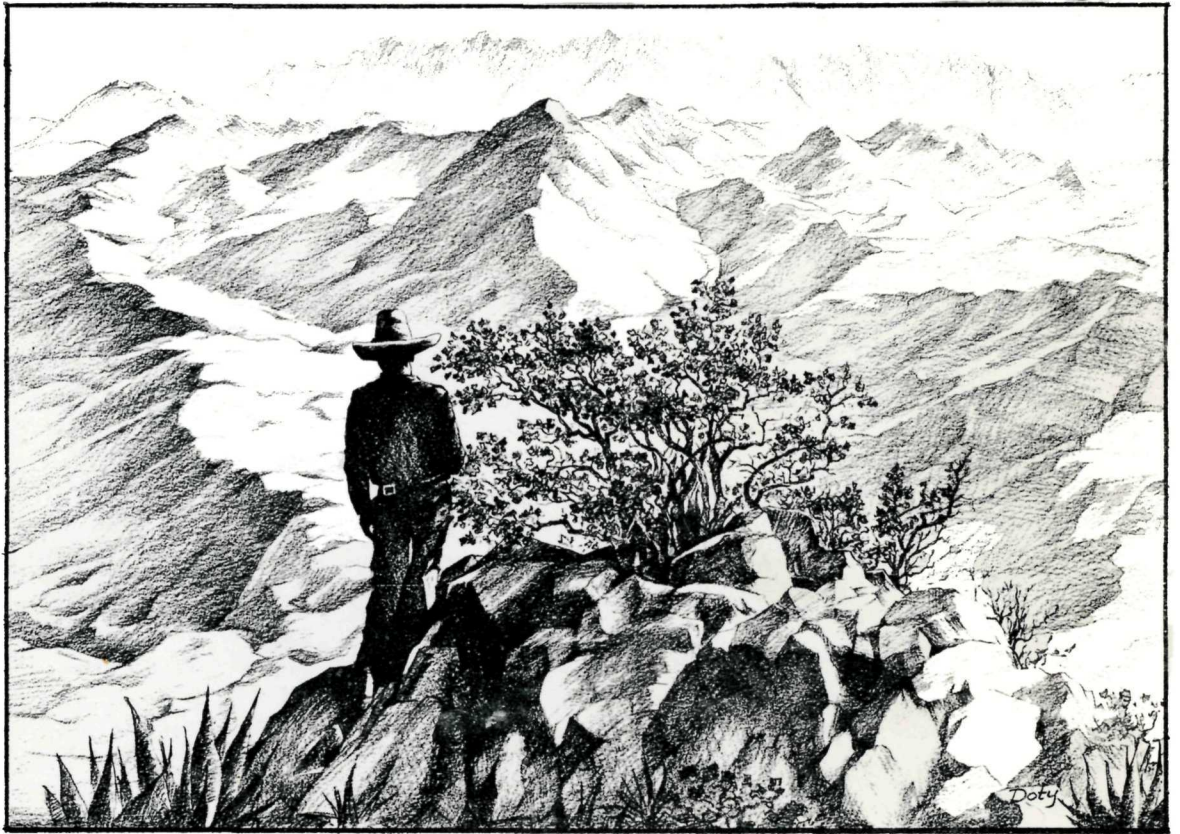


REGION III QUARTERLY



CHISOS MTS., IN THE BIG BEND OF TEXAS

NATIONAL PARK SERVICE

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C O N T E N T S

STEPHEN T. MATHER	Page 3.
PUEBLO BONITO By Dr. H. J. Spinden	Page 4.
SYNTHETIC SCENERY By Frank Pinkley	Page 7.
CONSERVATION OF NATIONAL PARKS By Dr. Harold C. Bryant	Page 12.
TAKING A WILDLIFE CENSUS By Russell K. Grater	Page 17.
INTERNATIONAL AREAS By Herbert Maier	Page 22.
CERTAIN ASPECTS OF THE PROPOSED ESCALANTE NATIONAL MONUMENT IN SOUTHEASTERN UTAH By Jesse L. Nusbaum	Page 27.
THE THIRD NATIONAL PARK CONFERENCE By Hillory A. Tolson	Page 31.
WILDLIFE MANAGEMENT By Dr. W. B. McDougall	Page 36.

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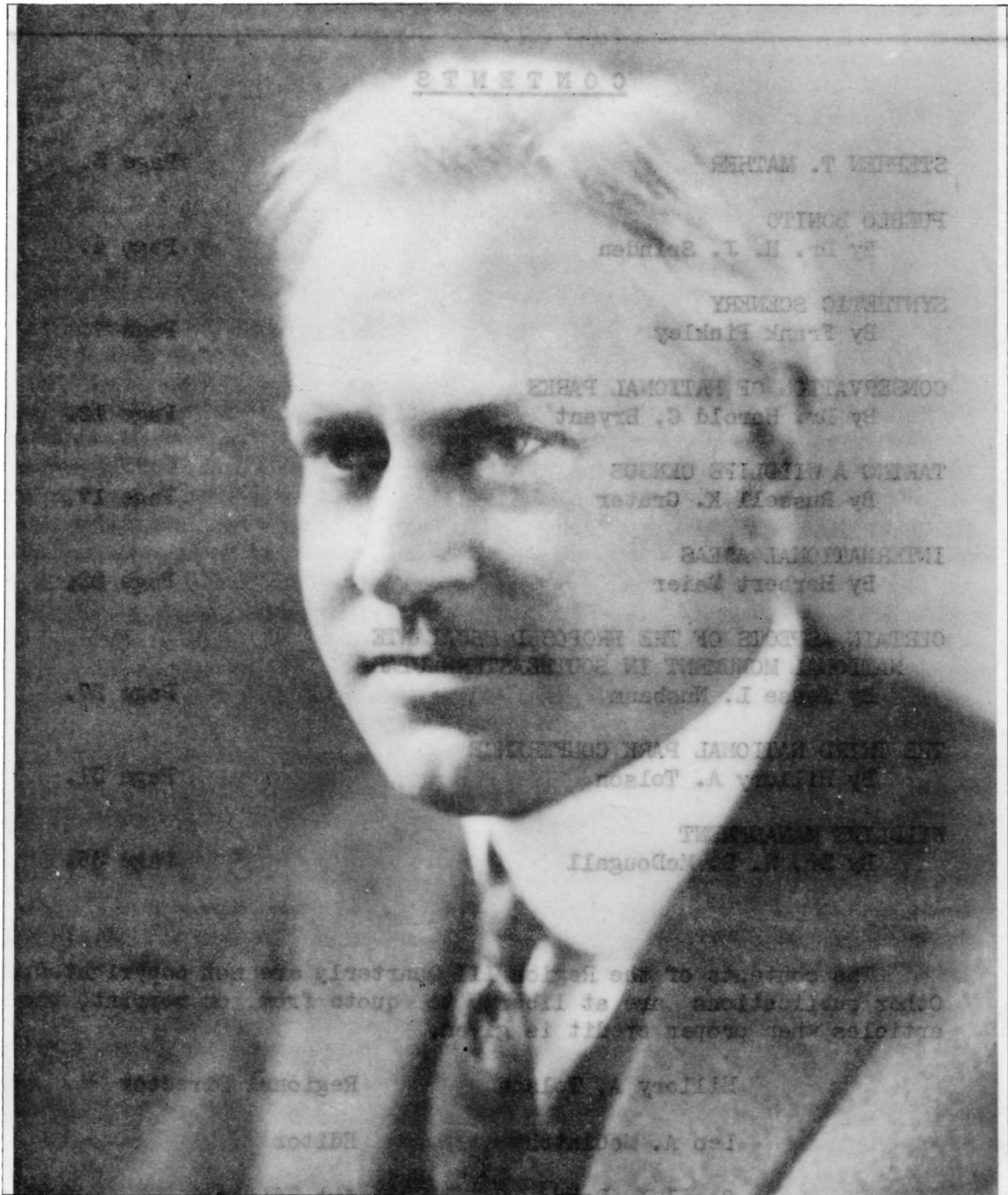
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Santa Fe

New Mexico.

R E G I O N I I I

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



STEPHEN TYNG MATHER
1867 - 1930.

First Director of the National Park Service.

"There will never come an end to the good that he has done."

STEPHEN T. MATHER

The world looks to the United States for leadership in practical procedure for the establishment, maintenance, and operation of national park areas. Stephen T. Mather made it so. He envisioned, in 1917, when he became the first Director of the National Park Service, that these were areas that must forever be kept in their natural state so that our own enjoyment of them could be shared by future generations. It was because he had the courage to fight for his convictions, often in the face of organized opposition from influential commercial and political interests, that our national parks and monuments remain today the unspoiled places he insisted they must always be. He sought to promote cooperation but, when occasion demanded, he vigorously asserted the independence that typified his birth date -- July 4.

To an extraordinary degree, Mr. Mather's was an unselfish public service. This included personal contributions toward the purchase of lands that were desired for inclusion within boundaries of some of the national parks. It also included, for a time, his payment of salaries to persons outside the Government service -- persons he had employed to assist in the work he was carrying on. His previous successes in private business undertakings had enabled him to do this.

Mr. Mather had exceptional ability as an organizer. His enthusiasm for park ideals was infectious and he was able to interest many outstanding individuals and organizations in promoting conservation activities. His far-sightedness encompassed planning for the comfort and enjoyment of the millions of people he foresaw would annually visit the national parks. This same policy has been carried out by the succeeding two Directors of the National Park Service, Horace M. Albright, and the present Director, Arno B. Cammerer. His zealousness for the public weal eventually impaired his health and he was obliged to retire at the close of 1928. He died on January 22, 1930, at the age of 62.

Representative Louis C. Crampton of Michigan, who, as Chairman of the House Sub-committee on Interior Department Appropriations, had championed the National Park Service in Congress for ten years, summed up Mr. Mather's life work in an eulogy in the House of Representatives as follows:

"He laid the foundations for the National Park Service, defining and establishing the policies under which its areas shall be developed and conserved unimpaired for future generations. There will never come an end to the good that he has done."

More recently, in dedicating a plaque to Mr. Mather in Hawaii National Park, Associate Director A. E. Demaray, who had been associated with Mr. Mather from the very beginning of the National Park Service, said:

"Much has been said and much has been written about Mr. Mather since his departure from this earth ten years ago. He has been often eulogized for the good he has done, but words, spoken today and not long remembered, can never do justice to his pioneering efforts, the fruits of which are only more evident with the passing of the years."

PUEBLO BONITO

By Dr. H. J. Spinden,
Curator of Indian Art and Primitive Cultures,
Brooklyn (N. Y.) Museum.

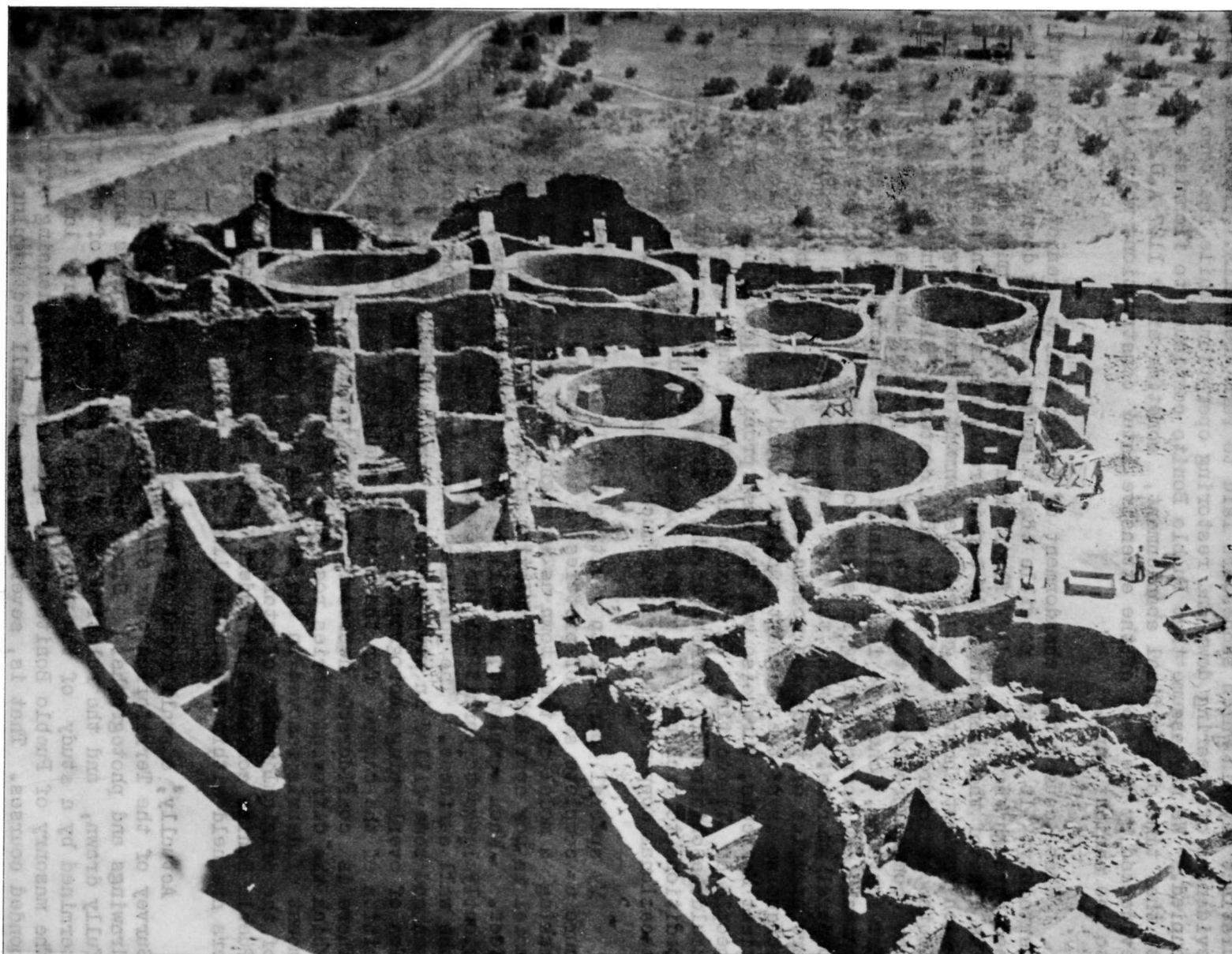
For the third time I have had the pleasure of visiting one of the most interesting ruins in America, namely, Pueblo Bonito in the Chaco Canyon National Monument, New Mexico. I saw it first in 1911, and again a decade later when the exploration of the site by the National Geographic Society was under way. Now it can be visited with much greater ease on long roads across the desert from several directions.

