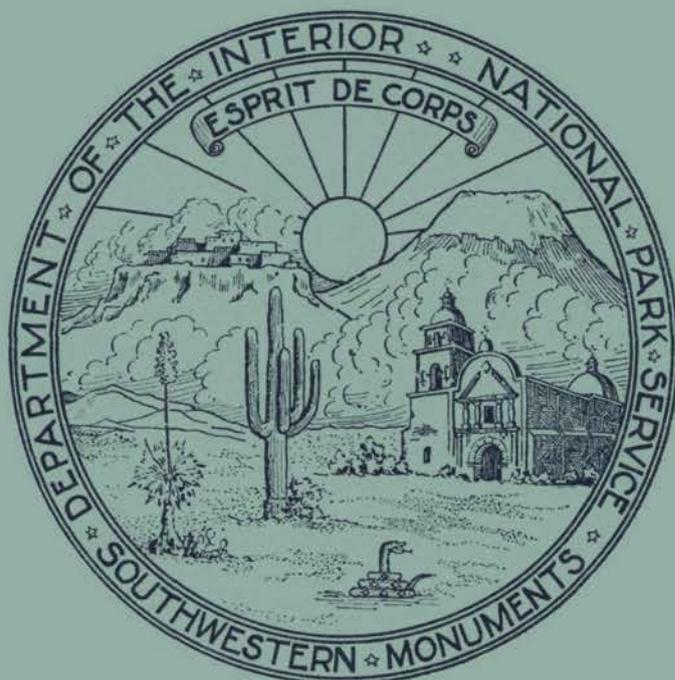


SOUTHWESTERN MONUMENTS

MONTHLY REPORT



F E B R U A R Y - - - 1 9 3 8

DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

SOUTHWESTERN MONUMENTS
 FEBRUARY, 1938, REPORT
 INDEX

OPENING, by Superintendent Pinkley 91

CONDENSED GENERAL REPORT

Travel	93	400 Flora, Fauna, and Natural	
000 General.	94	Phenomena	97
100 Administrative	94	500 Use of Monument Facilities	
200 Maintenance, Improvements		by the Public	97
and New Construction	95	600 Protection.	98
300 Activities of Other Agencies		700 Archeology, Hist., Pre-Hist..	98
in the Monuments	96	900 Miscellaneous	98

REPORTS FROM MEN IN THE FIELD

Antelope	147	Chiricahua CCC.	107
Arches	141	El Morro.	115
Aztec Ruins.	118	Gran Quivira.	112
Bandelier.	145	Montezuma Castle.	134
Bandelier CCC.	149	Natural Bridges	130
Bandelier Forestry	150	Navajo.	121
Birds at Montezuma Castle.	139	Pipe Spring	109
Canyon de Chelly	142	S.W.M. New Queen.	151
Capulin Mountain	122	Tonto	123
Casa Grande.	125	Tumacacori.	113
Chaco Canyon	132	Walnut Canyon	108
Chiricahua	105	White Sands	99

HEADQUARTERS

Branch of Education.	152	Visitor Notes	156-a
Mobile Unit.	156	Visitor Statistics Chart.	156-c

THE SUPPLEMENT

Archeological Report on the Stabilization of Tyuonyi in Bandelier	
National Monument, by J. W. Hendron.	176
Major Inscriptions at El Morro, by Robert R. Budlong	157
Ruminations, by the Boss	182
Second Geological Report on Canyon de Chelly National Monument,	
by Charles N. Gould.	173
Tumacacori Museum.	175

SOUTHWESTERN MONUMENTS PERSONNEL

HEADQUARTERS, Southwestern Monuments, Coolidge, Arizona: Frank Pinkley, superintendent; Hugh M. Miller, assistant superintendent; Parke W. Soule, chief clerk; J. H. Tovrea, assistant engineer; Dale S. King, assistant park naturalist; Charlie R. Steen, junior park archeologist; Natt N. Dodge, junior park naturalist; Millard Singerman and Luis A. Castellum, clerk-stenographers; Ira G. Goodwin, CCC clerk; F. E. Stonehocker, machinist; J. L. L. Baehr, utility man.

<u>FIELD STATIONS</u>	<u>VISITORS, 1937</u>	<u>ACRES</u>
1. <u>Arches</u> , 1,000, Moab, Utah, Harry Reed, custodian - - -		4,520.00
2. <u>Aztec Ruins</u> , 14,303, Aztec, N. M., T. C. Miller, cust. -		25.88
3. <u>Bandelier</u> , 14,380, Santa Fe, N. M., C. G. Harkins, - - -		26,026.20
custodian; George H. Sholly, grader operator.		
4. <u>Canyon de Chelly</u> , 1,422, Chin Lee, Ariz., Johnwill Faris, 83,840.00		
custodian.		
5. <u>Capulin Mountain</u> , 26,100, Capulin, N. M., H. Fair, cu. -		680.37
6. <u>Casa Grande</u> , 33,661, Coolidge, Ariz., A. T. Bicknell,		472.50
custodian; David J. Jones, park ranger; Jimmie Rodgers, Stremple Coyle, Marvin Hale, and Teddy Savage CCC guides and helpers.		
7. <u>Chaco Canyon</u> , 8,014, Chaco Canyon, N.M., L.T. McKinney, cu.	21,512.37	
8. <u>Chiricahua</u> , 9,228, Douglas, Ariz., Frank L. Fish, cust.;	4,480.00	
Enrollee Savoy and CCC Guides Homer Bennett and William Stone.		
9. <u>El Morro</u> , 2,298, Ramah, N.M., R. R. Budlong, cust. - - -		240.00
10. <u>Gila Cliff Dwellings</u> , 250, Cliff, N. M., no custodian - -		160.00
11. <u>Gran Quivira</u> , 4,414, Gran Quivira, N. M., G.L. Boundey, cu.		610.94
12. <u>Hovenweep</u> , 500, in charge of T.C. Miller, Aztec, N.M. - - -		285.80
13. <u>Montezuma Castle</u> , 9,813, Camp Verde, Ariz., Earl Jackson,		520.00
custodian; Jesse D. Jennings, park ranger.		
14. <u>Natural Bridges</u> , 740, Blanding, Utah, Zeke Johnson, cu. -	2,740.00	
15. <u>Navajo</u> , 329, Kayenta, Arizona, John Wetherill, custodian;	360.00	
Milton Wetherill, park ranger-historian.		
16. <u>Organ Pipe Cactus</u> , 5,000, Ajo, Ariz., no custodian - - -	330,670.00	
17. <u>Pipe Spring</u> , 1,042, Moccasin, Ariz., Leonard Heaton, cu. --	40.00	
18. <u>Rainbow Bridge</u> , 300 Tonalea, Ariz., no custodian - - -	160.00	
19. <u>Saguaro</u> , 20,000, Tucson, Arizona, no custodian - - - -	63,284.00	
20. <u>Sunset Crater</u> , 10,000, Flagstaff, Ariz., P. Beaubien, in	3,040.00	
charge.		
21. <u>Tonto</u> , 5,368, Roosevelt, Ariz., T. Onstott, in charge - -	1,120.00	
22. <u>Tumacacori</u> , 18,472, Box 2225, Tucson, Ariz., L. Caywood, cu.	10.00	
23. <u>Walnut Canyon</u> , 10,772, Flagstaff, Ariz., P. Beaubien, rang.	960.00	
24. <u>White Sands</u> , 91,532, Alamogordo, N. Mex., Tom Charles,	142,987.00	
cust.; J. B. Felton, park ranger, Joe Shepperd, grader operator.		
25. <u>Wupatki</u> , 2,080, Flagstaff, Ariz., P. Beaubien, in charge - -	35,865.00	
26. <u>Yucca House</u> , 400, Cortez, Colo., T.C. Miller, Aztec, N.M.	9.60	
Total--291,426 visitors last year, 1,132 sq. mi.;		724,619.96

