to bring back the picture of the historic setting. It implies, of course, full leeway to rebuild as far as is deemed necessary. Its exponents, discovering the remains of an historic building, find the foundations of that building the ideal basis for their operations of reconstruction. They feel free to tear down or rebuild what they wish, and gradually modern workmanship and materials are seen to materialize into a finished product, the duplicated reconstruction of the old. The building, an illusion, nevertheless is supposed to represent the old, despite the fact that its materials in their newness or attempted antiquing give away its creators. In most instances, even though the building in general may be accurate, the minute details are absent because of a lack of information and the impossibility of reconstructing exactly in the manner of our predecessors. Visitors are wont to exclaim at the cleverness of the modern creation, and its influence upon those visitors may be pronounced. However, there is always the realization that after all it is only an illusion, a part of unreality. If the building is recognized as only a copy of the original, there is never the thrill or the stimulus which comes from that which is truly historic.

Restoration, having gone hand in hand with preservation, also may be the companion of reconstruction. Restoration of both appearance and function is possible in reconstructed buildings as well as in preserved buildings. In fact, such restoration becomes easier in the reconstructed area because that much is new and the whole is not limited by historic reality. Whereas in preservation, where only a portion of the original may be left and restoration is limited to that which is left, reconstruction allows for full expression of the idea of restoration.

The question may be asked whether there can be a common ground upon which the ideas of preservation, restoration, and reconstruction may meet. The answer is yes, provided the proper techniques and methods are used. Assuming in full the principles of preservation, I have said that the historic building is to be touched as little as possible, with only a minimum of repair or stabilization work. Restoration is compatible with preservation in the removal of modern accretions, in landscape treatment, interior decoration, and in the restoration of former functions, if possible.

Reconstruction may be brought together with preservation in the development of museums, where small scale models of the historic structure may be built. There is no reason why, if it is desired that the building be a full-sized model, it should not be built in exact scale upon a location away from original foundations. Provided we claim the building as modern and not as historic, we have not transgressed beyond the realms of historic reality or the basic principles of preservation.

Having outlined in general the principles underlying preservation, the question may arise as to whether those principles may be logically transgressed -- that is, may the historic part of an historic building ever be altered or changed by the individuals of the present generation? Like all principles and rules, there may be occasions when they do not apply to all conditions or circumstances. Practical considerations and necessity have led to the change or destruction of more than one historic building. The evolution of many buildings has called for some change in the past. We are told that such changes are natural in the evolution of all buildings, and that anything we do to change them is just a part of that evolution. Such reasoning is dangerous and contrary to the principles of preservation. Repair and stabilization is permissible in order to preserve the building but outright change is not, in most instances.

There are times when the idea of evolution does apply, it is true, which will allow for changes in the historic building during the present. The instances where this is permissible, however, are only when the function is the same as in the original instance and where the ownership is the same. For instance, where a church has occupied a building for hundreds of years and is using that building as a church, it is to be expected that the church may change the building to fit in with present-day conditions and needs. Likewise, who would advocate that the White House, one of the most historic buildings in the United States, remain in the condition which it had during the Civil War? The same may be said of other buildings owned by the government, by institutions, or by descendants of the original owners, provided ownership and function is a continual carry-over from the past to the present. It is with historic buildings in which there is no carry-over of functions and ownership that the basic principles of preservation must be applied rigidly.

The principles of preservation, if applied rigidly by this generation, will insure the preservation of the heritage of the past, as exemplified by our historic sites and buildings. Those historic sites and buildings will represent a bond of unity between the past, the present, and the future which, in essence, will be an evolution of historical reality.

RATTLESNAKES!

By Acting Custodian T. O. Thatcher,
Lehman Caves National Monument, Nevada.

The buzzing sounded somewhat like the steady note of a cicada but lacked the dry, crisp character -- somewhat as if it were lightly muted. We stood motionless, my companion and I, straining to locate the exact source of the sound, for we had all intentions not to blunder onto the rattlesnake. Presently we saw it making its way over a small log. We both seized sticks and went after it, dragging it away from the bushes so we could get at it more easily.