Although Pueblo Bonito is now in the middle of a very sparsely populated region, it was once the central town in a populous area enjoying trade which reached as far south as the valley of Mexico. We know from the dates recovered by means of the tree ring calendar that Pueblo Bonito was occupied during the tenth, eleventh and twelfth centuries. It is one of the ruins which represents the peaks of the civilization built up by the Pueblo, or village, Indians of the Southwest.

Already, it seems that the sedentary people were having trouble with others who envied them their prosperity -- perhaps the invading Navajo. Pueblo Bonito has a plan of building undoubtedly intended as fortification. The town has one long, high, curved wall, roughly forming a half circle that once stood from three to five stories in height. The sole gateway was through the street line of buildings closing the open part of this half circle. It seems that there were no doors on ground level, ladders being used to reach trapdoors in the roof. The plaza of the great communal edifice was more or less broken up by large ceremonial chambers of circular shape. These were partly underground, and the consolidated town itself rose in a series of receding stories, something like the seats of a grand-stand. We can even imagine that crowds standing on the various roofs, rising higher and higher towards the back, looked down on spectacular ceremonies performed in the open court.

Within a few miles of Pueblo Bonito are many similar ruins also of large dimensions, and of approximately the same date. Also in this region there are less spectacular remains of a much earlier time.

Pueblo Bonito has attracted the attention of archaeologists almost from the time of its discovery. A model of it was made by the Geological Survey of the Territories many years ago and copies distributed among most of the museums of the world. Extensive excavations have been carried on by the American Museum of Natural History, and more recently by the National Geographic Society. Pueblo Bonito is now deservedly protected as a national monument, receiving expert attention through the National Park Service. While no exploration is now being carried on, efforts are being made by the Indian CCC Mobile Unit to strengthen and support the old walls. Of particular interest and value is the complete and accurate photographic record being kept of the work. At the same time, the ruin is open to public inspection under guidance.



The southeastern end of PUEBLO BONITO.

To the archaeologist, Pueblo Bonito is particularly interesting because of the sequence in construction which can be proven by the several distinct ways in which stones are laid to form the walls. There are many evidences of tearing down and restoring operations while the town was occupied. We may assume that Pueblo Bonito continued to flourish almost up to the time of its final abandonment, sometime after 1127 A.D. This is evidenced by the fact of the extensive late constructions which are added to the ancient core.

What caused the abandonment of Pueblo Bonito cannot be stated with certainty. It is quite possible that a sudden cutting down of the stream-bed through the flat valley floor made cultivation much more difficult. The date of the abandonment is considerably earlier than the harsh drought which brought about the general abandonment of many large cities in the Southwest towards the end of the 13th century. Black and white pottery is the common product of this site, but the pottery shapes are often unusual. For instance, one type is a cylindrical bowl decorated with geometric ornaments and corresponding in shape to certain fine pottery of Mexico and Central America. Among the most famous objects taken from Pueblo Bonito are examples of turquoise mosaic on objects of jet and bone. Some of the turquoise is of the highest quality found in the Southwest. To the ancient Mexicans, turquoise was the most precious jewel, and in some way the people of Toltec times in Mexico discovered that supplies of this jewel could be obtained in the far north. It seems they set out on trading expeditions to exchange the bright plumage of parrots and macaws as well as occasional copper bells, for the much desired turquoise.

My special purpose in visiting Pueblo Bonito at this time was to secure a complete set of pictures of the outer and inner walls, for use in making a model of the town as it might have looked in its heyday. This model is now approaching completion in the Brooklyn Museum as a WPA project. When completed, it will be about 12 feet square, a scale sufficiently large to permit all the details of the stone work to be drawn on the wall surfaces. The position of windows in the upper stories, some open and some filled in with masonry, can be added, thanks to the new series of overlapping photographs. On a ground plan of the ruin, the position of the camera for the various shots has been carefully registered. There is considerable necessary research, especially on the exact way in which the different stories rose from the court level. As a rule the amount of debris removed in the cleaning of rooms gives a pretty clear idea of the original number of stories, and with the architectural style of Pueblo Bonito continued in modern Indian towns, the imaginations of modelers are held within reasonable limits.

Actually, a small model of Pueblo Bonito was made by the Geographical Survey of the Territories over sixty years ago. This was used in early drawings and photographs. Since that time ground plans have been carefully drawn, and the relative age of the various parts of the ruins determined by a study of the way in which the stones are laid in the walls. The masonry of Pueblo Bonito at its best is a very pleasing arrangement of bonded courses. That is, several layers of small rectangular stones may be followed by one or two of much larger rectangular stones. The weakness came from the floors laid over beams and the wooden lintels of doors and windows which finally decayed.

SYNTHETIC SCENERY

By Frank Pinkley,
Superintendent, Southwestern National Monuments.

Just offhand there seems to be no connection between scenery of any kind and a national monument man, and you might wonder where I acquired any authority to talk upon the topic. A careful reading of the basic act under which the 27 monuments of our southwestern group have been proclaimed, will show you that you can reserve a national monument for historic, prehistoric or scientific purposes, but nothing is said about scenery. The widely held popular opinion that second class scenery, just a little on the off side of making a good national park, can and should be reserved as a national monument now and then, has no real base in the law under which national monuments are made. A surprising number of our own National Park Service people have some peculiar ideas of what constitutes possible national monument material, and it might be a good idea to have some monument-minded person sit in on the arguments when we are about to knock the blocks out and send one of these scenic proposals down the ways on its temporary journey under the monuments flag until it is taken over by the parks group.

Admitting, then, that scenery is out of my particular field, maybe I can still say something about synthetic scenery, which is another thing and does lap over into our work. An example of synthetic scenery came to hand in the not too far distant past, which has enough general interest to discuss here. Louis Caywood, who has charge of the Tumacacori National Monument in Arizona had an idea which he discussed with me about building an arrastre to show his visitors how ore was crushed and treated in the days of the mission. I encouraged him to go ahead and construct his life-sized model, using an original stone which he had found over in the nearby hills for the drag stone. The total cost was about ten or fifteen dollars and he did what we thought was a right good job. The visitors to whom he showed it got a fine idea of what it was all about.

However, we got into some hot water about it, because one of the technical branches came along and found it and put us on the carpet partly because of its location, which, they said, was in the foreground of a view of the ancient ruins. We squirmed out of that the best we could by pointing out that the well seems to have been right in front of the mission and that the quadrangle of houses of the Indians made a large forecourt in which it is not altogether improbable the ancient arrastre might have been operated.

The other objection struck us as funny until it began to look as if we might get hanged if they made it stick. It was that we should have made a model of this arrastre and put it in an exhibit room in a glass case.

That, we submit, would be a fine example of synthetic scenery.

We asked a few exploratory questions and were told that a good model could be made for a couple of hundred dollars and a case for it wouldn't cost over two hundred more. Here, in our dumb way, we had been ignorant enough to build the real thing out on the ground, using an original drag stone, for only ten or fifteen dollars.

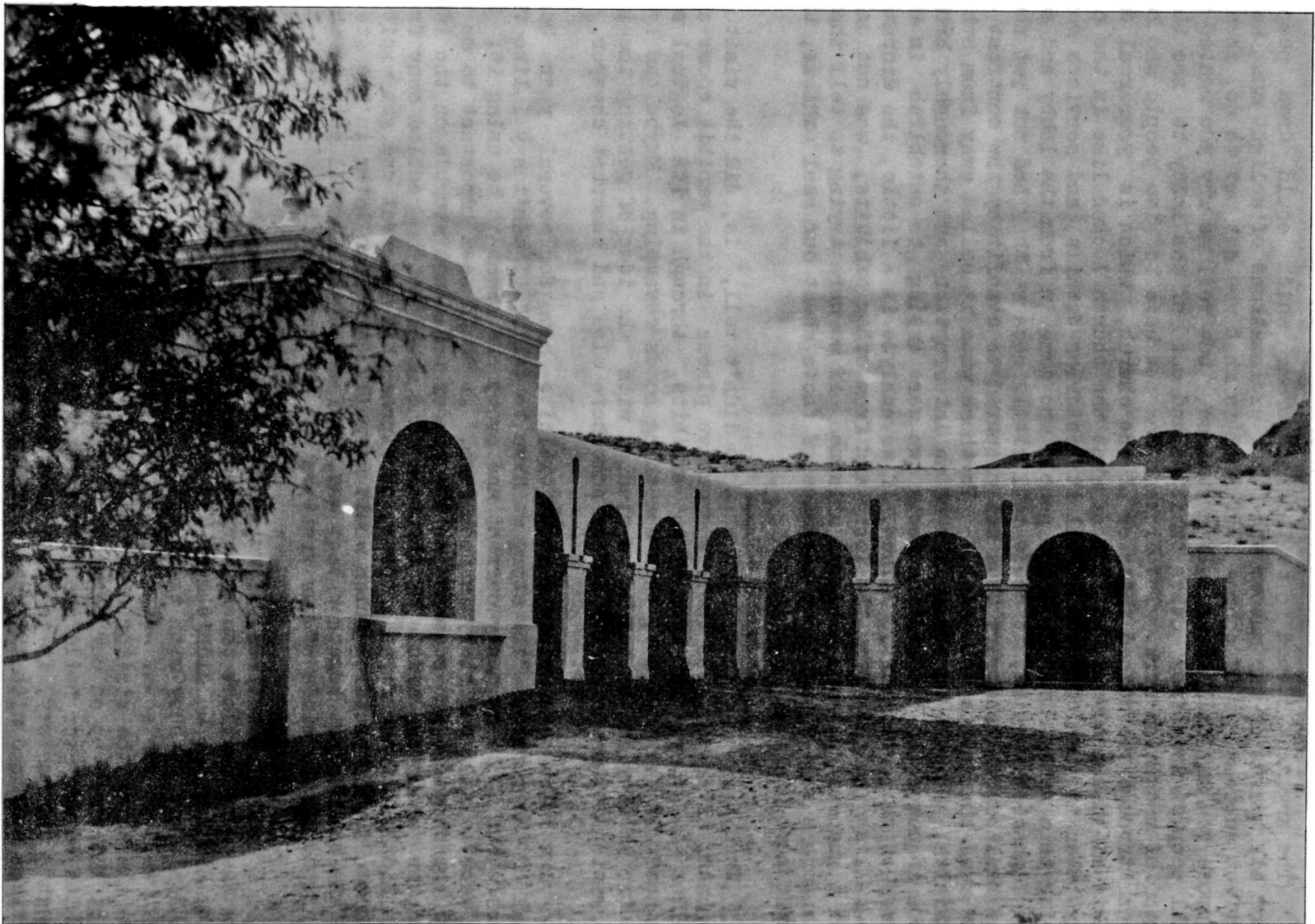
We still think it is best to use real scenery whenever you can.

Another technical man blew into our office one day and got us all stirred up with an exhortation to close up one of our fine ruins and build a model of it down in the canyon so we could give the visitor the treat of a complete visit through the model of a ruin but not let him into the real one. Now this was an idea which we had developed among ourselves some years back and at the time this technician sprung it on us, we had a request up in the Secretary's Office to let us try it at one of our easily damaged places in the Southwest. We noticed, in the general arguments which followed this man's proposal, that the real difference between his pro and our con arguments was that he had convinced himself that his synthetic scenery was just as good as the real thing or maybe a little bit better. There I am pretty sure he was wrong. Nothing can equal the real exhibit for making an impression on the visitor, especially if it is explained by a man who knows what he is talking about. You can't dress up for mountain climbing and stand before a diorama of mountain climbers for a couple of hours and acquire a sunburn, or blisters on your heel, or very much geological information. Synthetic scenery may have its place but let us not go over to it lock, stock and barrel.