OPENING

By Superintendent **Frank Pinkley**,
Southwestern Monuments,
Coolidge, Arizona.

Dear Mr. Director:

The mild winter, which we have been having through the district of the Southwestern Monuments, has held through February and is reflected somewhat in the increase in visitors over February of last year when the upper levels of the district were pretty well snowed in.

We have had a good run of winter visitors in the lower levels of our district, El Paso, Tucson, and Phoenix, but curio stores and luxuries trades tell me they are not spending as freely as was expected.

Unemployment has been on the increase, cotton picking being over and the copper mines further easing men out because of market conditions. The situation is not critical and shopping crowds on the streets of the towns testify that there is still considerable money in circulation.

We have had no personnel changes during the month. Papers are in transit looking to filling three vacant positions and we are beginning to stir up the matter of filling some of our temporary summer positions. We were undermanned again at Aztec where slowness of getting papers through has caused Mr. Miller to put in considerable overtime again this month. Mr. Caywood, of Tumacacori, went to the hospital in Nogales for an operation and is reported getting along all right. Miss Hortensia Espinosa and Mr. Dale King were married and spent a couple of weeks honeymooning on the west coast of Mexico.

We have received an allotment for rebuilding at Bandelier the shop which was destroyed by fire and are putting out bids for the materials. Allotments for replacing tools destroyed have not yet come through, due to the need of special legislation, and the CCC camp is badly handicapped for lack of shop tools and equipment.

Prospects seem good for us to get back some of our impounded appropriation and we are very happy at the outlook. It will put us on a more efficient basis, the expenditure of the 10% of impounded money probably increasing our efficiency 20%. Justifications for the return of the money were submitted during the month.

Work has gone on during the month covering our land problems at Saguaro, permit problems at Organ Pipe and Chaco, and extension problems at Chiricahua. It looks as if the Chiricahua extension may be in line for solution within the next month or two.

A report was made on the water problem at El Morro and we are

OPENING (CONT.)

awaiting a decision on it. Studies of the water problem at White Sands have been continued and there is hope of potable water in the near future.

Visitors have continued to interest us as much as ever during the past month. We are puzzled by a sudden speeding up of the visitors at Casa Grande; they were in a hurry and had a little less time to spend than in December and January. We have not found the cause.

The Desert Trail, a study in self-guiding trails, which we planned to start at Casa Grande, lagged on the ways and has not yet been launched. We are hoping now to get it started in March. Tommie Onstott, temporary ranger at Tonto, is also planning some studies on a self-guiding trail. He has an ideal short trail of only a hundred yards, in mind. It leads off his parking area and will be useful as a means of keeping visitors busy while he is out on a trip to the ruins with another party.

The museum cases at Casa Grande were overhauled a little during the month. They are not yet satisfactory and further study will have to be made on them.

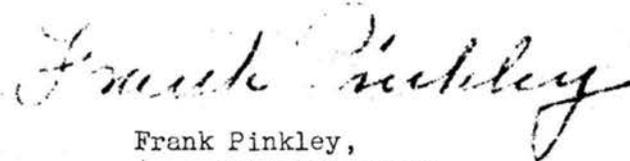
Dr. Potter was out from the Washington Office during the month. He made some studies of the geological problems of the White Sands National Monument which will be used in the installation of the museum exhibits at that monument.

During the month, we received reports on the studies of Dr. Gould and Dr. McDougall covering water supplies, flora and fauna of Organ Pipe Cactus National Monument. It looks as if obtaining a water supply at that monument may not be as difficult as we had feared.

The proposed Tuzigoot Monument was delayed again by flaws in the deed and will require considerably more work before it is in shape for a proclamation. Unfortunately the local Arizona papers jumped the gun on us and announced it several months ago as having been made a national monument. Since that time we have had a steady run of inquiries for information concerning it.

On the whole the month has been a good one and, while we expect March to drop off slightly in numbers of visitors, we are quite sure there will be no drop in problems, so we are looking forward to plenty of work.

Cordially,



Frank Pinkley,
Superintendent.

CONDENSED REPORT

IN WHICH ARE GIVEN HIGHLIGHTS OF THE MONTH

Coolidge, Arizona,
March 1, 1938.

The Director,
National Park Service,
Washington, D. C.