"Wait! I'm going to take it back to the lab for a live specimen." I held the snake's head down with the end of my stick.

My companion looked doubtful. "What'll you carry it in?"

"I've got some paper sacks in my packsack. They'll do".

Out came the paper sacks and, taking the snake by the neck close behind the head, I lowered it into the smaller one and immediately twisted the mouth shut. The larger of the two sacks provided an outer covering and the top, twisted into a long neck, formed a handle which supplied the desirable element of distance between the rattler and my hand. I had captured my first live rattler.

Rattlesnakes belong to the group of reptiles known as the Crotalidae, or Pit Vipers, of which they form the type genus, Crotalus. The characteristic which gives this group of snakes its common name of Pit Vipers is the presence, on each side of the head, of a deep pit placed between the nostril and the eye. The object of these pits is not known but the presence of a large nerve connection at their inner faces indicates a sensory function and a theory has been advanced that these aid the reptile in directing its strike. Other characteristics are keeled scales; that is, each scale has a fine, sharp ridge lengthwise along the center, vertical pupils, and long, curved, movable fangs, which are held against the roof of the mouth in membranous sacs when not in use. The fangs are hollow with an oblique opening at the tip through which the venom is injected into the victim when the snake strikes, just as an injection is made with a hypodermic needle. To say that a snake strikes is apt indeed for there is very little of the biting action in the extremely rapid attack of a rattlesnake. In order to strike any distance, the snake's body must be in a series of S-shaped loops from which position the head is thrown forward by an abrupt straightening of the fore portion of the body. As the head comes forward, the mouth is opened to such an extent that the upper and lower jaws form an extremely wide

angle; the fangs are thrown forward so as to stand at right angles to the upper jaw and are bared of the membranous sacs. Thus they are actually driven into the object struck. At the instant of impact there is a slight biting action which tightens the muscles about the poison sacs at the base of the upper jaws, forcing the venom out through the ducts and fangs into the base of the upper jaws and into the wound.

Though theories are numerous concerning the function of the rattles borne by the rattlesnakes, their purpose has never been actually determined. According to Dr. R. L. Ditmars, Curator of Mammals and Reptiles at the New York Zoological Park, who is one of the world's foremost authorities on reptiles, one of the most plausible theories is that they may serve as a call during mating seasons, for it is known that snakes, "particularly the Crotaline species, are highly sensitive to vibrations." "Again," Dr. Ditmars says, "it is possible the rattle may be employed to attract the prey."

I have found the much hated and feared rattlesnakes to be very interesting reptiles. After my initial experiences with them, prompted more by a spirit of bravado than anything else, I began to see in these snakes something which would make an interesting study as I settled down to observe their habits and reactions. Questions began to come to my mind. Why did these snakes have venom and a remarkably developed apparatus for injecting it? What was their food? How easily were they provoked into striking at a person? Did they always sound a warning with their rattles -- and many others. For the answers to some, I turned to observation and experimentation, for others to books, notably "Reptiles of the World", and "The Reptile Book", both by Dr. Ditmars. Both are excellent books, the first semi-popular and the latter technical. It might be well to state here that all my observations have been made on specimens of the Great Basin Rattler.

The question about the use of the venom was first answered by reference to the books, then by observation. The popular belief among the young fellows with whom I was associated when I began my studies was that the venom was used primarily or even entirely for defense or, as some people still believe, for attack on man. This, I read, was merely an incidental use, the chief purpose being the killing of prey. Later my observations indicated the same thing, for I found that hungry rattlers readily struck at live mice or rats put into their cages but showed considerable reluctance to making passes at an annoying human being. I am convinced that rattlesnakes, as a rule, are peace-loving, and would much rather run than fight; but if they are cornered, injured, or scared -- watch out!