Just recently we have had a tilt with the men of the museum division over the never-ending question of traffic lines through exhibit rooms. As a sort of side argument, we pointed out that at Tumacacori where we got two rooms planned as we wanted them, we had practically a 100 percent circulation over the story as laid out in the cases. In the third room where we kicked on the plan and had our ears knocked down, 34 percent of unguided visitors seemed to be circulating backwards on the story as laid out in the cases. The answer was that when one of the museum division men was present on a busy day when we had not enough guides and the music was turned on in that beautiful little diorama of the Mass, he noted how the unguided visitors were immediately drawn from all over the museum rooms and even through the open door from the lobby, and he also noted how much pleasure they got out of the diorama.

He was perfectly correct in the statement, "Visitors get a whale of a lot of pleasure out of that Mass diorama." I have, however, yet to overhear the first visitor exclaim: "Oh! Now I see how these side altars must have looked when they were complete!" or "Now I see what you meant when you were telling me about the apparent extra height the low choir loft arch gave the ceiling of the nave." As a beautiful little piece of mechanism, it excites the interest of every visitor and gains admiration but we cannot say that it advances his knowledge or gives him a particle of additional information. Yet it probably cost three or four thousand dollars and with that much money expended along other lines, surely the visitor interest could have been held and his knowledge and information advanced at the same time.

TUMACACORI MUSEUM



The argument seemed to be that a diorama which could draw people from all parts of the museum and cause exclamations of delight must be a perfect success. Of course, if that is what you set out to do, then I suppose you may call the result a success, but tell me why you wanted to call people away from other exhibits and out of the lobby to see this piece of mechanism work. The diorama was put here to give people who had been through the ruined interior of the church, which is your real exhibit at this monument, an idea of what the church looked like in the old days when it was complete in all its interior details, and services were being held within it. To those people who came in from the lobby and saw the mechanism working, it could tell little because they had not yet seen the real church and were thus not prepared to benefit by the contrast of the real thing with the model. To those whom it called away from other exhibits, it came in the manner of an interruption and thoroughly broke up a sequence of interesting facts we were trying to establish in the minds of those visitors. Thus, if we analyze it a little, the diorama, in calling visitors from the lobby and from other exhibits, was not only not a success but was a blamed nuisance if we were trying to tell those visitors a well-thought-out sequence of facts about our real exhibit, the Tumacacori Mission.

What I want to know, and what he didn't tell, is, did the visitors go back, afterward, to their respective places in the exhibit rooms and follow the story, as given by the exhibits, through in its logical sequence? If they did not, then something needs revamping. Maybe the synthetic scenery had better be re-studied with the idea of getting the information it was to convey across somewhere else and somewhat cheaper.

Our talks and writings about exhibits have for several years been full of the phrase, "the story we have to tell." I can't say I like the phrase but it is commonly current and every one seems to be using it. If we were telling our story in book form, it would seem important to me to put the chapters in sequence so the reader would not stumble on the last chapter about the middle of the book and would not be called away from the middle of the fifth chapter to express his interest and get excited about a lovely picture which would normally come much later in the story. If the book is put together that way, I fear our story will get somewhat confused in the minds of our visitors who try to read it.

I wonder, sometimes, if we aren't so busy making the synthetic scenery that we overlook the scenery the Lord made, or at least if we don't pity Him because He didn't make His a little more like ours. I wonder if we don't get so busy with these little exhibit rooms of ours, sometimes, that we lose our sense of relative values and get to thinking that they are the thing the visitor comes to see. Maybe once in a while we should stop and check up on our perspective and realize anew that the finest exhibits we can ever build are just footnotes on the real story at the monument; explanatory, it is true, but just footnotes all the same; minor matters compared with the real thing we have to explain.

Don't misunderstand me and think I am talking against exhibits or exhibit rooms. They are of the utmost importance when used with discretion but we don't want to let them get the upper hand and make us their slaves. And when we put them together so poorly that 34 percent of our visitors read the story wrong end to in one of our rooms without ever becoming aware that they are doing so, it is time for reflection, not time for congratulating ourselves that our synthetic scenery goes over with a bang.

A recent memorandum has decried our "Turnkey methods" of trying to explain our monuments and their exhibit rooms to the visitors by the use of guides. Now here is an experiment I have tried hundreds of times and it scarcely ever failed. Go into an exhibit room where five or six parties are scattered around the cases, reading a few labels but skipping about eight-tenths of them as is commonly done, and skipping every other case as they move forward and backwards around the room. Begin talking in an ordinary tone of voice to any one of the four or five groups about the material in the case before which they stand. If you know your subject, the other parties will gravitate to you within three or four minutes. Change your base to the proper case and go through the room as the exhibits were designed to be seen. Study and test the parties after you have finished the room and compare them with other parties who have not been guided. Do all this as I have done it hundreds of times; and then write out all the arguments you can think of, showing how much more the visitors learn by wandering at random the wrong way around your carefully planned exhibit rooms over the personally conducted tour. Take plenty of space and a wide margin; use the back of a postage stamp!

Some day I think I may rise up in my wrath and smite these critics hip and thigh who now and then tell us out of their large stock of inexperience that conducting visitors through exhibit rooms is an old-fashioned and unnecessary way of getting the information over. They feel so certain that they can build synthetic scenery and mechanical gadgets, which, causing the visitor to clap his hands with pleasure at the interesting ingenuity of their construction, can allow us to do away with the oldest, and thus far the best, way of imparting information, telling it by word of mouth.

Of course, I can hear my critics say it would be quite in keeping that they be smitten with the jaw-bone of an ass.

And maybe they are right!

CONSERVATION OF NATIONAL PARKS

By Dr. Harold C. Bryant,
Acting Superintendent,
Grand Canyon National Park.

A visitor on the rim of Grand Canyon stated that she had been afraid to return and look at the canyon lest it be changed. Her experience indicated that landscape changes are common. I remember vividly that my father, for years, talked about a return to his boyhood home. After the visit was made he lost all desire to return there because of the marked changes which had spoiled his boyhood picture of the river and the woods. The river had been diverted into another channel; the woods had been replaced by corn fields. Most of us wish to hold certain desirable places in their virgin condition and unmodified by man. The earliest ideal set up by those interested in a national park system held to the idea that it would be a worthwhile thing to pick out certain superlative areas within the United States, call them national parks, and hold them unmodified and unspoiled for the benefit and enjoyment of future generations.

The basic law establishing the National Park Service states it shall be the duty of the Service to "Conserve natural and historic objects and the wildlife therein" in such manner as to keep it unmodified and unspoiled for the future. Through the years we have discovered that it is not difficult to select suitable areas for protection but it is a very difficult thing to hold them unmodified.

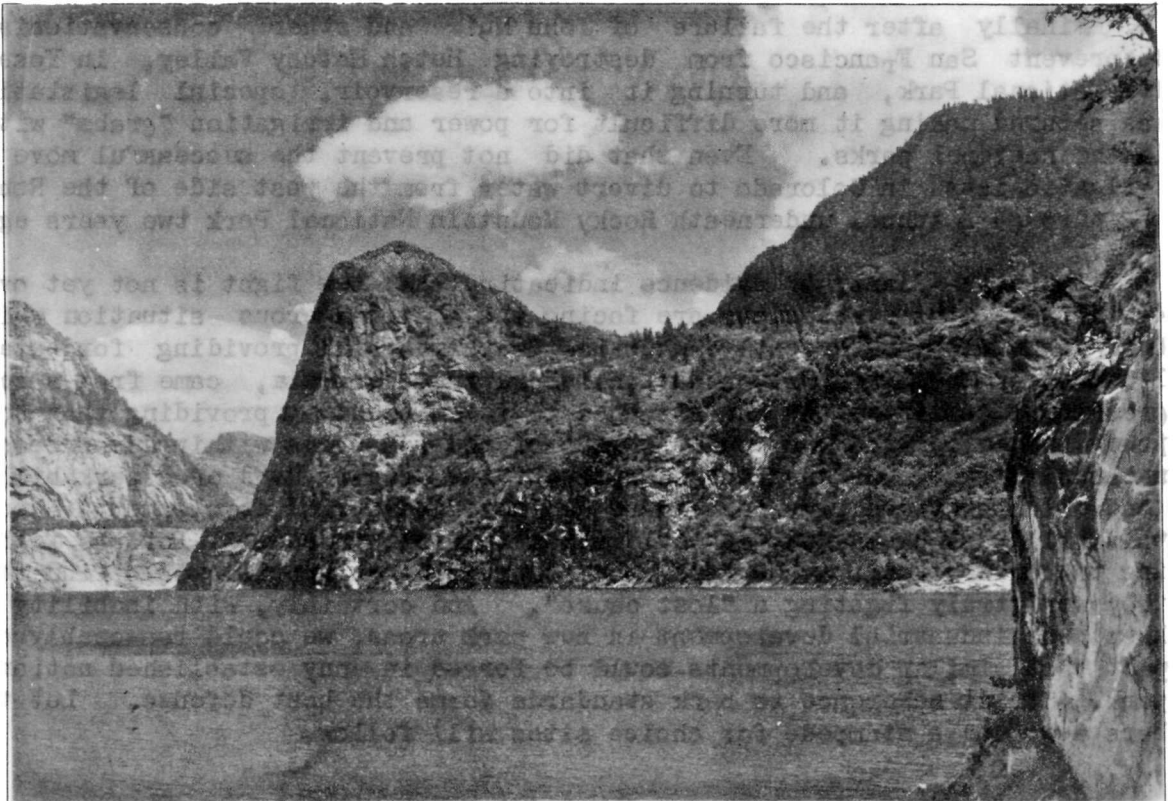
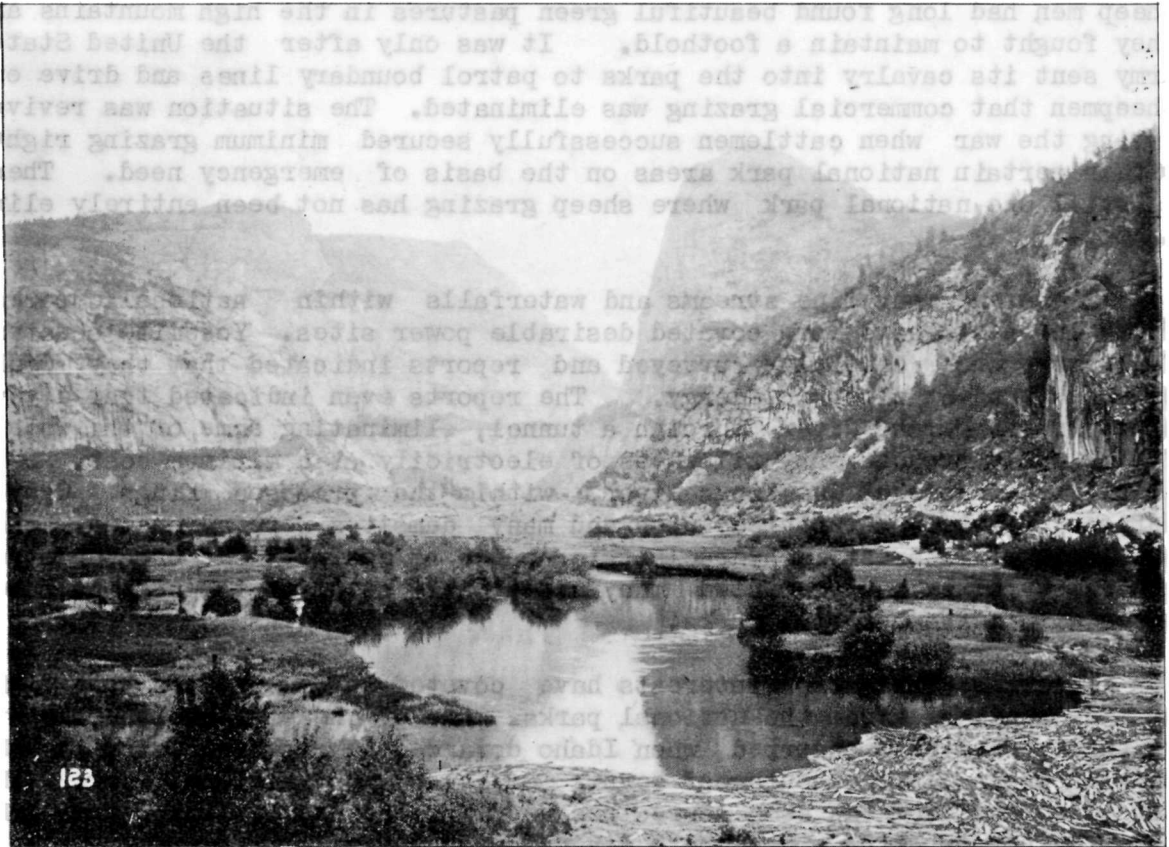
The very objects which we set out to conserve may be destroyed, through carelessness or vandalism. A petrified tree may be knocked apart and the pieces carried away as souvenirs. Some species of animal may be exterminated on the plea that it damages trees or feeds upon some other species of game animal.