Dear Mr. Director:

The Condensed Report for the month of February, 1938, follows:

<u>TRAVEL</u>	Feb. <u>1938</u>	Feb. <u>1937</u>	Jan. <u>1936</u>	Travel Year <u>To Date</u>
Arches	435.	--	--	296
Aztec Ruins	810	214	278	3,755
Bandelier	221	260	252	2,697
Canyon de Chelly	45	--	5	257
Capulin Mountain	750	700	500	3,000
Casa Grande	4,227	3,845	3,043	17,070
Chaco Canyon	301	91	379	986
Chiricahua	402	205	300	2,694
El Morro	50	--	--	590
Gila Cliff Dwelling	*--	--	--	25
Gran Quivira	135	109	129	848
Hovenweep	*--	--	--	--
Montezuma Castle	466	313	436	2,907
Natural Bridges	*--	--	--	147
Navajo	3	--	--	81
Organ Pipe Cactus	*700	--	--	3,500
Pipe Spring	80	5	137	640
Rainbow Bridge	*--	--	--	66
Saguaro	*3,500	1,891	2,000	11,600
Sunset Crater	*150	--	74	1,633
Tonto	684	700	724	2,223
Tumacacori	1,795	2,864	1,512	6,288
Walnut Canyon	127	--	187	2,013
White Sands	5,704	4,460	3,794	25,435
Wupatki	39	--	70	352
Yucca House	*--	--	--	70
Totals	<u>20,224</u>	<u>15,657</u>	<u>13,859</u>	<u>89,173</u>
*Estimated				

Probably due to the mild and open winter experienced throughout the Southwest, travel has held up well during the month, exceeding

CONDENSED REPORT (CONT.)

that of February, 1937, and also that of January, 1938. Travel is discussed in detail under the heading, "Visitor Notes" on page 157 of this report, and a comparative chart is shown on page 159.

000 GENERAL

010 Matters of Unusual Interest or Importance.

Aztec Ruins: An American Legion and Auxilliary Convention required temporary transfer of two custodians from other monuments to aid in handling the crowd (see p. 119-21). Stabilization work is imperative in the near future (see p. 120).

Arches: Plans for developments in Utah by the D.& R.G.W. Railroad that will increase travel to Arches are underway (see p. 141).

Bandelier: An official weather recording station was established this month (see p. 145).

Casa Grande: Preservative used in protecting ruin walls has not proved satisfactory (see p. 126).

Chiricahua: Interest in winter sports is growing and will probably result in pressure to keep road open over mountains (see p. 104).

White Sands, Aztec, Casa Grande: Easter Sunrise Services will be held on these monuments (see p. 100).

Desert Monuments: Indications point to an early spring with a profusion of desert flowers. Visitors interested in the floral display should plan to come early.

020 Weather

For the third month, reports from the majority of monuments indicate warm, mild weather. Navajo and Walnut Canyon register stormy and unpleasant conditions and several areas report cold and wind, and snow has been rather general during the latter part of the month. Several custodians are enthused over prospects of more moisture than during several springs past while others are pessimistic regarding precipitation and range conditions in their vicinities. Aztec Ruins and Capulin Mountain report the most delightful winter on record.

023 In Nearby States

Capulin Mountain: Precipitation has been general for 1,000 miles east and south thoroughly wetting the notorious "Dust Bowl" area (see p. 123).

100 ADMINISTRATIVE

123 Visits by National Park Service Personnel.

Aztec Ruins: C. Carter, Chuck Richey, Mrs. J. Miller.

Bandelier: H. A. Montgomery, Clark Wells, A. B. Stevens.

Casa Grande: C. N. Gould, W. B. McDougall, F. Nichols, F. Eastman, F. C. Potter, Wm. Leicht, C. Hetherington, Wm. Stevenson, and Wm. Burnham.

Chiricahua: C. N. Gould, W. B. McDougall.

CONDENSED REPORT (CONT.)

Montezuma Castle: C. N. Gould, W. B. McDougall.

Organ Pipe: C. N. Gould, W. B. McDougall, N. N. Dodge.

Gran Quivira: Dr. F. C. Potter.

Tonto: C. N. Gould, W. B. McDougall, F. C. Potter.

Tumacacori: Dale King, Luis Gastellum.

White Sands: L. E. Bennett, C. Richey, F. C. Potter, J. E. Kell.

140 Labor Situation

Montezuma Castle: Due to the curtailment of mining operations in the copper districts, many men have been laid off.

150 New Equipment

Bandelier: Boring Bar and Grinder (see p. 129) and weather recording equipment (see p. 145) have been received.

Casa Grande: One new Chevrolet pick-up for the custodian (see p. 129).

Chaco Canyon: A portable paint spray outfit has been sent out from headquarters (see p. 129).

El Morro: Weather recording equipment has been shipped but had not been received by the custodian (see p. 116).

170 Plans, Maps, and Surveys

White Sands: Plans for the geological display for the museum are being prepared by Dr. F. C. Potter (see p. 104).

Tonto: A nature trail is being laid out (see p. 124).

Casa Grande: Plans for a "Desert Trail" are nearly finished.

Chiricahua: Preliminary plans for the Fire Atlas are being worked out (see p. 106).

Montezuma Castle: A large map of the valley has been prepared by the custodian (see p. 137).

El Morro: Data on nearby wells have been obtained by the custodian preliminary to a program of obtaining potable water for the monument.

180 Circulars, Placards, and Publicity Bulletins.

Casa Grande: Fifteen hundred of the new folders have been distributed to visitors (see p. 126).

El Morro: Detailed information to form the basis of a radio dramatization went forward to Washington, D. C. (A portion of the material appears on page 157 of this month's Supplement).

White Sands: Movies of the Sands are to be shown in the Atlanta, Georgia, public schools (see p. 99-100). In addition to other publicity, a story on the Sands is carried in the March "Desert Magazine", and the cover picture, poem, and a page spread of the January-February "Park Service Bulletin" were devoted to White Sands National Monument (see p. 100).

Tonto and Casa Grande also came in for publicity in the March "Desert Magazine".

200 MAINTENANCE, IMPROVEMENTS, AND NEW CONSTRUCTION

210 Maintenance, Unusual

Pipe Spring: Suckers have been cut from cottonwood trees.

Walnut Canyon: Five cars were pulled out of the mud (see p. 108).

CONDENSED REPORT (CONT.)