On two occasions, scared rattlers furnished me with very interesting experiences. The first occurred one day while I was driving down a



READY FOR ACTION



MILKING

narrow desert road in my car when suddenly I came upon a small rattler in the middle of the road. It was impossible to stop the car before the snake had been passed and as I wanted it for a specimen, I straddled it with the wheels of the car. As soon as the car stopped, I jumped out and ran back. The snake was still in the middle of the road, apparently thoroughly confused and scared by the sudden passage of the car. Before I got closer than five feet to the snake, it began to strike wildly in my direction, though being only two feet long, it had no chance of hitting me.

The second incident happened as my wife and I were driving over a mountain road at night. We were proceeding slowly when the headlight beam revealed a good-sized snake on the road. I stopped the car so that the snake was still in the light about twenty feet ahead of the car, took my flashlight and went to capture it. By diverting the snake's attention with the light, it was a simple matter to seize it behind the head and lift it clear of the ground. The snake thrashed vigorously and began to spray me with musk. I immediately tossed it back to the road a few feet distant and wiped the musk from my hand and clothes, then went after the snake again. The snake, somewhat dazed and frightened, had thrown itself into tight loops and as I came close, it followed the flashlight intently. I held the flashlight, which was a long one, by the end and thrust it at the snake which immediately struck and missed. Several times more the performance was repeated, each time the snake striking below the light. Each time the snake's head passed through the beam of light when it struck at right angles to my line of vision, I could catch a glimpse of the fangs and the widely opened mouth. At the end of this performance, the snake seemed suddenly to become completely confused and struck, first directly away from the light, then wildly in any direction even when the light was held motionless. After several such strikes the snake settled back into its guard position and I stepped away and turned out the flashlight to let it calm down. In a short time it began to crawl away so I stepped over, placed the light on its head, picked it up and letting its tail drag on the ground just enough so it wouldn't thrash about, took it to the car and dropped it into a burlap sack which I carried for the purpose.

Persons unfamiliar with the handling of venomous reptiles should never attempt to catch them without first using some device by which the snake's head can be securely held without danger of getting bitten. The wisest procedure for those unfamiliar with reptiles is to avoid handling rattlesnakes under any circumstances.

And now a word about the musk mentioned above. The substance is, as nearly as I can tell, a transparent fluid and is released through the anal opening. I thought at first that it might be feces but subsequent investigations indicate that the fecal matter is opaque and of a rather pasty consistency and lacks the extremely obnoxious odor characterizing the musk. As compared with the odor of a skunk, I find the snake musk to be much more objectionable. This occurrence has been

noted on a number of specimens but as yet I have found no reference to similar observations in any of the books to which I have had access.

The food of rattlesnakes consists of small rodents which are hunted chiefly in the evening and night, and possibly an occasional bird. The assumption that birds may form a small part of the diet is based on one laboratory observation which took place while I was going to college. In the zoological laboratory we had a pen of rattlesnakes and one day one of the students brought in a live mature English Sparrow which was placed in the snake pen. At first the bird flew wildly about, then settled down on the floor of the pen. The snakes had watched it closely and soon after the bird settled, one of them proceeded to glide slowly towards it, keeping all the time very close to the floor. Several times the bird moved and each time the snake changed its direction, cautiously stalking its victim. Finally when its head was within six inches of the bird, the rattler slowly formed into its loops and with startling suddenness lashed out to seize the bird. It did not let go and immediately draw back into the loops as is the habit when striking a mouse or a rat, but clung tenaciously to the sparrow as if sensing that it would fly away and be lost, if released. When the sparrow died, the snake started to swallow it but was disturbed by a group of students coming in for classes, whereupon it dropped the bird and refused to have anything further to do with it.

The fact that rattlesnakes destroy many harmful rodents and the statement that a rattler is a more efficient mouser than the best cat, give rise to a question about their status -- are they good or bad? The answer can become very involved but the simplest statement would be, "It depends upon where they occur." In an area frequented by many people, the snakes must be classed as undesirable, for they are dangerous. On the other hand, in areas where human occupancy is at a minimum, the rattlesnake may be classed as beneficial or at the very least, neutral.