As soon as we invite millions of people into the national parks we are confronted with the need for accommodations requiring man-made buildings and campgrounds. The higher the volume of travel, the greater the difficulty of restricting development and preventing modification of the terrain. A heavily used campground endangers tree life; automobiles run over and kill squirrels; needed drinking water pumped from springs may leave drought conditions in a whole canyon.

Most of us perhaps feel that a certain amount of development for the care of the public is well justified, even if it means loss of primeval conditions, but there remains a greater difficulty: that of keeping park areas free from industrial and commercial development. Even though most people may definitely oppose commercial development, exploitation of the national parks by selfishly-interested people is a constant menace. Perhaps a review of some of the attempts at exploitation (and some of them have been successful) may be helpful in forcing a picture of the grave danger that continually confronts the defenders of our National Park System.

YOSEMITE'S HETCH HETCHY VALLEY

Before and after the dam was built.



It took many years to eliminate sheep grazing from national parks. Sheep men had long found beautiful green pastures in the high mountains and they fought to maintain a foothold. It was only after the United States Army sent its cavalry into the parks to patrol boundary lines and drive out sheepmen that commercial grazing was eliminated. The situation was revived during the war when cattlemen successfully secured minimum grazing rights within certain national park areas on the basis of emergency need. There is still one national park where sheep grazing has not been entirely eliminated.

There are many fine streams and waterfalls within national parks. Power interests have long coveted desirable power sites. Yosemite's waterfalls were once carefully surveyed and reports indicated that they would produce abundant electric energy. The reports even indicated that diversion of the Merced River through a tunnel, eliminating some of the waterfalls, would produce many kilowatts of electricity at a minimum cost. Similarly, the whole of the Kings River, within the proposed Kings Canyon National Park, was reported upon and many damsites were advocated. Only the loss of interest in hydroelectric power as against the cheaper steam generated power has prevented many additional attempts to utilize power sites within the national parks.

Likewise irrigation interests have coveted water supplies that might be made available from the national parks. One of the most serious threats to the park system occurred when Idaho demanded a reservoir site in the Beckler Basin in the southwest corner of Yellowstone National Park. The latest demand from the same source has been for the use of Yellowstone Lake water by constructing a dam and a diversion tunnel.

Finally after the failure of John Muir and other conservationists to prevent San Francisco from destroying Hetch Hetchy Valley, in Yosemite National Park, and turning it into a reservoir, special legislation was secured making it more difficult for power and irrigation "grabs" within the national parks. Even that did not prevent the successful move by irrigationists in Colorado to divert water from the west side of the Rockies through a tunnel underneath Rocky Mountain National Park two years ago.

There is plenty of evidence indicating that the fight is not yet over -- in fact, conservationists are facing the most dangerous situation which has yet developed. Recently, when the Gearhardt Bill providing for establishment of the Kings Canyon National Park in California, came from a congressional committee, it had attached to it an amendment providing that both power and irrigation use could be made of the resources within this proposed national park. One congressman spoke of the "right kind of a park bill", (one which provided for, instead of against, industrial development). Should this bill pass unchanged, it would set a terrible precedent. Persons fighting to conserve some areas free from commercial enterprise would find that they were truly fighting a "lost cause". And certainly, with inability to keep out industrial development in new park areas, we could reasonably expect that similar developments could be forced in any established national park. Strict adherence to park standards forms the best defense. Let the bars down and a stampede for choice sites will follow.

A grave danger faces Grand Canyon National Monument because of the proposal to build a dam at Bridge Canyon. The argument used is that it will help safeguard Boulder Dam and at the same time improve availability of power and water. If and when the Bridge Canyon Dam is built, water will be backed up into the lower end of a very beautiful portion of Grand Canyon, below Toroweap Point. This lake water will not only partially fill the deepest perpendicular walled canyon contained in either the monument or the park but it will cover a magnificent geological exhibit of a great lava flow into the canyon, and a fine series of hot springs and other natural features. This lake will soon fill, with the millions of tons of debris carried by the river, thus permanently destroying the scenic beauties of that portion of Grand Canyon west of that contained within the park.

Wherever crowds congregate there are men who wish to introduce money-catching devices. I remember that in the 1920's there were many requests to install golf courses, merry-go-rounds, bump-the-bumps, roller-coasters and the like. Beach resorts have plenty of such money-catching devices. In national parks they should be strictly banned.

Another menace has always been that of change of boundary lines in order to allow the utilization of natural resources. The Federal Government is now buying back from private owners magnificent sugar pine forests to the north of Yosemite. These forests were once within the national park but were traded for important private holdings in the heart of the park. Some of the finest scenery along the crest of the Sierra Nevadas in this same park was eliminated many years ago on the basis that it contained mineral resources. Whenever the suggestion is made that it now be returned to the park because these mineral resources have never been found profitable, the plea is made that the upper San Joaquin River is desirable for power sites and, therefore, should remain outside of a national park. Furthermore, some of this region contains several storage reservoirs and hence, although it contains Mts. Ritter and Banner, higher and more scenic peaks than anything within the park at present, this superlative area is outside and not inside Yosemite National Park.

These boundary changes also have a bearing on wildlife. In many instances slices have been cut from original park areas which have greatly reduced the forage for game. The original Olympic National Monument in Washington, was greatly reduced in size to allow lumbering. The Olympic elk then found it necessary to go outside of the monument for winter feed and hence were slaughtered, yet the original plan was to give safety to this disappearing species by the creation of a reserve.

There are other conservation problems in the national parks which are less commercial in aspect but are exceedingly important.

Animal life may suffer a severe setback by having its food supply and breeding places usurped by an exotic intruder. Where the introduced European Starling occupies every woodpecker's hole, bluebirds, chickadees, and nut-hatches, the normal users of such excavations, are driven from

the country. If opossums are introduced in the west where they never were found before, their egg and bird-eating habits directly affect native species of birds. Where a weed-like foxtail grass gets a foothold, it replaces native grasses that are far more useful to native animals. The proper conservation of wildlife and plant life demands that a constant fight be made to prevent encroachment of exotics, both plant and animal. There are few graver dangers to the plan to present natural unmodified environment than that involved in the exotic intruder, either plant or animal.

When we see continual changes made of primeval areas, it is time that we lay full plans for saving some areas in true primeval condition. This can only be done where roads are prohibited. The Wilderness Society has suggested that in forested areas a wilderness must contain a minimum of 300,000 acres, and on open deserts it should contain 500,000 acres to be effective. This means that there are few areas outside of national parks and national forests that can meet the requirements. Consequently these government agencies must take the responsibility of maintaining wilderness areas large enough to meet the definition.

Noise is nerve-wracking. More and more, man needs opportunity to get away from those things which wear upon the nerves. Through the ages he has found relief by the scenery in great forests. The appeal of true wilderness is found in quietude and solitude as well as in the unspoiled beauty of natural surroundings. It is increasingly hard to get away from the noise of men! Wilderness areas, far from the haunts of men, now reverberate with the sounds made by automobiles, outboard motorboats or airplanes. We may countenance horseback travel but motorized equipment largely takes away the feeling and inspiration of vast undisturbed terrain. The attempt must be made to save some places from undesirable encroachment and keep them roadless and as noiseless as possible. Like other ideals, this is increasingly hard to attain, for there are those who demand all the modern methods of travel.

The wilderness character of national parks is preserved by prohibition of airports and roads but it is a constant fight to prevent such developments. Yellowstone already has four entrance roads but Idaho is clamoring for a fifth. Great Smoky Mountains has twelve miles of ridge road but there are those who demand still more. Road enthusiasts on the Olympic Peninsula want a road across one corner of Olympic National Park which park enthusiasts demand shall remain a true wilderness park with no roads. The proposed Everglades National Park in Florida was hardly projected before plans were suggested for a loop road through it. We are not very far along toward the ideal of large roadless wilderness areas, for only two parks (both very new and one an isolated island), have thus far withstood road encroachment.

It is quite evident from the park problems enumerated above that it takes more than a law creating a park to attain true conservation of the features it possesses. High ideals, and adherence to standards alone will prevent the gradual sapping away of all the park features which can be readily utilized for commercial gain. There are some things so precious that they are priceless and placed under constant guard. So may it be with the national parks!

TAKING A WILDLIFE CENSUS

By Russell K. Grater,
Junior Park Naturalist,
Boulder Dam National Recreational Area.

A short time ago I was talking with a group of visitors in one of our national park areas and the conversation drifted around to a favorite topic with most visitors -- the subject of wildlife. After a few minutes of discussion one man said, "Perhaps you can answer a question that has been puzzling me for some time now. When I was in Yellowstone National Park I was told that the northern Yellowstone elk herd numbered a little over 9,600 animals in 1938. Now, what I would like to learn is how do they arrive at these figures for elk and how do they know that the figures are correct?"

That is a fair question and is similar to many asked by the park visitor regarding animals in all of our areas. The answer can be summed up in two words: wildlife census. Taking a census of the various wildlife forms found in any of our national park areas is a rather difficult matter. It calls for a carefully worked out plan in order to insure obtaining reasonably accurate results.

In Yellowstone National Park the elk census is taken each year by what wildlife men call the visual method of enumeration. That simply means going into the field and making actual counts of the animals on the range. To do this requires the assistance of several men well trained in such work. The count is made, if possible, in late winter or early spring when the snow in the park is deep enough to concentrate the elk in more or less restricted localities. These areas are carefully checked as to location prior to the dates set for the count, and a crew of men is then assigned to systematically cover each area. Each day of the count the crew covers its allotted territory as quickly as possible, counting all elk observed. In addition, these crew members make notes on the condition of the elk and record the number of dead animals found. Any other large mammals encountered are also noted. All elk cannot be counted because small bands are certain to be isolated in outlying sectors of the park and will not be seen. After the count has been made and all reports are in, estimates are made regarding the percentage of animals actually observed. If it is agreed that 90 per cent has been recorded, then the total figure is obtained by adding an additional 10 per cent. Field notes taken during the survey will also show the relative number of other animals, such as predators, etc.

This same method of taking a census is also used at Grand Canyon National Park when the annual deer count is made on the North Rim each spring. However, in this particular area there is a fairly high percentage of uncounted animals, as large numbers drift into the canyons below the rim of the Kaibab Plateau and are not included. Thus there is a greater possibility of error in arriving at the final figure for the Kaibab deer herd as compared to the Yellowstone elk herd.

Visual counts are also used in taking the census of other wildlife forms such as bighorn, antelope, moose, waterfowl and the like. Most of these counts are made from the ground, but the airplane has become of great assistance in recent years, especially in the counting of antelope. Flying over a band of antelope it is an easy matter to take an aerial photograph of the entire group of animals and from this picture an accurate count can be made. Most waterfowl counts are made from a boat as it is necessary in many cases to flush the birds from cover, but on open water, counting through the aid of photographs has proven very successful.

The visual method of enumeration is the commonest and most reliable way of taking a wildlife census, but sometimes it becomes necessary to use other methods. This is especially true in the Southwestern park areas. In desert regions, such as Death Valley and Organ Pipe Cactus National Monuments and the Boulder Dam National Recreational Area, weather conditions are much too mild during the winter months to force animals to concentrate in any one area, and it is only during the heat of the summer that any pronounced tendency for wildlife concentrations is noticed. During these hot months, every available waterhole is usually an excellent place at which to start a census of the larger wildlife forms. Bighorn can be observed at these waterholes with great regularity. That is also true of wild burro, coyote, fox and other species. In such areas it is necessary to use an indirect method of enumeration to supplement the visual in making counts.

This method consists, in the main, of carefully examining the area selected for such things as tracks, droppings, evidence of browsing, and dens. A thorough knowledge of the terrain is absolutely necessary and the habits of the animal being studied must be known.

In taking a census of such animals as beaver, the use of indices furnish the only reliable source of information. Inasmuch as beaver are primarily nocturnal it becomes necessary to place great reliance upon such things as tracks, abundance of food, cuttings and dens. Studies by reliable field research men have already indicated the number of beaver known to occupy an average den. Thus, by obtaining a fairly accurate figure on the number of occupied dens in a given region and supplementing these data with other observations, such as food storage piles, etc., it is possible to arrive at reasonably accurate census figures.

The indirect method is also of great value in the Boulder Dam National Recreational Area where the creation of Lake Mead has produced an unusual problem in census taking. Instead of a few places heretofore containing water available for wildlife, the huge lake now offers a 550-mile shoreline as a water source. Thus, during neither hot nor cool months is there any tendency for animals to concentrate in any one area because of water needs.