- White Sands: An unusual amount of sand has been removed from the road because of the drifting by winds (see p. 103).
- 220 Improvements
- Navajo: Fifty yards of trail retaining wall have been built.
- Casa Grande: The temporary darkroom has been renovated and put into use. Creosote bushes have been transplanted to screen the sewage pump shelter (see p. 129).
- Bandelier: A flag pole and drinking fountain have been installed near the Administration Building (see p. 146).
- Tonto: Two hundred yards of trail have been widened, guttered, and surfaced (see p. 124).
- White Sands: Considerable planting has been done by the R. D.
- 231 CCC Construction
- Casa Grande: Fifty five man days have been put into warehouse construction and 136 man days on shop construction. Walls of the latter are up to the plate line (see p. 129).
- Bandelier: The storage reservoir project has been completed. Wall construction on the Lobby and Sales Room Unit is up to lintel height. The Employees Dormitory is ready for the roofing felt (see p. 149).
- Chiricahua: Employees Residence is 90 percent complete, extension of the utility area project is 40 percent complete, and the masonry wall is 30 percent complete. Four hundred square yards of banks have been sloped, one fourth mile of truck trail surfaced, and two miles of horse trail maintained. Snow removal has required 30 man days. (See p. 107).
- Pipe Spring: Five trucks and 50 men were utilized for two days in filling a wash (see p. 111).
- 232 R. D. Construction
- White Sands: Work on the Administration Building, museum, and utility area are progressing well (see p. 101).

300 ACTIVITIES OF OTHER AGENCIES IN THE MONUMENTS

320 Cooperating Agencies

321--Government

Headquarters: The U. S. Forest Service officials have aided in facilitating the obtaining of scientific material for the University of Colorado Museum. Arizona State Fish and Game officials have been helpful in planning to restock several of the monuments with quail.

Canyon de Chelly: The Soil Conservation Service has done some planting and fencing.

El Morro: The New Mexico State Game Warden is providing quail for restocking the monument (see p. 117).

322--Non-Government

Headquarters: Mr. J. E. Fast has been invaluable in aiding with the bird-banding program and records this month.

350 Donations and Accessions

Pipe Spring: Pioneer relics consisting of one flatiron handle,

CONDENSED REPORT (CONT.)

one earthen platter, one butter bowl, one cook stove, and one early Piute Indian basket have been received (see p. 111).
Tumacacori: An Indian thrashing paddle and bread board have been donated to the museum (see p. 114).

400 FLORA, FAUNA, AND NATURAL PHENOMENA

410 Ranger, Naturalist and Guide Service

Natural Bridges: The custodian has spent the month in the city painting word pictures of the monument (see p. 131).

White Sands: People are expressing a considerable interest in the geology of the monument (see p. 101).

420 Museum Service

Montezuma Castle: A model of a cliff room is under way (see p. 137). A question as to the value of museum labels is brought up by the custodian (see p. 138).

440 Insect Control

Chiricahua: Several "bug trees" have been noted (see p. 106).

460 Birds

Bancelier: The bird banding report appears on page 146.

Capulin Mountain: Two species of eagles have been seen (p. 123).

Casa Grande: Nesting activities of Cactus Wrens and horned owls are influencing visitor records (see p. 128).

El Morro: The State Fish and Game Department of New Mexico has promised to provide Scaled Quail for restocking the monument.

Gran Quivira: Birds are increasing in number (see p. 113).

Headquarters: The bird-banding report appears on page 155.

Navajo: Bird observations are recorded on page 132.

Montezuma Castle: Betty Jackson's report is on page 139.

Pipe Spring: The report of bird banding appears on page 110.

Tumacacori bird banding records are on page 114.

Walnut Canyon: A record of annual returns is shown on page 108-9.

470 Animals

Capulin Mountain: Deer are numerous and the porcupines are gradually being reduced to normal (see p. 123).

Montezuma Castle: Frogs are out of hibernation. Jackrabbits are apparently on the decrease (see p. 102).

480 Miscellaneous

El Morro: Spectacular northern lights were seen Feb. 22 (p. 116).

Chiricahua: Horseback service is planned (see p. 107).

Chaco Canyon: Threatening Rock continues to move (see p. 133).

Canyon de Chelly: Rabies threatens Indian dogs (see p. 143).

500 USE OF MONUMENT FACILITIES BY THE PUBLIC

510 Increase or Decrease of Travel

Tumacacori: This monument is the only one of the group registering a large decrease. For discussion see pages 157-159.

530 Newsworthy Visitors

White Sands: W. S. Bell, D. W. Wocton, B. D. Butler, U. R. Beeson, and F. K. Vreeland.

Casa Grande: Dr. Chas. Mayo, Donald Culross Peatie, Clarence Buddington Kelland, and Kenneth Chapman.

CONDENSED REPORT (CONT.)

540 Public Camps

Casa Grande: Picnic grounds and trailer camp popular (see p. 127).

Gran Quivira: Sunday visitors have necessitated the establishment of a picnic area (see p. 113).

White Sands: The problem of keeping a sufficient supply of wood for campers is becoming acute (see p. 100).

600 PROTECTION

610 Police

Aztec Ruins: A guilty conscience caused the return of a museum specimen stolen last summer (see p. 119).

White Sands: Afforded haven from bandits (see p. 103).

620 Fire

Bandelier: a pre-suppression program is under way (see p. 150).

640 Destruction of Predators

Chiricahua: Five house cats have been killed (see p. 106).

Pipe Spring: Two house cats have been killed (see p. 111).

650 Signs

Walnut Canyon: Painting signs has taken considerable time (p.108).

Capulin Mountain, Chiricahua, de Chelly: The Uniform Distress Signal signs have been posted.

700 ARCHEOLOGY, HISTORY, AND PRE-HISTORY

900 MISCELLANEOUS

MAIL COUNT

Incoming:

Official	1,554	
Personal	<u>1,194</u>	
Total incoming		2,748

Outgoing:

Official only	<u>2,743</u>	
Total outgoing		<u>2,743</u>
TOTAL POSTAL MAIL		<u>5,491</u>

Telegrams:

Incoming	21	
Outgoing	<u>11</u>	
Total telegrams		<u>32</u>

GRAND TOTAL PIECES OF MAIL HANDLED 5,523

Cordially,

Frank Pinkley

Frank Pinkley,
Superintendent.