Observations made in feeding penned snakes showed many times that they would miss when striking at a running mouse, and from the same observations, I have concluded that a man can move his hands, about as fast as a rattler can strike--but don't try to find out! Because these snakes feed very reluctantly in captivity, force feeding is sometimes necessary to keep specimens alive. I have done this by using polished wooden forceps to push strips of flesh from a freshly killed rabbit down the snake's throat. But even this is not always successful for some individuals react unfavorably to such handling and subsequently die.

The readiness of these snakes to rattle or to strike at a person, varies greatly with individuals and species. One time I was hunting and stopped close to a sagebrush to turn and watch some game. Looking down a moment later, I found a rattler resting between my feet! It must have

been my lucky day for I hadn't stepped on the snake and it made no indication of striking nor had it rattled. On another occasion, merely jumping across a bush in the bottom of a small wash set a snake hidden under it to rattling vigorously. This specimen struck the moment a stick was brought close to it. Here the often repeated story of being chased by a rattlesnake might be aired. Calm reasoning based on a knowledge of the snake's habit of running for cover if threatened, will give this tale a different aspect. In all probability the snake in its rush for cover has accidentally started in the direction of the observer who has promptly left for other territory.

This habit of running can be used to advantage in capturing specimens in open territory by stepping alongside the running snake which has its head close to the ground, and swinging the arm down to seize the snake close behind the head. If a person misses, the arm can readily and speedily continue its swing. This method is not to be recommended, however, particularly for snakes more than three feet long. The most preferable method is to go into the field armed with a forked stick previously prepared with a running noose in the fork, to be controlled from the handle.

In common with most reptiles, rattlesnakes like warmth but cannot stand too much of it. Have you ever seen a rattler basking in the direct glare of the noonday desert sun? Neither have I, and this is the reason: The snakes have no means of controlling their body temperature, so it fluctuates with the temperature of their surroundings and should that become too high, the reptile's blood literally boils and death results. That rattlesnakes apparently like to be handled after becoming used to it, is probably due to their liking the warmth of a person's skin. Often they have flattened themselves on my bare arms just as if basking.

Now back to the venom and its place in the modern world. This deadly substance is now produced commercially for use in making anti-venine, discovered by Dr. Albert Calmette of the Pasteur Institute, to combat the effects of snake bite. Since this discovery, anti-venine institutes have been created in most major countries where poisonous reptiles present a problem, and rattlesnake farms have sprung up in a number of places in the United States. Antivenines are specific; that is, to combat the venom of a particular type of snake, anti-venine made from that type venom must be used. The process by which the venom is obtained is known as "milking". A vial is prepared by stretching, not too tightly, a piece of tough dental rubber over its mouth. Then the snake is taken, immediately behind the head, and the covered mouth of the vial touched against its lips. Usually the snake responds immediately by sinking its fangs through the rubber and shooting streams of venom from them. The fangs are usually worked independently of each other after first sinking through the rubber, alternately being driven out and down to get a deeper, better hold. With the fangs through the rubber, the snake is "milked" of all possible venom by pressure of the handler's fingers at the base of the

upper jaws. The venom is a rather oily acting, slightly cloudy, amber liquid which forms long needle-like crystals when dried on a glass plate. In action it destroys the red corpuscles of the blood and causes dehydration. It is so virulent that three drops directly in the blood stream is sufficient to kill a healthy man. I have seen a three-foot specimen give one cubic centimeter of venom, approximately ten drops, at one time.