Let us suppose that we are going to attempt to obtain figures on the bighorn population in Boulder Canyon up the lake from Boulder Dam. Preliminary field surveys may not disclose any bighorn, but a careful exam-



Visual counts are used in taking the census of many of the larger wildlife forms, such as the deer shown here.

ination will show the presence of droppings and tracks in a few of the side canyons -- evidence of the presence of the animals as surely as though the observer had actually seen them. The location of these "signs" is then put on a map of the Boulder Canyon region. As these field surveys are continued, the map will soon show the localities known to contain bighorn and the frequency of occurrences as indicated by the abundance of tracks and droppings. Armed with this knowledge, the census taker now selects one of the side canyons believed to be representative of the number known to contain bighorn. Here the direct visual method of enumeration is utilized, the canyon being searched from top to bottom throughout its length. Powerful binoculars are an absolute necessity, as the bighorn usually knows of the presence of the census taker long before he himself is seen and can frequently slip away unseen unless field glasses are brought into play. The binoculars also aid the searcher to closely examine overhanging ledges on the canyon slopes. Bighorn are especially partial to these ledges because of the shelter from the sun rays and often lie there well out of sight of the casual observer for hours at a time.

After making an intensive survey of the canyon, the census taker finds that he has seen five sheep in the entire area. With this minimum figure as a gauge, he can safely say that the other canyons in the region of comparable size, food, and bighorn sign will contain a similar minimum number. In this manner a total is obtained for the Boulder Canyon area that will tend to be conservative and to portray conditions much more accurately than mere estimates based only on a few miscellaneous observations. While this way of taking a census has a greater possibility of error than the direct visual method which covers an entire region, it is the safest means of obtaining anything resembling accurate figures for the Lake Mead area. It has been carefully followed in working out the census figures for the western end of the Grand Canyon. Here it would be almost impossible to use any other method due to the relative inaccessibility of many of the huge side canyons. Similar methods are utilized in enumerating the wild burro population of the region.

Speaking of wild burros, a rather interesting discovery was made while checking a sample canyon. A careful survey had revealed only seven animals for the entire area, yet "sign" was abundant and everything seemed to indicate that more should be present. For some time I sat there on a rock trying my best to locate other burros in the neighborhood, but without success. Look as carefully as I would, not another animal was in sight. Finally, acting on an impulse, I drew out a small caliber automatic and discharged it twice into the air. The results were really astonishing. From all parts of the canyon came alarmed brays as the slopes literally became alive with burros. A quick count showed a total of eighteen instead of the original seven -- and I may have missed one or two even then. Watching me from behind rocky outcrops, the animals had blended perfectly with the dark colors of the canyon and did not become distinctly visible until frightened into emerging from their hiding places.

The values of taking a wildlife census are many. Naturally it gives a fairly accurate picture of the general distribution and abundance of any given species in the park area. Probably the greatest benefit derived from such a census is obtained in planning a carefully coordinated wildlife program for the park. For example, on the North Rim of the Grand Canyon the National Park Service and the U. S. Forest Service are carrying on range studies to better determine the relationships that exist between the Kaibab deer herd and the plants in the park area and on the remainder of the plateau. To carry on such studies, grazing quadrates are established at various points on the plateau. These quadrates are small plots, fenced against deer and containing representative vegetational growth for the locality. Adjacent to the fenced area is another plot, identical in size but unfenced and containing similar vegetation to that of the protected plot. Each year the browse plants in these two tracts are carefully measured and charted on graph paper and the abundance and growth of other plants having any food value are noted. The figures obtained each year will show the normal growth of the protected plant as compared to the growth of a similar unprotected plant subject to deer browsing. With these figures it is then possible to determine whether the range is being over-browsed, under-browsed or about right. If over-browsed, it becomes necessary to work out plans to reduce the number of deer in the region, and here the importance of census figures becomes quite evident. Knowing how many deer are in a given region, it is a relatively simple matter to determine the approximate number of animals that must be removed from the range in order to insure healthy conditions for the following growth season. The next year's figures from the quadrates should show whether the preceding season's program and calculations have obtained the desired results.

Taking the annual wildlife census is one of the most interesting tasks carried on in the park areas, but one that requires skill, patience and physical endurance as well as wildlife knowledge. But whether the census taker is fighting his way on skis or snowshoes through the deep snows of Yellowstone, spending days in the saddle scouring the forests and exposed flats of the Kaibab Plateau, or laboriously carrying canteen and equipment into the desert canyons of the Southwest, he can be sure of one thing: He does not know what the next day will disclose, but he does know that he will not experience many dull moments.

INTERNATIONAL AREAS

By Herbert Maier,
Associate Regional Director.

We had dismounted to let our horses graze for awhile. From the heights of the South Rim of the Chisos, the arduous meanderings of the Rio Grande flashed in the noon sun. Over on the Mexican side the San Hechiceros Range mounted through a thin blue haze against the horizon. "Uncle Everett" Townsend yanked the brim of his sombrero down over eyes that appeared as mere slits against the midday glare.

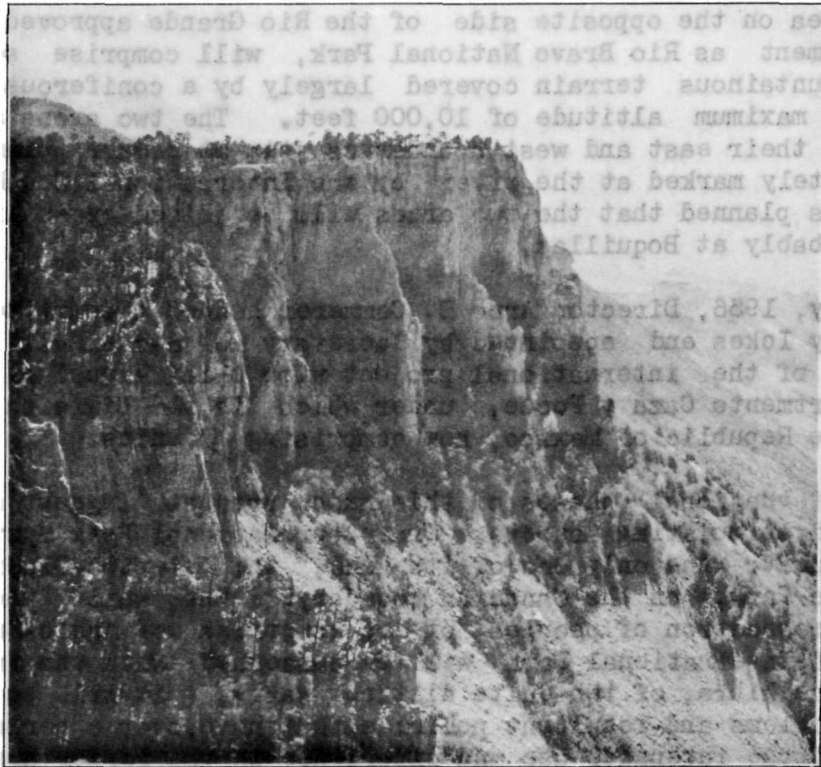
"Somehow, I've always felt like you do about our friends across the river," he finally began. "I rode my horse over there before I was booted and spurred like a respectable Texan ought to be. Of course, after I got to be a ranger, and later, a sheriff, I only went over when the trail of some hombre got so hot on this side the only thing to do was to keep going. And many's the time a bullet clipped pretty close as I jogged along. We didn't have a right to cross in those days without a permit from the nearest Jefe, but at times like that we couldn't bother about a permit.

"At such times I was glad for the kind way of those people and the friendships I had amongst them. They're just naturally hospitable and gracious, if you'll let me use that word. Of course, they live differently than we do, and they do business differently. They call it the 'Land of Manana', but Mexicans often use that word because it's kinder than just saying 'no'. But if you're in need or in danger, they'll always help you, no matter how much or how little they've got. You know, there isn't a bridge between Presidio and Del Rio and that's 350 miles."

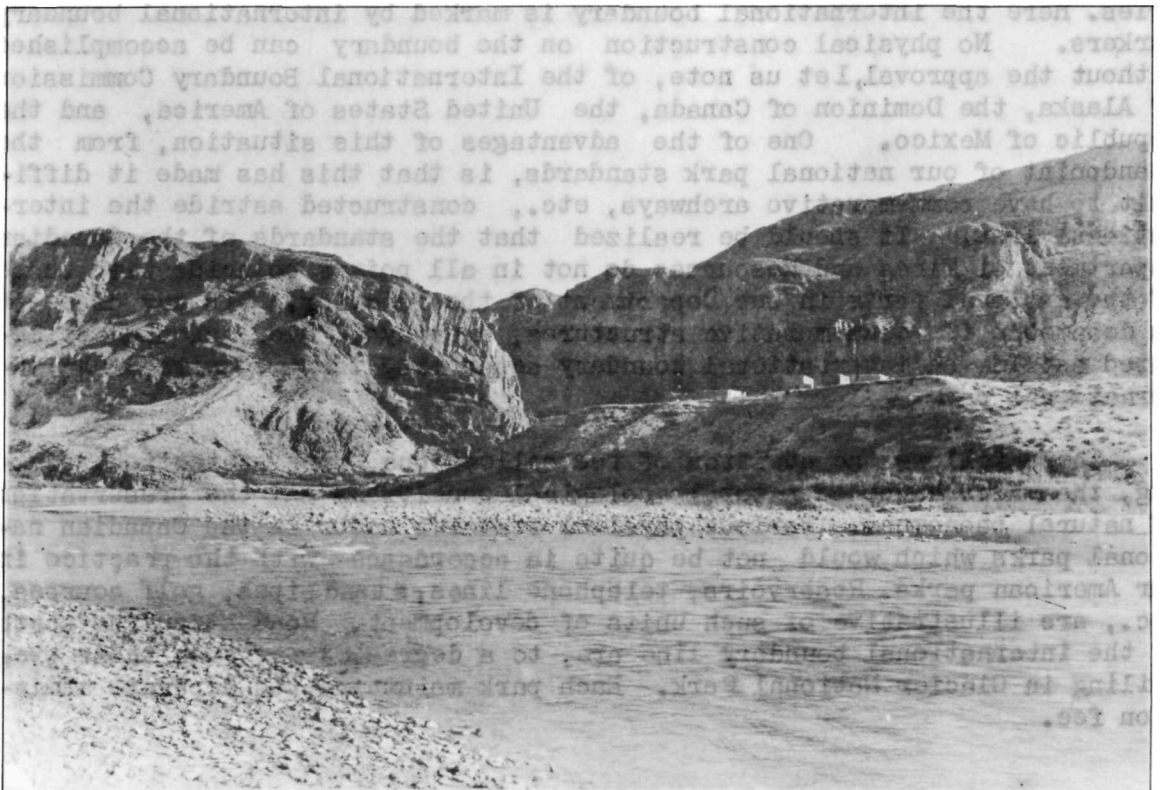
It requires a good stretching of the imagination to bridge the gap between a national park project in its formative study stage, and a concept of the area developed to a stage of reasonable use. From the social angle, the Big Bend International Park project offers intriguing potentialities far beyond that of any other national park project at present before the Service. This dual project will comprise the Big Bend National Park in Texas and The Rio Bravo National Park in the States of Coahuila and Chihuahua, Mexico.

The American unit of 788,000 acres lies within the major bend of the Rio Grande in Brewster County in southwestern Texas. It is the only remaining wilderness area in the largest state in the Union. Its backbone, the Chisos (Ghost) Mountains, one of the southernmost spurs of the Rockies, is surrounded by an arid plateau having an elevation of 3,000 feet. From this base rise the Chisos Mountains to an altitude of 8,020 feet, a truly biological island covered with a varied and distinctive forest and floral growth that includes species only encountered again hundreds of miles to the north and east, and on the Pacific Slope. This area is the outstanding example in the United States of Mexican borderland scenery.

IN MEXICO'S BIG BEND



SIERRA FRONTERIZAS MTS



BOQUILLAS CANYON ENTRANCE

The area on the opposite side of the Rio Grande approved by the Mexican Government as Rio Bravo National Park, will comprise some 900,000 acres of mountainous terrain covered largely by a coniferous forest, and attaining a maximum altitude of 10,000 feet. The two areas are contiguous in that their east and west boundaries join at common points that have been definitely marked at the river by the International Boundary Commission. It is planned that the two areas will be joined by an international bridge, probably at Boquillas.

In July, 1936, Director Arno B. Cammerer headed a committee, approved by Secretary Ickes and appointed by Secretary of State Hull, to work out the details of the international project with Chief Miguel A. de Quevado, of the Departamento Caza y Pesca, under which is the Division of National Parks of the Republic of Mexico, now comprising 36 units.

The international phases of this major project suggest its most intriguing and stimulating aspects. True, our National Park System already includes a unit, the only one of its kind, the Waterton-Glacier International Peace Park, on the Canadian boundary. But, while the latter involves the recreation of peoples of two countries of Anglo-Saxon origin, the Big Bend International Park will be concerned with the intermingling within a zone libra, of two quite distinct races. It will be well to review the problems and resultant policies that have, over a period of years, grown out of the intensive use and experience in the former area.