FIELD REPORTS

FROM THE MEN ON THE JOB

WHITE SANDS

By Tom Charles, custodian,
Alamogordo, New Mexico.

Visitors this month, 5,704; total since October 1, 25,435.

Despite the fact that much of the month has been stormy and cold in other sections of the country and that travel, as a whole, has been bad, White Sands has had a good month. This applies especially to those whom we are prone to call the "better class", those with the larger automobiles. The wealthy people of El Paso and surrounding cities have visited us more than usual and many of them for the first time. A common statement among them is, "I have known about the Sands for forty years but I had no idea it was any thing like this out here."

Their friends from the east whom they have brought out to see the Sands are invariably loud in their praise, so it seems that we are gradually breaking down the feeling among local people that it is just another sand pile and their friends are helping us to convince them that, "we have something here".

I was especially pleased to have Dr. W. S. Bell, Director of Visual Education for the schools of Atlanta, Georgia, with us this month. School teachers tell me that Atlanta leads in visual education and Dr. Bell advised us that he used the Carlsbad movie reels last month and expects to use the White Sands reel in all the rooms of the Atlanta schools this month.

Another interesting visitor was D. W. Wootton of Chicago, manager of Vacation Tours of the Rock Island Railroad. Mr. Wootton was passing through town with his friend, Barridge D. Butler, owner of WLW, the Prairie Farmer Station with new \$250,000.00 transmitting equipment in Chicago. He is also connected with KOY of Phoenix. Mr. Butler was interested in having literature on the White Sands, so I sent him all I had and then turned him over to Leo McLatchey of the Regional Office. Mr. Wootton expects to put a White Sands window exhibit in the Rock Island offices in Chicago this spring so we are calling on Fanning Hearon in the Washington office for help on this project.

Another interesting and interested visitor was U. R. Beeson, assistant state superintendent of schools for New Mexico. Mr. Beeson does most of the field work for the State Superintendent's office, carries with him movie reels, and lectures to school children on things of interest in the state. I am delighted that he likes the Sands and that he expects to come and visit us on our annual playday, March 26.

WHITE SANDS (CONT.)

We also had a fine article in Desert Magazine, published in El Centro, California. Louise Rutz of Las Cruces was the author.

These four were probably our tops in publicity contacts for the month, although in Chamber of Commerce circles, in state and local papers, we received much favorable comment.

Spring parties are beginning at the Sands. Last week a car load of visitors from Ohio and another from Pennsylvania stayed over night at the turn-around and wrote in the registration book that they stayed over night to see the sunset and the sunrise and they were beautiful, but their water supply froze up. Nearly every warm night now has its party and the meager supply of wood that Joe tries to keep at the fire places is usually gone in the morning.

Reverend Stradley of the First Methodist Church informs me that on Monday, March 21, his organization will hold the Pastor's Retreat at the White Sands. This meeting is to be in commemoration of the two-hundredth anniversary of the founding of the church and at least 50 ministers should be in attendance. No one but ministers will be there.

On March 26, the Chamber of Commerce will be host to the school children of all the surrounding country, in their annual Playday at the Sands. County School Superintendent Briscoe says that at least ten schools are already preparing their folk dances; W. G. M. Buckish, superintendent of schools on the Mescalero Indian Agency, will have his boys there for the Indian dances around the camp fire, while the Alamogordo school will have its 100 piece band in uniform. Spontaneous athletics will furnish the bulk of the program.

On April 17, the ministers of the surrounding communities will hold their sunrise service in the Heart of the Sands. Last year there were 75 cars there at sunrise.

The prospects are that we will have a reasonably busy time at White Sands through the spring season.

State engineers are flagging the proposed highway in front of the main building and on for 22 miles toward Las Cruces. If these flags and the "blue tops" mean anything, I presume the last gap of this road will soon be called for construction.

So it is all good news from the Sands this month. Even the White Sands Theater has been unusually kind to us. Dr. Potter, our "special" geologist, went to the picture show one night, all unthinking that it was bank night, of course, and the management called him to accept a gift of \$100. The Doctor is rather straight-laced as you know, but Jim and I finally prevailed upon him to take it. The Doctor will no doubt bear witness that we are kind to our technicians.

WHITE SANDS (CONT.)

Incidentally, I might say we all did pretty well in the current issue of The Desert Magazine, getting about four articles or notices in it. Natt Dodge's picture of the P. Weaver inscription on the wall of Casa Grande is fine, and we appreciate Mr. Henderson's articles very much. We would like to set the record straight by saying that Art. Woodward's "Major Pinkley" doesn't exist. The Boss was once a corporal, a position so low you have to look up to see a private. He wouldn't object to that because you will note what a rare title it is, whereas you can't throw a brick into a crowd without injuring two or three majors and colonels. Aside from that, Art. had a good article on Weaver.

Right now things must be badly upset at the sands, but when we get the new paved road running past our new buildings and thus get the traffic somewhat under control, one of the busiest men in the Southwestern Monuments will be Jim Felton at White Sands.--F. P.

*****SWM*****

WHITE SANDS RANGER REPORT

By James Felton, park ranger,
Alamogordo, New Mexico.

TRAVEL

A few more visitors have been noticed this month than in January; however, the number registered, 1,029, is 14 less than those registered last month. The count goes up, for 2,852 people in 878 cars were checked coming into the white Sands via the monument highway. If we double these figures for the visitors on Highway 70, it gives a total of 5,704 people in 1,756 cars. Mr. Shepperd kept the travel count on the days the ranger was with Dr. Potter. Many out-of-state visitors were here this month going to Arizona and California for the winter. They could be classed as better than average "dudes", and were especially interested in learning something of the origin of the Sands.

CONSTRUCTION:

Doors are being installed in the museum section of our administration building. With the exception of light fixtures, the ranger's office, file room, and custodian's office are finished. Some painting remains to be done in the two exhibit rooms. We understand that it will be necessary to pour four-inch concrete bases for all the museum cases, so this work will delay the finishing somewhat.