Of course no one wants to be bitten, but if anyone does have that misfortune, the only thing to do is to follow drastic first aid measures, and then get to a doctor in a hurry. In rattlesnake country, it is always well to carry a snake bite kit. High boots are an added protection, but the first line of defense must always be caution, for though the rattlesnake is not vicious, it certainly requires treatment with respect. The first rule to observe, if you are bitten, is don't get excited. A tourniquet should be applied between the bite and the body: above the elbow, in bites on or near the hand or forearm; and just above the knee, in bites on the foot, ankle or lower leg. The tourniquet should not be twisted too tightly; just tight enough to obstruct the superficial circulation but not the deep circulation. The tourniquet should be loosened for one-half minute every ten minutes or so, to prevent gangrene complications. A rubber tourniquet is supplied with most outfits but if it is not available, a string or shoelace can be used. The bitten part should be cleaned with antiseptic material, if available. The suction device supplied with some of the well known kits can be brought into use after an incision with a clean razor blade or knife, treated with antiseptic, is made of each fang mark. The incision of the two fang marks should be connected. If the suction devices are available they can now be applied and in extreme situations the mouth might be used if there are no abrasions or sores whereby danger might be attached to such sucking effect. Repeat the suction effect even over a period of several hours. This is highly important because a life may be saved even if only a drop of venom is extracted. If there is excessive bleeding, a new cut close by might be made. If an anti-venom is available it can be injected at once above the tourniquet, the amount of the dose depending upon the size of the snake. When a doctor is reached his attention should be directed to the measures already taken.

THE SANTA FE CONFERENCES

The annual meetings of superintendents of national parks with other administrative officials of the National Park Service were held in Santa Fe last October 2 to 7, inclusive. These officials then took an active part in the Third National Park Conference of the American Planning and Civic Association, held in Santa Fe from October 8 to 10, inclusive. The combined groups, on October 11, started a 1,200-mile automobile tour of some of the outstanding scenic and archeologic areas in New Mexico, Colorado, Utah, and Arizona. The trip terminated in Grand Canyon National Park on October 17.

Meetings of the Park Service officials were held in the Laboratory of Anthropology. Associate Director A. E. Demaray brought greetings from Director Arno B. Cammerer, and reviewed some of the major activities of the year.

Questions relating to federal appropriations were discussed by Representative James G. Scrugham of Nevada, Chairman of the House Appropriations Sub-committee on Department of the Interior expenditures.

Colonel Richard Lieber of Indianapolis, Vice-President of the American Planning and Civic Association, told of recent studies relating to the charging of fees for use of various recreational facilities in state parks and other recreational areas.

Superintendent Edmund B. Rogers of Yellowstone National Park, was elected Chairman of the Conference, and Coordinating Superintendent Herbert Kahler of Castle Pinckney National Monument, South Carolina, was elected Secretary. Chairman Rogers appointed Superintendent Elbert Cox of Morristown National Historical Park, New Jersey, as Vice Chairman; Superintendent Lawrence Merriam of Yosemite National Park, as Second Vice Chairman; and Acting Superintendent R. Taylor Hoskins of Mammoth Cave National Park, Kentucky, as Sergeant-at-Arms. All officers will serve for one year.

The Conference was formed into committees to study various Service problems. Reports of these committees formed the basis of a general report, with recommendations, to Director Cammerer.

The American Planning and Civic Association's initial day in Santa Fe, on Sunday, October 8, was devoted to social gatherings. There was a musical program in St. Francis Auditorium, followed by a reception in the State Art Museum at which the hosts were Dr. and Mrs. Edgar L. Hewett and Mrs. George H. Van Stone. Dr. Hewett is the Director of the Museum of New Mexico and the President of the School of American Research. At the Fiesticita in La Fonda that night, under auspices of the New Mexico chapter of the association, there was a Spanish dinner, and a program of Spanish songs and dances.

Horace M. Albright of New York City, President of the American Planning and Civic Association, presided at the opening business session, on Monday morning, October 9, in the City Hall Auditorium. Welcome speeches were given by Governor John E. Miles of New Mexico, Mayor Alfredo Ortiz of Santa Fe, and Regional Director Hillory A. Tolson of Region III of the National Park Service. There were responses by Assistant Secretary of the Interior Oscar L. Chapman, Assistant Director James J. McEntee of the Civilian Conservation Corps, and Superintendent O. A. Tomlinson of Mt. Rainier National Park.