On the Canadian boundary, within the Waterton-Glacier International Peace Park, the survey line is a "cleared" line separating the two countries. Here the international boundary is marked by international boundary markers. No physical construction on the boundary can be accomplished without the approval, let us note, of the International Boundary Commission of Alaska, the Dominion of Canada, the United States of America, and the Republic of Mexico. One of the advantages of this situation, from the standpoint of our national park standards, is that this has made it difficult to have commemorative archways, etc., constructed astride the international line. It should be realized that the standards of the Canadian Department of Mines and Resources do not in all points coincide with those of the national parks in our Department of the Interior. In any case, it is debatable if commemorative structures, archways, etc., should be located astride an international boundary separating the two units of an international park.

There follows the question of fee collections, fire protection, grazing, the maintenance of natural ecological conditions and the preservation of natural phenomena. Various physical features occur in the Canadian national parks which would not be quite in accordance with the practice in our American parks. Reservoirs, telephone lines, stand pipes, golf courses, etc., are illustrative of such units of development. Road standards north of the international boundary line are, to a degree, lower than those prevailing in Glacier National Park. Each park maintains its separate admission fee.

Waterton Lakes National Park, the Canadian unit, receives its principal patronage from American visitors. Waterton Lake sets astride the international boundary. The launch, "International", plies back and forth from the Canadian end of the lake to the south end which lies in American territory.

The principal hotel development in Waterton Lakes National Park is owned and operated by a subsidiary company of the Great Northern Railway exactly as the Glacier Park Hotel in Glacier National Park is a subsidiary of the Great Northern Railway. Canadian law requires that Canadians be employed in the Prince of Wales Hotel, but, apparently, the operating company has obtained exceptions from this requirement in the employment of a manager and several other key employees.

Since fire hazards in Waterton Lakes National Park are comparable to those in Glacier National Park, the park forces of each area evidence a very aggressive cooperation whenever fire occurs. Since the greatest menace is a fire which spreads from Glacier National Park to the Canadian area, the Canadian citizens extend effective help in suppressing fires on the American side.

Canadian standards regarding the maintenance of natural ecological conditions do not coincide in many ways with our principles. Wildlife standards are not comparable. Grazing is permitted in Canadian national parks and predatory animals are killed. As a specific example, the Canadians kill bears because bears kill the cattle which are permitted to graze in the Canadian parks.

There is a problem which will probably be inherent in any like international area, viz., the tendency of international service clubs on both sides of the boundary to dedicate, rededicate, and assume honor for physical structures and improvements, the credit for which should more properly go to the populations of either or both countries. Such dedications, if desirable, should represent all rather than a single service group, or, more properly, should be government sponsored.

In view of similar areas that will be established in time along international boundaries of this and other countries, it is encouraging to note that administrative problems of the Waterton-Glacier International Peace Park have not been of a serious nature and have readily lent themselves to solution. Superintendent Libbey of Glacier National Park, recently stated, "The Canadian visitors to Glacier National Park represent a very high type of citizenship and their ethnic derivation causes them to be thoroughly in accord with the standards and social customs of our people. The Canadians, being respectful of law and regulation and obedient to law enforcement agencies, the problem of international relations here is an amicable one. It appears my predecessors at this park have been very solicitous in maintaining the very finest international relations, and I and my staff are just as anxious to maintain a continuation of such relations."

But recreation is not the only principal consideration activating the establishment of international areas. Gratifying, indeed, to those interested in the establishment of international areas having historical significance is the provision included in the recent Congressional appropriation act for the Coronado Cuarto Centennial, authorizing the commission to establish an area which will be classified as an international monument on the Mexican boundary at the point where in 1540 Coronado first crossed into what is now the State of Arizona. To the National Park Service has been assigned the task of determining just where this crossing occurred and of recommending appropriate boundaries.

The location of international areas need not necessarily be confined to international boundaries. There are located deeply within our country, those sites with which our past is intimately associated with deeds and lives of people of another nation or of several nations. Who can doubt that Williamsburg in Virginia has interest and importance to both the United States and Great Britain? Who can minimize the efforts of Spain in St. Augustine, Florida; and Spain and Mexico in the Southwest and in California; or the French background of the Mississippi Valley?

Regional Historian Neasham, in a report covering proposed international historic sites, recently stated "The United States Government is desirous of bringing about closer understanding and cooperation between the nations of the world, especially those of the Western Hemisphere. More and more, it is becoming realized that the peoples of the twentieth century have a great deal in common. By emphasizing that which we nations do have in common, we point the way for a greater interdependency and mutual understanding."

The proposed Big Bend International Park, a huge area within which the people of two countries may intermingle without the usual annoyances of customs and other international restrictions, will, indeed, promote a common understanding between neighboring races, now little known to each other. The National Park Service, as an agency of the United States Government, is doing its part in the program of stimulating international understanding and cooperation.

CERTAIN ASPECTS OF THE PROPOSED ESCALANTE
NATIONAL MONUMENT IN SOUTHEASTERN UTAH

By Jesse L. Nusbaum,
Senior Archaeologist.

To those accustomed to motoring at will over improved highways and nearly directly to most objectives, the canyon of the Colorado River through Southeastern Utah and Northern Arizona will always present a most formidable and appalling barrier.

Only within the last fifteen years has the Colorado River been bridged for mechanized travel between Moab, Utah, closely adjacent to the Colorado state line, and Needles, California -- a crowflight distance of approximately 375 miles, but more than 800 miles as measured by the Colorado River.

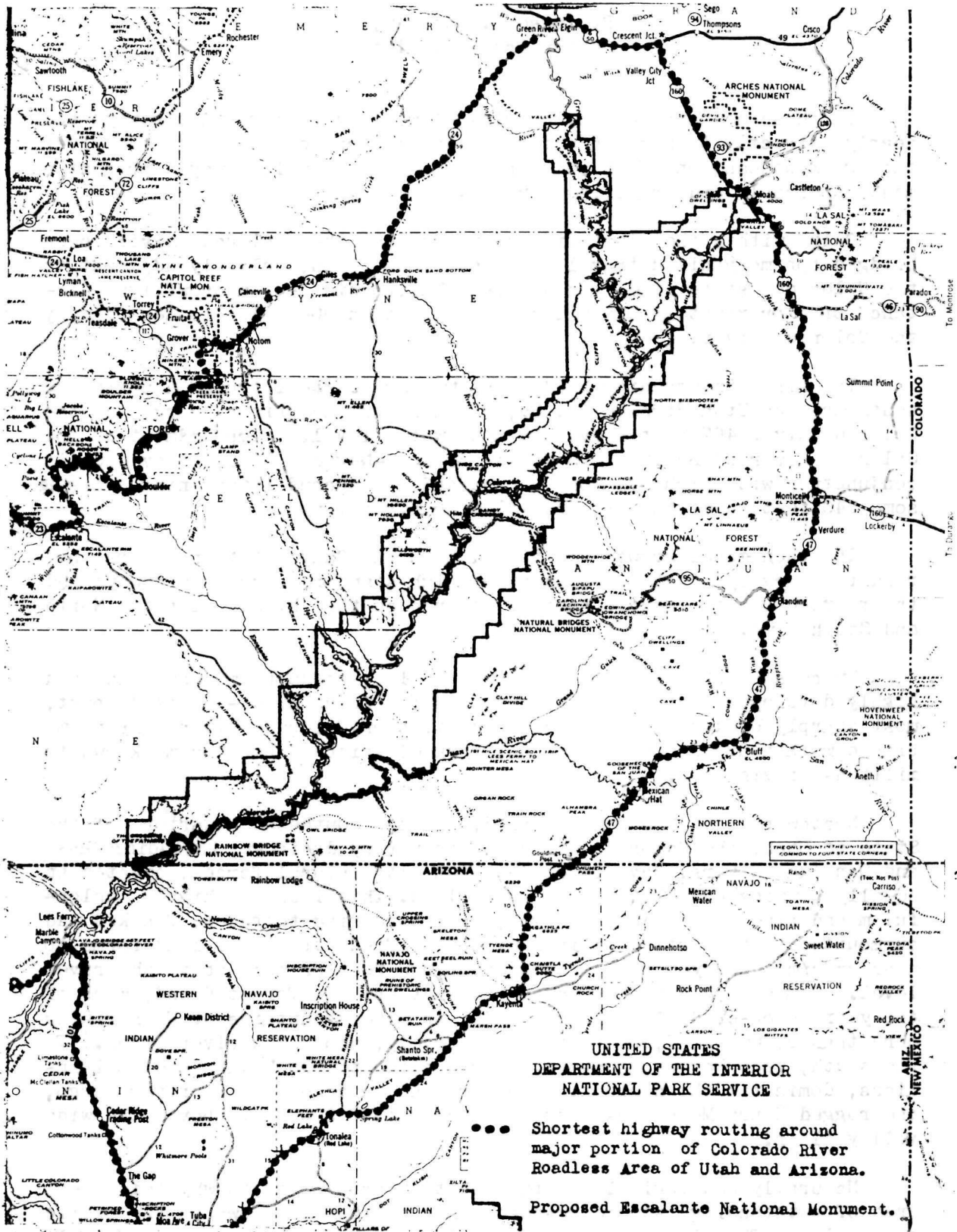
The first intervening bridge was the Navaho steel truss on north and south Arizona-Utah Highway No. 89, which spans the primary gorge of the Colorado River 467 feet above the mean water level. Impoundment of the Colorado River by Boulder Dam on the Arizona-Nevada line, provided in conjunction with Highways Nos. 93 and 466, a second intervening crossing some 540 feet above the old free-flowing river level.

The phenomenal growth of travel to Grand Canyon National Park has resulted largely from development of high-standard access highways and their extension to scenic vantage points on the highly elevated North and South Rims.

By reason of convenient and comfortable access by modern means and highly developed facilities and services for human kind -- this deepest, most sharply broken and spectacular section of Colorado River Canyon embraced within Grand Canyon National Park of Arizona has become known to millions of visitors.

Northward and eastward thereof, in the Southeast quarter of the State of Utah, the Colorado River and tributary drainage, including Green and San Juan Rivers, have in conjunction with natural forces, created an equally amazing and distinctive wonderland. This includes highly colorful meandering inner canyon gorges, with bordering terraces, flanked and surmounted by fantastic pilings of diversified erosional land forms to near or remote canyon rims rising to 3,000 feet or more above the river level. Commanding canyon rims on the east are the forested and, much of the year, snow-clad La Sal and Abajo, or Blue, Mountains of Utah rising more than 9,000 and 7,500 feet, respectively, above the river level. To the south, lone Navaho Mountain, sacred alike to the Navaho and Hopi Indians, dominates the horizon. Westward and adjacent to the river gorge, the rugged Henry Mountains abruptly ascend to 7,500 feet above the wide valley floor.

Naturally and logically, the question arises as to why this great area of outstanding scenic resources has not become known to the public generally. The simple and direct answer may be synthesized in a simple word -- inaccessibility for there are no present roads traversing the area from north to south or east to west.



Recourse to road maps of Utah and Arizona will promote understanding and realization of the immensity of this largest roadless area in the continental United States. Generally referred to as the Colorado River Roadless Area of Utah and Arizona, it has been estimated that it comprises 8,890,000 acres, approximately 13,890 square miles, after eliminating for a width of one mile to their ending, the few entering roads that encroach to, or beyond, the first barrier of this vast desert wilderness.

To encircle it by motor over the most direct highways and unimproved desert and mountain roads, requires in excess of 750 miles of travel. Only for a few miles near the Moab, Utah, crossing of the Colorado can one see from the valley floor the great "Behind-the-Rocks" barrier wall of brownish red sandstone, gashed by the Colorado River, which marks the beginning of the main Colorado River Canyon and the northern boundary on the Colorado of the proposed Escalante National Monument. At no other point on the great circuit can one see, except remotely, any feature directly incorporated within the approximately one-seventh portion or heart of this great roadless area, which comprises 2,000 square miles of highest scenic values bordering the Colorado, Green, and San Juan River Canyons in Utah, and constitutes the proposed Escalante National Monument.

Northward from the confluence the area includes the excessively entrenched meanders of Labryinth and Stillwater Canyons of the Green River for an air line distance of 42 miles to influent San Rafael River; the Canyon of the Colorado, for 33 miles, to its boxing in, on the edge of Moab Valley; and the southern portion of the great intervening plateau promontory, known locally as Great Flat and Gray's Pasture, which separates the rivers. This area, from elevations approximately 3,000 feet above the river levels, provides a comprehensive scenic command of the northern and most highly colorful half of the proposed Escalante Monument.

Southward from the confluence for a crowflight distance of 120 miles the proposed monument area averaging 13 miles in width, is more or less evenly balanced along the medial line of Colorado River meanders, enlarging to embrace the outlying "Little Rockies" of the Henry Mountains, and a greater width of deeply sculptured sandstone ledge on the north side of influent San Juan River. Below the confluence of the San Juan, the area includes only the west and north sides of the Colorado River for an average distance of 5 miles to just below the "Crossing of the Fathers", since the opposite side is incorporated within the Navaho Indian Reservation.