In the utility area work progressed rapidly. Our walls and fences are nearly finished. All the adobes are laid, only plastering remains to be done. How about opening with a rodeo? Steel windows and frames are going into the oil-gas house as well as in the power house. The laying of conduit and ground cable is practically complete in all the buildings with the exception of the residences. Perhaps the electric

WHITE SANDS RANGER REPORT (CONT.)

plant will be in operation before the end of the next report period.

If the project had a supply of tile, the floors could be finished in residence number two. Not having this material, work has been held up until concrete as a substitute is approved; also additional oak flooring will have to be purchased before the bedrooms in residence number two can be finished.

LANDSCAPING

If you wish your monument landscaped, contact the RD. That's a job these boys really do. They have planted ten acres of native grass, cactus, and desert shrubs. Eighty cottonwood trees have been set out around the buildings. Some planting was done at the lake in the vicinity of the Garton Well.

CO-OPERATING AGENCIES

During the last two weeks, one of Mr. Stephen's crews located quantities of mineral water within a half mile of the headquarters which might do for plants and sanitation. In 1911 Mienzer of the USGS made a survey of the water resources of the Tularosa Basin, and his report stated that there was no potable water from wells in this region. To date no one has proved him wrong.

IMPROVEMENTS

The well at the old Dewey place (Adobe Walls) was cleaned out and a larger water hole developed. Some second-hand timbers were used as cribbing, and we now have a pool some six feet long and one foot deep open to our mammals and birds. This spot is about ten miles from our entrance and unfrequented by visitors. Precautions will be made to make the water unavailable to stock.

WEATHER

A program consisting of three weeks of late spring weather and then back to winter conditions has had us a bit upset over here. There were a few days during the warm period when high winds made conditions disagreeable. The spring weather on two Sundays brought us many visitors, as on January 30 there were 82 automobiles bringing 364 people into the monument on the black-top highway. The skies are now clearing after four days of stormy weather. The surrounding mountains are covered with 30 inches of snow, and Sunday evening snow flakes were falling at the turn-around. Some of the snow remained until the next morning. In all, the precipitation might be estimated as one inch for the month.

ROADS

Highway 70 to the west is rough for a distance of 50 miles. Heavy

WHITE SANDS RANGER REPORT (CONT.)

construction on this route near Hondo may divert some traffic from us. Within the monument, winds drifted large quantities of sand on the road, but this was removed by the maintenance man as rapidly as possible.

PARK SERVICE VISITORS

Lyle E. Bennett, Charles Richey, Dr. F. C. Potter, and J. E. Kell.

SPECIAL VISITORS

Mr. and Mrs. Frederic K. Vreeland and children spent most of January 23 in the White Sands. They inspected our new buildings before going on west.

Twenty-six students from McMurray College, Abilene, Texas, who were on a glee club tour, frolicked in the Sands January 31.

GENERAL

Soon after dark on January 22, Mr. and Mrs. Sterner of New York City knocked on the ranger's door. It seems that we still have a touch of the Wild West out here, for the couple were seeking protection from bandits. Mrs. Sterner was semi-hysterical from fright, and Mr. Sterner was considerably excited. Under our roof they soon regained some of their composure, but insisted upon spending the night with us unless they could get some kind of an escort into Alamogordo. Not that we wouldn't have enjoyed having overnight guests, but we made up the military escort and reported the case to the local sheriff's office.

The details are something as follows: Leaving Alamogordo about three o'clock in the afternoon, the Sterners drove out by our headquarters area and made the drive into the Sands. Some fifteen miles toward Las Cruces and in the Pass, the road was pretty well blocked and torn up by oil tankers that were stuck in the mud. A few travelers were making an attempt to go around the trucks, and with the aid of others, some managed to pull around and continue westward. The Sterners, not to be outdone by their fellow travelers, tried the track around only to find that they were fast in the mire. Three young men very graciously offered their assistance and managed to get the car on firmer ground. Our New York friends turned around planning to return to Alamogordo for the night, and were soon passed by the same three helpful young fellows. Farther on down the road they proceeded to block the highway and were signalling for a stop when the Sterners arrived on the scene. Thinking that this was their opportunity to return the favor of a few minutes before, the Sterners stopped. Coming toward the car one of the fellows pulled his cap down, reached in his pocket, and said, "Say, bud". Sterner seeing a car approaching and sensing a precarious situation, said, "Let me pull ahead, so this fellow coming can get by". That seemed to be agreeable, so he pulled ahead, stepped on the gas, and drove as

WHITE SANDS RANGER REPORT (CONT.)

fast as the wet highway would allow. The would-be highwaymen jumped in their car and followed the Sterners in hot pursuit and a wild chase back to the junction of 70 and the monument highway. The bandit car went on toward Alamogordo, and the New Yorkers to the light in our quarters for aid in staving off the holdup.

Of course, this all sounded a bit "fishy", and the ranger was inclined to think that the Sterners were suffering from the effects of a most vivid imagination since there hadn't been a shot fired, but guess they had reason for flight after all, because we later learned that there had been another holdup in the Pass that night, a car stolen previously in Las Cruces, and the suspects were trailed through Alamogordo and Carrizoso and the car recovered farther North. Anyone wishing a little color of the "old days" come on over. We'll try to accommodate you.

Dr. F. C. Potter, geologist, of Washington, D. C., arrived early the morning of January 31. It fell my job to show the Doctor around. This is a bit of a joke for, if anything, Potter took me over more of the Tularosa Basin than Tom Charles has seen in his thirty years here. We ranged from the top of the mountains on the east to the foot of the San Andreas on the west. The Doctor even went as far north as Gran Quivira, and samples were taken of the Red Sands to the south.

Our travels within the monument boundaries were extensive. We gathered sand, crystals, and pebbles from nearly every square mile. There were no dunes too steep to drive over or alkali flats too wet to push through. The first week we were stuck somewhere on an average of one to three times a day. All told, Potter gave me more experience getting cars out of holes than I have had in my lifetime. Record length of time in one hole was two hours. Finally we carried planks as a part of our equipment--just in case. If our cars collapse now, Boss, you'll know who is to blame. For the next Washington expert, let's get some horses; but, you know, there's something attractive about a sand flat or a mud hole when "Doc" is around. In my opinion he qualifies as an all-round Westerner, so treat him rough over there at Headquarters. He can take it!