Colonel T. B. Catron of Santa Fe, Chairman of the New Mexico chapter, spoke on "Santa Fe, Where Three Civilizations Meet." He outlined the city's early history, and told of the Indian, the Spanish-American, and the Anglo-American cultures in the "Ancient City" of today.

S. Herbert Hare of Kansas City, Mo., a Fellow of the American Society of Landscape Architects, presided at the Monday luncheon, in La Fonda, where afternoon and evening sessions were held. Irvin J. McCrary, City Planner of Denver, spoke at the luncheon, on "National Parks in the National Plan."

Miss H. Marie Dermitt of Pittsburg, Pa., a member of the association's Board of Directors, presided at the afternoon session, when the speakers were President Albright, who discussed "The National Park System and Its Future"; Richard M. Leonard of San Francisco, representing the Sierra Club, who talked on "The Use of Wilderness Areas"; T. C. Vint, Chief of Planning, National Park Service, whose subject was "National Park Roads and Parkways"; and George L. Collins of the Land Planning Division, National Park Service. Mr. Collins read a paper on "Identifying Areas of National Park Calibre".

At the close of the afternoon meetings, visits were made to some of the gardens and homes in Santa Fe.

There was a buffet supper in the New Mexican Room of La Fonda that night, after which an evening session was held. Marvin C. Nichols of Fort Worth, Chairman of the Texas chapter of the American Planning and Civic Association, presided. The speakers and their subjects were:

James J. McEntee, Assistant Director of the Civilian Conservation Corps, "The CCC in National Parks and Monuments"; Frank C. W. Pooler of Albuquerque, New Mexico, Regional Forester of the U. S. Forest Service, "Recreation in Wilderness Areas"; and Conrad L. Wirth, Supervisor of Recreation and Land Planning, National Park Service, "National Recreation Area Study". Associate Regional Director Herbert Maier of Region III of the National Park Service, read a paper prepared by Earle S. Draper of Knoxville, Tennessee, Director of Regional Planning Studies for the Ten-

nessee Valley Authority. The subject was "Planning for Water Recreation on a National Scale."

Dr. Hermon C. Bumpus of Duxbury, Massachusetts, Chairman of the Advisory Board on National Parks, Historic Sites, Buildings and Monuments, presided at Tuesday morning's session. The speakers and their subjects were: Superintendent Frank Pinkley of the Southwestern National Monuments, "Southwestern National Monuments"; Jesse L. Nusbaum, Senior Archaeologist of the National Park Service, "Our Archaeological Heritage"; Dr. Herbert E. Bolton, Chairman, Department of History, University of California, "History in the National Parks and Monuments"; Miss Pearl Chase, Chairman of the Plans and Planning Branch of the Community Arts Association in Santa Barbara, California, "Preservation of Natural Beauties and Recreational Values in National Parks."

Colonel Richard Lieber of Indianapolis, Vice President of the association, presided at the luncheon, when Associate Director A. E. Demaray of the National Park Service, spoke on "The National Park Service - An Interpretation."

In the afternoon a visit was made to Region III Headquarters of the National Park Service, after which there was an inspection of exhibits in the Laboratory of Anthropology. The exhibits were explained by the Director, Dr. H. Scudder Mekeel.