Here at the "Crossing of the Fathers", in the closing months of 1776, Father Escalante, courageous Franciscan Friar, and his small band of followers, finally succeeded in descending to, and crossing, the Colorado River as they returned half-starved and defeated in their futile effort to open a trace from Santa Fe to Monterey on the Pacific Coast. Former Superintendent Tillotson of Grand Canyon National Park, who conducted and reported the initial survey of the Upper Colorado River Canyon for the National Park Service, suggested the name of Escalante for the much larger area then proposed to commemorate this notable first crossing by white man of the Colorado River Canyon.

Fortunately for those who largely depend upon mechanized transport, and that includes most of us, the Division of Grazing of the Department of the Interior, in cooperation with the Civilian Conservation Corps, has within the past two years, progressively developed an entering truck trail from Highway No. 450 about 17 miles north of Moab to serve the interests of the few cattlemen who graze stock atop the great wedge-shaped promontory between the Green and Colorado Rivers.

Branching at the Knoll, about 22 miles west and south of the highway connection, the left-hand truck trail continues southerly approximately six miles to a terminus at Dead Horse Point. This is a protruding and tapering finger of the great plateau which projects a mile or more into the Colorado River Canyon beyond the great bays which it separates, and ends in all but detached sheer-walled, butte-like formations, perhaps a half mile in circumference at its top.

From the periphery of the rim of Dead Horse Point which must be traversed on foot from the connecting neck, scenic command is superb in all directions. About 70 miles of great Colorado River Canyon are visible from this point. Seemingly to greet you, the Colorado River swings northward to complete an entrenched hair-pin meander at the very base of the abruptly towering 3,000 feet high formation on which you stand. In no other area in America, to my knowledge, can one see so vast an exposure of highly eroded red-bed formations, nor greater range of reddish hues from deep maroons through to buffs. Shades of red are favored colors. Plan to reach Dead Horse Point by three o'clock in the afternoon and remain for sunset.

In the course of the past two years, it has been my pleasure to conduct, or accompany, several hundred persons to Dead Horse Point, and remotely from Mesa Verde and elsewhere, to stimulate visits of an equally large number of national park and monument visitors. The views of Colorado River Canyon from Dead Horse Point, alone, have admittedly convinced even the most skeptical of the scenic merit of this National Park Service proposal.

Landscape Architect Merel Sager of the National Park Service, who was in charge of its second field investigating party, in his report to Director Cammerer relating to the proposed Escalante National Monument, stated that:

"The colorful canyons of the Colorado and Green Rivers, without question, constitute the paramount landscape features in the entire area, and their existence alone supplies sufficient justification for the creation of a national park.

"In these days, it seems we hear more about the recreational values of the national parks than we do about their spiritual values. They are related, to be sure, but it is the potential capacity of our national parks, with their inherent endowment, to supply spiritual values which distinguish them from the multitude of other recreational areas. The canyons of the Colorado possess this quality to a marked degree, and for many reasons. There is color, glorious color; 200 miles of countless fantastic, weird monuments and pinnacles, limitless in variety of form, slowly yielding to the relentless forces of wind and water. Here is the Colorado, mysterious, treacherous, forbidding; carving its meandering way through red sandstone canyons, so rugged that they have thus far successfully defied east and west commutation of human kind in the whole of southeastern Utah. Here is desolation, solitude and peace; bringing man once more to a vivid realization of the great forces of nature. Yes, the canyons of the upper Colorado have spiritual and emotional appeal equal to that supplied by most of our national parks."

THE THIRD NATIONAL PARK CONFERENCE

By Hillory A. Tolson,
Regional Director.

The Third National Park Conference of the American Planning and Civic Association will be held at Santa Fe, New Mexico, from October 8 to 10, 1939, inclusive. The Conference will follow the annual meeting of National Park Service officials which is to be held in Santa Fe from October 2 to 7, inclusive. In addition to National Park Service Washington Office and field officials, the Conference will be attended by many outstanding persons interested in conservation and in the preservation of national park and monument areas and historic sites.

Mr. Horace M. Albright, former Director of the National Park Service, who is now President of the American Planning and Civic Association, will preside at the opening meeting of the Conference on Monday, October 9, at the San Fe Municipal Building. Greetings will be extended to those attending the Conference by the Honorable John E. Miles, Governor of New Mexico; Honorable Alfredo Ortiz, Mayor of Santa Fe; and the writer, Regional Director, Region III, National Park Service, whose headquarters is at Santa Fe.

Responses will be made by Honorable Oscar L. Chapman, Assistant Secretary of the Interior, representing Secretary of the Interior Harold L. Ickes; Honorable Robert Fechner, Director of the Civilian Conservation Corps; Associate Director Arthur E. Demaray of the National Park Service; and Superintendent O. A. Tomlinson of Mount Rainier National Park, who is Chairman of the National Park Service Superintendents' Conference.

Following the greetings and responses, an address on "Santa Fe, Where Three Civilizations Meet" will be made by Colonel T. B. Catron, Chairman of the New Mexico Chapter of the American Planning and Civic Association.

During the afternoon of October 9, addresses will be made by Mr. Irvin J. McCrary, City Planner, Denver, Colorado, on "National Parks in the National Plan"; by Mr. Horace M. Albright on "The National Park System and Its Future"; by Mr. Francis P. Farquhar, San Francisco, California, who is the Editor of the Sierra Club Bulletin, on "The Use of Wilderness Areas"; by Mr. T. C. Vint, Chief of Planning, National Park Service, on "National Park Roads and Parkways"; and by Mr. George L. Collins, Land Planning Division, National Park Service, on "Identifying Areas of National Park Caliber". These afternoon addresses will be followed by a visit to several Santa Fe gardens and a buffet supper in the New Mexican Room of La Fonda. During this session Dr. J. Horace McFarland, Past President, American Planning and Civic Association, will preside.

At the evening session on October 9, addresses will be made by Director Robert Fechner of the Civilian Conservation Corps on "The CCC in National Parks and Monuments"; by Chief Forester F. A. Silcox of the U.S. Forest Service on "Administration of Superlative Scenic Areas Primarily Suitable for Recreation"; by Conrad L. Wirth, Supervisor of Recreation and Land Planning, National Park Service, on "National Recreational Area Study"; by Mr. Clifford H. Stone, Director and Secretary, Colorado Water Conservation Board, on "Recreation as a By-Product of Reclamation"; and by Director Earle S. Draper of Regional Planning Studies, Tennessee Valley Authority, on "Planning for Water Recreation on a National Scale".

Dr. H. C. Bumpus, Chairman of the Advisory Board on National Parks, Historic Sites, Buildings, and Monuments, will preside at the morning session to be held at La Fonda on Tuesday, October 10. During that session addresses will be made by Superintendent Frank Pinkley of the National Park Service on "The Southwestern National Monuments"; By Senior Archaeologist Jesse Nusbaum of the National Park Service on "Our Archaeological Heritage"; by Dr. H. E. Bolton, Chairman of the Department of History, University of California, on "History in the National Parks and Monuments"; and by Miss Pearl Chase, Chairman, Plans and Planting Branch, Community Arts Association, Santa Barbara, California, on "Preservation of Natural Beauties and Recreational Values in National Parks".

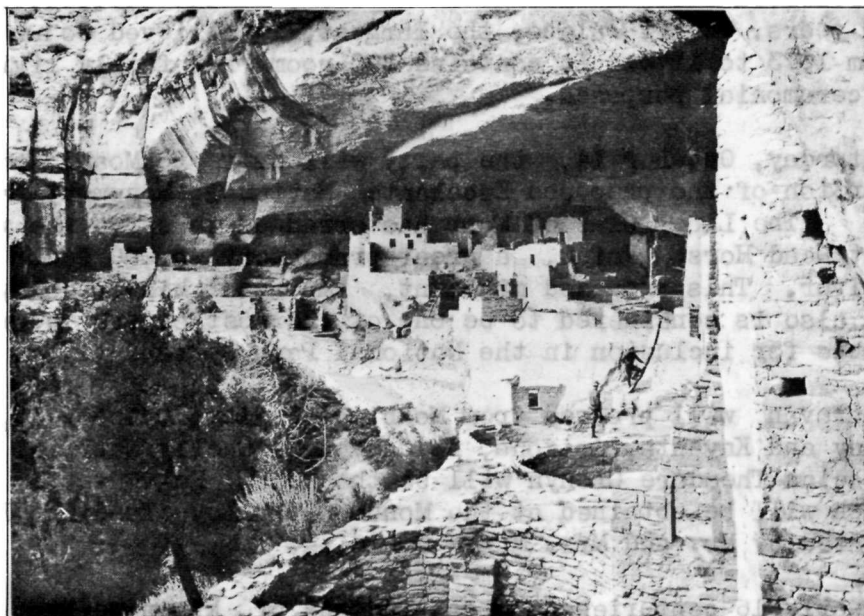
During the afternoon session of October 10 at La Fonda, Colonel Richard Leiber, Vice-President of the American Planning and Civic Association, will preside, and an address will be made by Associate Director Arthur E. Demaray of the National Park Service on "The National Park Service".

Mr. Demaray's address will be followed by an inspection of the new Region III Headquarters building and an afternoon session to be held in the auditorium of the Laboratory of Anthropology, which session will be in charge of Director H. Scudder Mekeel of that Laboratory. After having dinner at La Fonda, an evening session will be held there at which Mr. Horace M. Albright, President of the American Planning and Civic Association, will preside.

On Wednesday, October 11, the American Planning and Civic Association and National Park Service representatives will start a seven-day automobile tour of approximately 1,200 miles to some of the outstanding scenic and archaeological areas in New Mexico, Colorado, Utah, and Arizona. The tour, which is scheduled to leave Santa Fe at 9:00 a.m., Wednesday, October 11, has been planned with a view to giving those who make the trip an opportunity to see some of the outstanding scenic and archaeological areas of the Southwest. After a brief stop at the San Ildefonso Indian Pueblo, the caravan will go to the Bandelier National Monument, about 45 miles northwest of Santa Fe, where Custodian Charles A. Thomas will act as host to the group, to see pueblo ruins and cliffside caves that served as homes for prehistoric Indians. Tyuonyi, the largest of these ruins, has over 200 excavated rooms on the ground floor. It was built about 1460. The Monument was named in honor of the late Adolph F. Bandelier, pioneer Swiss ethnologist, who made extensive study of the ruins in connection with early investigations of Southwestern Pueblo Indians.



Corner of Patio
Region III Headquarters



Cliff Palace, Mesa Verde

In contrast to the ancient dwellings at Bandelier are the lodge, guest cabins, residences, and other buildings recently completed by the National Park Service, using Civilian Conservation Corps enrollees and funds. These structures, built of tufa taken from the hillsides, constitute an excellent example of the type of work being accomplished in the national park areas by that Corps.

The second stop will be at Chaco Canyon National Monument, where Custodian Lewis T. McKinney will be the host. The prehistoric ruins of the monument include Pueblo Bonito, one of the largest apartment houses built anywhere in the world prior to about 1887. It was constructed more than 1,000 years ago and part of it is five stories in height. The 800 rooms are estimated to have housed as many as 1,200 people.

From Chaco Canyon the tour will proceed to Farmington, New Mexico, where the first night will be spent. On Thursday morning, the party will go to the nearby Aztec Ruins National Monument, where Custodian Thomas C. Miller will be the host. Different types of prehistoric ruins are to be seen here and the Great Kiva, or sanctuary, has been restored. Its modern uses include housing of large crowds that assemble annually for Easter Sunday sunrise services.

Mesa Verde National Park, in Colorado, is next on the itinerary and the caravan is scheduled to arrive there for lunch on Thursday. Superintendent Paul Franke has been designated to act as host to the group at Mesa Verde. Prehistoric cliff dwellings, some in caves occupied centuries earlier by the Basket Makers, first agricultural Indians of the Southwest, are the major attraction at that park. They probably are the most notable and best preserved cliff dwellings in America. The earliest dates back nearly 900 years. Cliff Palace, the largest, is believed to have been occupied from 1073 to 1275. It contains 200 rooms for family living and 23 kivas for ceremonial purposes.

On Saturday, October 14, the party will drive to Moab, Utah, to inspect a portion of the proposed Escalante National Monument area near that town. The Lions Club of Moab has arranged to serve the visitors a barbecue at Dead Horse Point, a great promontory 3,000 feet above the Colorado River. This proposed monument, important historically and geologically, also is considered to be one of the most superb scenic areas now available for inclusion in the National Park System.

The caravan will proceed from Moab on Sunday, October 15, via Monument Valley and Kayenta, Arizona, to Canyon de Chelly National Monument, where Custodian Theodore Cronyn will be the host. En route to Canyon de Chelly lunch will be obtained at the Monument Valley Trading Post and Lodge operated by Mr. and Mrs. Harry Goulding.