During the month, an official trip was made to Carlsbad Caverns National Park. Now the ranger will be able to converse on equal terms with the "dudes" about one of the largest caves in the world. Many thanks are due the park personnel at Carlsbad for an interesting and worth-while visit.

*****SWM*****

Tom and Jim make, as you see, a right good team for reporting. Tom takes the outside field and Jim the monument and we get it all. One of the good by-products of Dr. Potter's visit was the chance it gave Jim to cover the surrounding country and get really acquainted with the geo-

WHITE SANDS RANGER REPORT (CONT.)

logical and geographical details. He is now much more valuable as a guide at white Sands. We might say that Doctor Potter arrived at headquarters after leaving the Sands and spent a week working out the basic ideas of presenting the geologic information of the White Sands to the public after which he left for the Washington Office to work up the details.--F. P.

*****SWM*****

CHIRICAHUA

By Frank Fish, custodian,
Douglas, Arizona.

Visitors this month, 402; total since October 1, 2,694.

The first half of February and the last week of January was dry with a cold southwest wind prevailing. The only moisture for this period occurred February 1, with a light rain from 7:00 P.M. to around midnight. Rain on February 16 turning to snow early in the morning of the 17th and then rain and snow on the 19th dampened things generally through this area. The Chiricahuas south of the monument from the 8,000 to 10,000 feet elevations received a heavy blanket of snow. Temperatures dropped after the storm and, according to Ed. Riggs at the Faraway Ranch, we had our coldest night for the year on the 17th. (around 14 above zero).

Approach roads have been maintained in excellent shape considering the weather conditions. The road over the Chiricahuas to Rodeo, New Mexico, has been open at times but was not safe to travel without chains. Local people are using this road more frequently for entrance to Rustlers Park to enjoy winter sports in the higher elevations. There is a small pond up there and ice skating is becoming popular although only one pair of skates appears to be available in the entire southern part of Arizona. At least when one skates he has an audience, although from reports, a good bit of the skating was done where the skates don't fit. Anyway, the above mentioned road probably will have a good many boosters for future improvements.

Improvements are progressing east of Willcox on the road to Lordsburg, New Mexico, and surveys have been completed on the re-alignment of this road between Willcox and Benson.

Visitors show an increase over last year; comparative figures follow:

	<u>Cars</u>	<u>Visitors</u>	<u>Out-of-State</u>	<u>Total Stay</u>
1938-----	114	402	153 or 38%	17,535 minutes.
1937-----	59	205		
Increase----	55	197 or 96%		

CHIRICAHUA (CONT.)

GUIDE SERVICE

<u>Parties</u>	<u>No. Att.</u>	<u>Time</u>	<u>Av. Att.</u>	<u>Av. Time</u>
51	200	2870	3.9	56.2 min.

Twenty seven states, the District of Columbia, Denmark, and Belgium were represented on the register.

John Ball of Bisbee was in January 29. On the same day Ray Reche, SCS Geologist from Albuquerque, New Mexico visited the monument.

On January 30, Hunter Stratton and Murray Riggs tried horseback parties from Massai Point but, due to inclement weather conditions, it was considered better to postpone starting until warmer weather.

NATIONAL PARK OFFICIALS

Dr. Gould and Dr. McDougall were in the morning of February 3 for a short stay. It was hoped their stay would be longer as it is desired to have many of the problems on geology and wild life cleared up.

MISCELLANEOUS

The uniform distress signal received during the month was placed at Massai Point.

Five house cats were killed during the month around the fringes of the utility and headquarters area.

Preliminary studies for making the fire atlas have been carried out, but it will be necessary to await arrival of more topographic maps before completion.

Manzanita buds are appearing on bushes at lower elevations and sheltered areas.

A number of recent insect-killed trees have been noticed in the yellow pine north of the monument but inside of the proposed addition.

Maintenance and CCC activities will be found under Mr. Stevenson's report.

*****SWM*****

We picked one interesting observation out of Frank's diary which he did not get into his report. It was to the effect that a Michigan woman considered a four-foot trail too narrow around some of the points for horseback trips. Another item was that Carroll Moore, of Willcox lost his gold watch: "found it after looking for more than an hour."

CHIRICAHUA (CONT.)

It will be noted that we are experimenting with horseback trips at Chiricahua. We think there is a possibility that visitors at that monument can be persuaded to ride, thus seeing much more without getting too tired in the process. No permit will be issued until our experiments show the need for one. For the first year at least the permit would cover only such temporary arrangements in the way of corral, storage, hitching racks, etc., as could be removed in a few hours if the idea seemed to be a failure.--F. P.

*****SWM*****

CHIRICAHUA CCC

By William Stevenson, project
superintendent, Douglas, Ariz.

One crew continued work on the backsloping project. Four hundred square yards of rock banks were sloped two miles north of the intersection of Bonita and Sugar Loaf Truck Trail. Materials were utilized in surfacing and widening fill slopes.

Highway maintenance was light during the month. Thirty man days were spent on snow removal and one quarter mile of Sugar Loaf Truck Trail was surfaced.

A total of two miles of horse trails were maintained including the section from Massai Canyon to Massai Point and from Massai Canyon to Echo Point to Rhyolite Canyon. These sections were backsloped, resurfaced, and drainage corrected. Overcast materials were cleared up.

The Employee's Residence is 90 per cent complete. Flooring has been laid this month and doors are now being hung. Painting is also under way.

Extension of Utility Area is 40 per cent complete. Approximately 200 cubic yards of material have been moved to date on this project. The Masonry Wall which is being constructed in connection with this project is 30 per cent complete.

Work continued this month in the rock quarry.

*****SWM*****

Bill's camp seems to have had a pretty good month of working weather and to have put through a considerable amount of work. We have hit him hard, financially, by drawing the side camp out for work at Casa Grande and we are not yet sure we can stand that extra expense.--F. P.

*****SWM*****

WALNUT CANYON

By Paul Beaubien, jr., park archeologist, Flagstaff, Arizona.

Visitors this month, 127; total since October 1, 2,013.