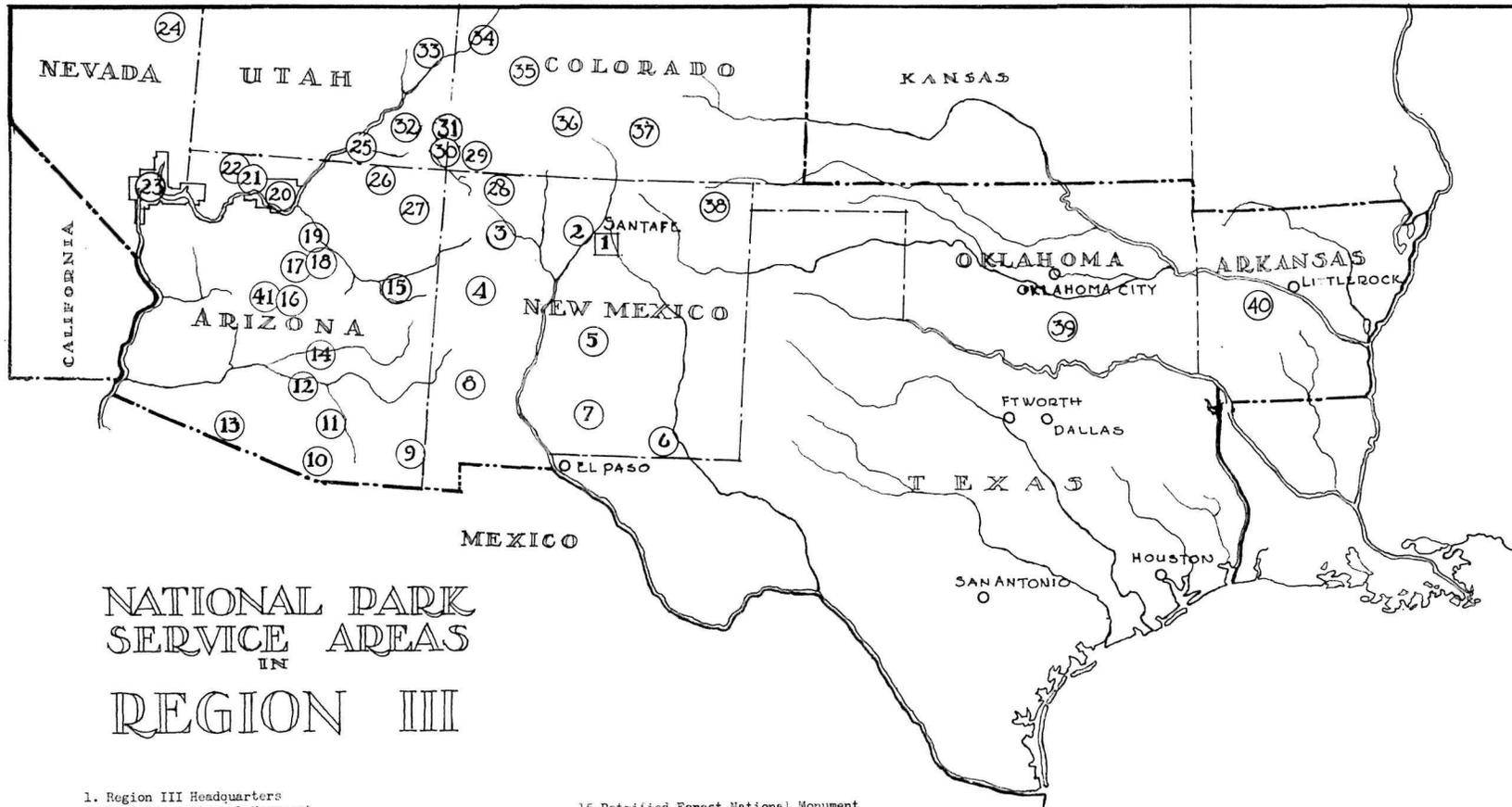
President Albright presided at the dinner that night, in La Fonda, when Assistant Secretary of the Interior Oscar L. Chapman was the principal speaker. He stressed the need for added conservation of our natural resources, because of the present war in Europe. Other speakers were Jay Downer of New York City, a member of the association's Board of Directors; and Associate Director A. E. Demaray of the National Park Service.

Over sixty of those who attended the Conference started on the motorcade that left Santa Fe on Wednesday morning, October 11. A stop was made at the San Ildefonso Indian Pueblo, en route to the Bandelier National Monument for lunch. From Bandelier the group traversed the Valle Grande of Jemez Crater, via Cuba, across parts of the Jicarilla and Navajo Indian Reservations, with a detour to the Chaco Canyon National Monument. The night was spent in Farmington, New Mexico, from where a visit was made the next morning to the nearby Aztec Ruins National Monument. Lunch was had in Mesa Verde National Park, Colorado. The remainder of that day and all of Friday was spent in Mesa Verde, where Navajo Indians reenacted parts of their sacred ceremonies, in full costume. The party left there on Saturday morning, October 14, for Utah to be guests of the Moab Lions Club at a barbecue luncheon served at Dead Horse Point in the proposed Escalante National Monument. The visitors were entertained at a buffet supper that night in Moab.