For nearly 16 centuries American Indians are known to have occupied the de Chelly and del Muerto Canyons. The earliest dated beam from Mummy House Cave indicates that the Basket Makers occupied the area as early as

348 A. D. Beams from White House, the great cliff dwelling there, indicate it was occupied from 1050 to 1300 A. D. Dinner will be served to the members of the touring party on October 15 at the Ganado Mission to the Navajos at Ganado, Arizona, where the group will stay that night and have breakfast on Monday morning, October 16. Dr. C. G. Salsbury will be host to the group at the Ganado Mission.

The caravan next goes through the Hopi Villages of Walpi, Oraibi, and Hotevilla, to Grand Canyon National Park, on Monday afternoon, October 16, where Acting Superintendent H. C. Bryant will be the host. The tour will terminate there the following day. Some of the caravaneers plan to go from Grand Canyon to the Golden Gate International Exposition at San Francisco. For those who plan to return to Santa Fe, stops can be made at Petrified Forest and Walnut Canyon National Monuments. The highway which will be used by them between Lupton, Arizona, and Manuelito, New Mexico, passes near the proposed Manuelito National Monument area.

New Mexico is the only State in the Southwest having a state chapter in the American Planning and Civic Association, but the enthusiastic cooperation which is being given by the people of Arizona and of southern Colorado and Utah in arranging for the automobile tour is indicative of their interest in the Association's purposes, which include the promotion of public understanding and support of national, regional, state, and local planning for the best use of urban and rural land, water, and other natural resources; the advancing of higher ideals of civic life and beauty in America; and the safeguarding and developing for the largest good to the people of natural wonders and scenic possessions and of national and other parks and recreational facilities. The trip will afford an opportunity for people from those States to become better acquainted with the Association's organization, policies, and programs.

The New Mexico Chapter of the American Planning and Civic Association will be host to the American Planning and Civic Association and National Park Service representatives during the Third National Park Conference to be held at Santa Fe on Sunday, Monday, and Tuesday, October 8, 9, and 10. The officers of the New Mexico Chapter are Colonel T. B. Catron, Chairman; Mr. Herbert Maier, Vice-Chairman; Mr. Raymond Higgins, Secretary; and Mr. George M. Bloom, Treasurer. The Committee in charge of the arrangements for the Conference is composed of Mrs. F. C. Wilson, Chairman; Colonel S. W. Anding, and Colonel Catron.

WILDLIFE MANAGEMENT

By Dr. W. B. McDougall,
Regional Wildlife Technician.

The chief ultimate goal of the Wildlife Division of the National Park Service in Region III is the restoration, preservation, and presentation to the public of complete biotic communities in all park areas in the Region. In order that this may be accomplished intelligently and successfully, it is necessary that there be an intimate knowledge of all species of plants and animals now existing in the park areas, their abundance and distribution, and their gross ecological relations.

It also is necessary that it be known, so far as possible, what species formerly existing in the areas are now absent, the reasons for their disappearance, and what factors are favorable or unfavorable to their reintroduction.

It is the belief of this Office that there should be eventually, a complete check-list of all species of plants and animals occurring in the park and monument areas in this Region and that there also should be prepared illustrated keys and descriptions so that the visitors to any area could purchase, for a nominal sum, booklets enabling them to identify the plants and animals that they may chance to see.

With the above generalizations in mind and, for the purpose of conciseness, the remainder of this statement will be presented in numbered paragraphs under the headings: General Conditions in Region III Needing Attention; Some Specific Problems That Are Immediately Urgent; Some Long-time Research Problems; and Conclusions.

General Conditions in Region III Needing Attention

1. In much of Region III the plants and animals are highly specialized to meet desert conditions. Since living things in the desert exist on a very narrow margin of safety, even slight changes in the environment may mean the disappearance of certain species. For that reason, careful supervision by wildlife technicians of all work that may, in any manner, change the environment is essential.

2. In the desert and semi-desert portions of the Region surface water is so scarce that the existence of much of the animal life in comparatively large areas is dependent upon each source. Any proposed appropriation of any natural water supply for human use, or any proposed alteration of any natural water supply in any manner, must be studied by representatives of the Wildlife Division. Failure to do this has in some instances in the past resulted in very adverse effects on animal life.



Antelope Fawns

3. The final preparation of a master plan should, in all cases, be preceded by a wildlife survey in order to prevent serious interference with wildlife. The wildlife survey that has been made in the Big Bend area of Texas well illustrates this need. Here it was found that all of the javelinas are confined to a relatively small area and that the only breeding colony of Tacubaya free-tailed bats known in the United States is in one canyon of the Chisos Mountains. Without this previous knowledge, further developments might easily endanger the existence of these two species.

4. In cooperating with the States in the development of State parks, many artificial lakes are being constructed for recreation purposes. In order that fish and other aquatic life may develop in those lakes in such a manner as to form natural aquatic communities and provide adequate fishing and other recreational uses desired, it is essential that the site be studied by a wildlife technician before construction is started and that later construction and all planting be carefully supervised by a representative of the Wildlife Division.

5. Many of the parks and monuments of this Region were set aside to preserve prehistoric Indian ruins. Continual attention by a wildlife technician is necessary to protect the ruin foundations from damage by rodents and, at the same time, preserve the animal life.

6. All clean-up jobs everywhere call for previous study by a wildlife technician to determine what the effect is likely to be and his careful supervision during the progress of the work. Removal of dead trees, down logs, brush, needles, etc., not only has an adverse effect on animal life, but is definitely detrimental to living trees and other plants as well.

Some Specific Problems That Are Immediately Urgent

1. Very little biological work has been done in the Southwestern National Monuments. It is essential that wildlife surveys be made on these areas as rapidly as possible to facilitate both administrative and informational activities. The custodians, in many cases, now have no way of knowing, or of finding out, what plants and animals occur in the monuments under their supervision.

2. It is especially urgent that the wildlife survey now being made of Organ Pipe Cactus National Monument be carried through to a conclusion to facilitate preliminary reports for a master plan for that area.

3. Further study should be given, as soon as possible, to the problem of reintroducing antelope into the Grand Canyon National Monument area. When domestic cattle have been finally removed and the range has sufficiently recovered, steps should be taken to reintroduce these animals.

4. Further study should be given, as soon as possible, to the problem of introducing antelope into the Pasture Wash area in Grand Canyon National Park; also, further study should be given to the question of the former presence of wild turkeys on the South Rim of Grand Canyon National Park. If their former presence can be definitely established, wild turkeys should be reintroduced.

5. Reports of damage by porcupines and requests for control in Black Canyon of the Gunnison National Monument demand early study by a wildlife technician.

6. A study of the feasibility of introducing beaver into some of the canyons of Navajo National Monument has been requested and must be undertaken at the earliest possible time because of erosion problems that exist there.

Some Long-Time Research Problems

1. The interrelations between living things are extremely complex. This general fact is well known; but our ignorance concerning such interrelations, in the majority of specific cases, is appalling. Wildlife management will never be conducted on an intelligent and sound basis until a great deal more about these interrelations is known.

In most cases in the past control measures, such as poisoning of rodents, has been carried on without any attempt to determine in advance the ultimate effect. An interrelation between rodents and trees is brought out by Mr. Samuel S. Graham of the Bureau of Entomology, in an article published in 1929 in the Journal of Mammalogy. Mr. Graham found, in certain portions of Minnesota and Wisconsin, that mice destroyed fully 50 per cent of the larch sawfly cocoons. Consequently, the poisoning of rodents would, undoubtedly, cause an increase in the damage done by larch sawflies -- an interrelation that could never have been suspected without previous study. It is essential that the Wildlife Division, at the earliest opportunity, initiate long-time researches in these ecological interrelations between living things in our park areas.

2. In order that there may be eventually a clear understanding of the best methods of management of artificial lakes for recreational purposes, there should be undertaken, as soon as possible, researches of the ecological successions of plants and animals in the lakes that have been constructed or are to be constructed, in this Region. Such work could profitably occupy the entire time of one research worker for several years.

3. The Wildlife Division has an opportunity to carry on year-round studies of the feeding and breeding habits of animals in the parks and monuments of this Region. Such studies would not only yield results that

would be invaluable in the administration and management of the wildlife therein, but also would make far-reaching contributions to scientific knowledge. The national parks and monuments are practically the only areas in the United States where complete biotic communities can be made available for such studies.

Conclusions

1. Continued supervision by a wildlife technician is essential wherever work is going on that may, in any manner, alter the environment in any park or monument in Region III.

2. Wildlife surveys should be carried on in every park and monument in Region III as early as it can be done.

3. Illustrated keys and descriptions for identifications of both plants and animals should be prepared for every park and monument in Region III.

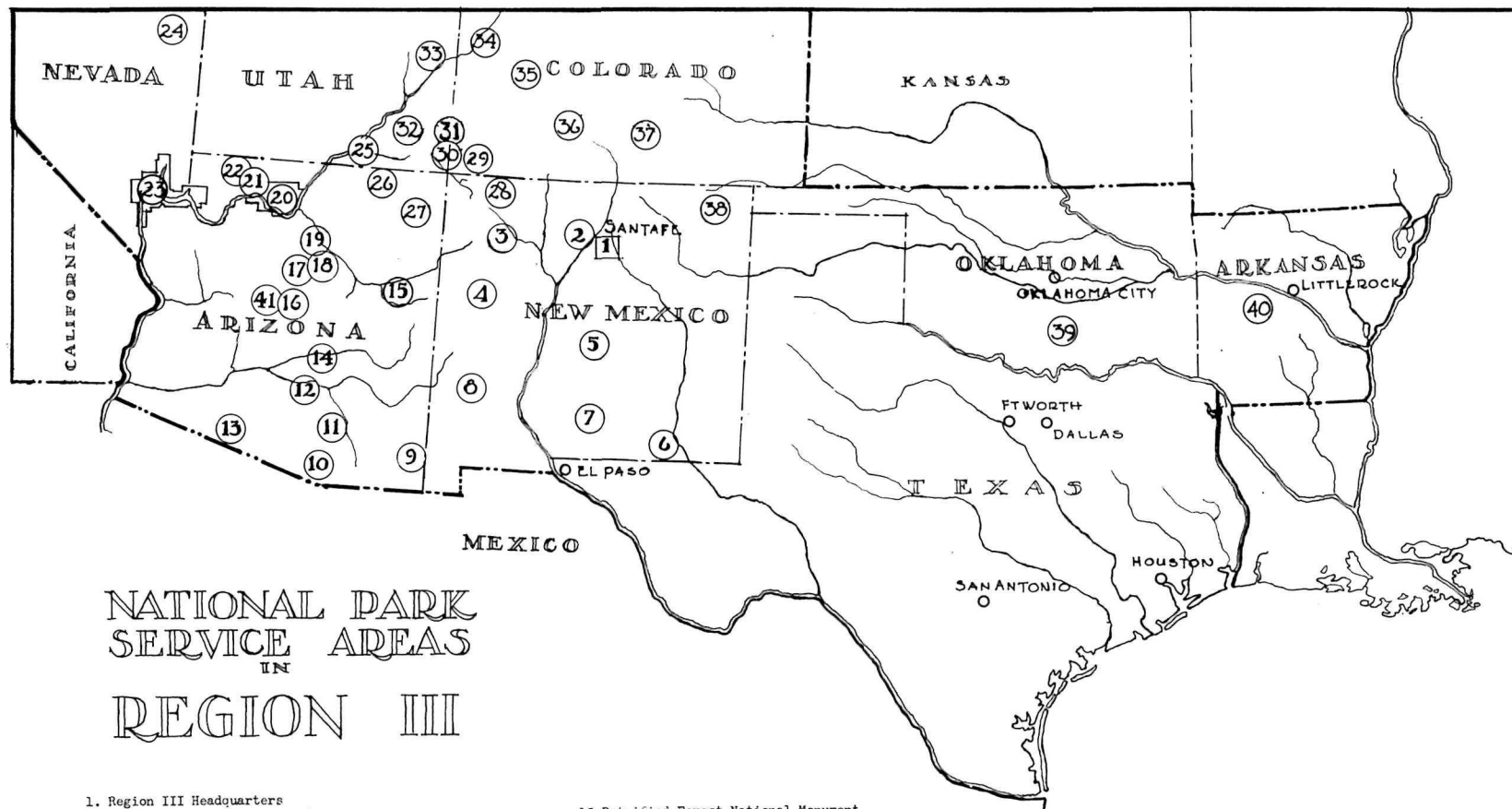
4. A long-time research program should be definitely planned and undertaken at the earliest possible time.

5. Since there are only two wildlife technicians in Region III, it is obvious that the above-proposed program can be carried out only with the help and cooperation of all park naturalists and wildlife rangers as well as of superintendents, administrative inspectors, and all other employees who may be in position to cooperate with them.

Organ Pipe Cactus National Monument, in southwestern Arizona, preserves a plant and an animal species found nowhere else in the United States.

The organ pipe cactus is related to the giant saguaro, but has multiple stems, sometimes as many as twenty stems springing from the same root.

The Sonoran bighorn sheep, which differs from the bighorn of the Rocky Mountains, is nearly extinct. It is found only in the mountains of northern Sonora, Mexico, and in southwestern Arizona.



1. Region III Headquarters
2. Bandelier 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. Tunigoot National Monument