Leaving Moab on Sunday morning, the party proceeded via Monument Valley, to Gouldings Trading Post, Utah, for a barbecue lunch, and then entered Arizona to inspect the Canyon de Chelly National Monument. Dinner was in the Ganado Mission to the Navajos, in Ganado, Arizona, and the night was spent there. After traveling much of two days in the Navajo Indian Reservation, the Hopi Indian Reservation was crossed on Monday afternoon and several of its important villages were visited. The Grand Canyon National Park was reached that evening, via Desert View and the South Rim Road. Trips on the South Rim of the canyon were taken on Tuesday, October 17, after which the motorcade disbanded.

Some of the travelers returned to Santa Fe and stopped en route in the Petrified Forest National Monument and other areas. One group made a side trip into the Kaibito Springs area of Northeastern Arizona to trace a portion of the route taken by Father Silvestre Velez de Escalante in 1776, and to search for an inscription reported to have been written by him on a ledge of rock. Escalante's route from the Colorado River "Crossing of the Fathers" to Kaibito Springs was confirmed. The inscription was not found. The members of this party were Dr. Herbert E. Bolton, Chairman of the Department of History, University of California, who is a member of the Advisory Board on National Parks, Historic Sites, Buildings and Monuments; Regional Director Hillory A. Tolson, Regional Historian Aubrey Neasham, and Associate Regional Forester Ward Yeager, of Region III; Dr. George P. Hammond, Dean of the Graduate School, University of New Mexico; Jesse L. Nusbaum, Senior Archaeologist, and George P. Collins of the Land Planning Division, National Park Service. Dr. Bolton has made tentative plans for another search next spring when it is possible that his party can be accompanied by Mr. H. L. Baldwin of Salt Lake City, who claims to have seen the inscription in 1884 when he was mapping the Echo Cliffs Quadrangle for the United States Geological Survey.

The Conference was the first of the annual joint meetings with National Park Service officials to be held outside of Washington, D.C., and it was declared to have been one of the most successful that has been held. The program and the details of organization were handled by Miss Harlean James, Executive Secretary of the American Planning and Civic Association.



NATIONAL PARK SERVICE AREAS IN REGION III

1. Region III Headquarters
2. Panderlier National Monument
3. Chaco Canyon National Monument
4. El Morro National Monument
5. Gran Quivira National Monument
6. Carlsbad Caverns National Park
7. White Sands National Monument
8. Gila Cliff Dwellings National Monument
9. Chiricahua National Monument
10. Tunacacori National Monument
11. Saguaro National Monument
12. Casa Grande National Monument
13. Organ Pipe Cactus National Monument
14. Tonto National Monument

15. Petrified Forest National Monument
16. Montezuma Castle National Monument
17. Walnut Canyon National Monument
18. Sunset Crater National Monument
19. Wupatki National Monument
20. Grand Canyon National Park
21. Grand Canyon National Monument
22. Pipe Spring National Monument
23. Boulder Dam National Recreational Area
24. Lehman Caves National Monument
25. Rainbow Bridge National Monument
26. Navajo National Monument
27. Canyon de Chelly National Monument
28. Aztec Ruins National Monument

29. Mesa Verde National Park
30. Yucca House National Monument
31. Hovenweep National Monument
32. Natural Bridges National Monument
33. Arches National Monument
34. Colorado National Monument
35. Black Canyon of the Gunnison National Monument
36. Wheeler National Monument
37. Great Sand Dunes National Monument
38. Capulin Mountain National Monument
39. Platt National Park
40. Hot Springs National Park
41. Tuzigoot National Monument