February was a short month to be remembered for its many snows and sloppy roads. Only 127 visitors reached the canyon, and several parties had to be helped from the mud. With the use of tire chains, the roads were always passable, but it was necessary to use low gear now and then.

I was away on annual leave more than a week, and missed some of the visitors.

Mr. and Mrs. Erik Reed were here on February 16 and 17, and again the 20th.

Gordon Vivian stopped by the 20th and left a milk can.

I made only one trip to Wuptaki, where I found that 39 visitors had registered at Citadel Ruin, and 25 at Wupatki Pueblo.

During the month, some snow was shoveled into the cistern, the approximate north boundary was located in order to erect boundary signs, quite a bit of time was expended in painting signs, and several letters of inquiry from prospective visitors were answered. Five cars were extricated from the mud.

BIRD BANDING AT WALNUT CANYON

Following are some bird-banding compilations listing birds which returned to the station during October and November, 1937:

<u>Species and Band Number</u>	<u>First Trapped</u>	<u>Last Trapped</u>	<u>Return Date</u>	<u>Total Times Trapped</u>
<u>Chestnut-backed Bluebirds</u>				
34/175866	11-24-35	10-29-36	11-5-37	4
36/148048	11-15-36	10-21-36	10-22-37	3
37/44010	12-20-36		10-22-37	2
37/44024	12-22-36		11-14-37	2
37/44034	12-23-36		11-30-37	2
<u>Crossbills</u>				
35/219972	9-21-36		11-14-37	2
36/148078	12-19-36		11-14-37	2
<u>Rocky Mountain Nuthatches</u>				
36/23018	11-20-36	1-18-37	11-21-37	3
36/23023	11-20-36	2-4-37	10-23-37	4
36/117902	12-22-35		11-21-37	2
<u>Western Robins</u>				
37/204301	12-20-36		11-5-37	2
37/204302	12-21-36		10-22-37	2

WALNUT CANYON (CONT.)

Pygmy Nuthatches

34/69946	-----	10- 7-36	-----	2-12-37	---	11-20-37	---	7
34/69952	-----	10- 7-36	-----	2-18-37	---	11-20-37	---	14
34/69950	-----	10- 7-36	-----	2-18-37	---	11-20-37	---	8
34/69961	-----	10-29-36	-----	2-23-37	---	11-14-37	---	6
35/17939	-----	11-15-36	-----	1-15-37	---	10-22-37	---	7
36/13754	-----	11-11-35	-----	1- 5-37	---	10-22-37	---	7
36/13757	-----	11-11-35	-----	2-24-37	---	11-21-37	---	8
36/13787	-----	12-22-35	-----	12-20-36	---	11-30-37	---	5
36/75153	-----	12- 6-36	-----	12-20-36	---	11-20-37	---	5
36/75105	-----	12-27-36	-----	1-25-37	---	11-14-37	---	6
36/75116	-----	12-28-36	-----	2-24-37	---	11-21-37	---	5
36/23046	-----	11-25-36	-----	2-22-37	---	11-14-37	---	13

Some of the above were "returns" in the autumn of 1936 and were reported as such at that time.

*****SWM*****

Paul's report this month is rather telegraphic in its length but it is packed full of information. It seems a little strange that these boys yowl to heaven because a headquarters man doesn't come around about once a month and sit down and talk things over with them, but when they are placed before the typewriter and asked to talk things over with headquarters, they dry up like a powder house and pass up the chance. The monthly report should not, after all, be such a big job if one keeps a diary as has been suggested.

We are glad to welcome Mrs. Erik Reed among the Southwestern Monuments and hope we see her often. Congratulations to Erik and the best wishes of all our crew to both of them.--F.P.

*****SWM*****

PIPE SPRING

By Leonard Heston, acting custodian, Moccasin, Arizona.

Visitors this month, 80; total since October 1, 640.

I surely don't feel anything like making out a report today. I want to be outside digging in the ground instead. Guess it is the spring fever that has hit me again, for this is the third time I have started the report this morning. Hope it goes through.

WEATHER

The weather for the past 30 days has been a mixture of spring and winter, being more on the spring side than the winter. Some days were cold and blustry with the following day as nice as any spring day you ever saw. We have still, on the north sides of the buildings and hills,

PIPE SPRING (CONT.)

patches of snow and some ice that we are thankful for as it is holding back the buds which are commencing to swell.

Days clear, 15; Days cloudy and stormy, 12; Days partly cloudy, 3.

TRAVEL

During the month our visitors have been somewhat fewer than last month, though they have been as interested in the place as any, and my SWM 16 shows the following:

<u>GUIDED VISITORS</u>	<u>UNGUIDED VISITORS OR USERS OF MONUMENT</u>
Visitors- - - - - 39	Visitors- - - - - 41
Parties - - - - - 21	Parties - - - - - 15
Average persons to party- - - - 1.0	Average persons to party- - 2.7
Total minutes of visitors - - - 578	Total stay on Monument- - - 340
Minutes per party - - - - - 27.5	Minutes per party - - - - - 22.6

BIRDS

The bird banding has been carried on throughout the month showing the following results:

	<u>NEW</u>		<u>REPEATS</u>		<u>NEW</u>	<u>TOTALS REPEATS</u>
	<u>FEBRUARY</u>	<u>PREVIOUS</u>	<u>FEBRUARY</u>	<u>PREVIOUS</u>		
Gambel Sparrow	68	212	110	201	280	311
Song sparrow	1	12	9	30	13	39
Shrike	1	1	1		2	1
Red-shafted Flicker	<u>1</u>				<u>1</u>	
Total- - - - -	71	225	120	231	296	351

I have also noticed the following birds here: raven, meadow lark, Mountain Bluebird, Spurred Towhee, Green-backed Goldfinch, House Finch, song sparrow, Gambel Sparrow, shrike, juncos, Red-shafted Flickers, Western Robin, Pinyon Jay, and several varieties of hawks flying overhead.

ANIMALS

I have noticed the past month that the cotton tail rabbits, large grey squirrels, and the chipmunks have made an increase on the monument, and I hope that we can keep them satisfied with their stay here.

MAINTENANCE

My work for the most part has been as varied as the weather, doing bits of work of most every thing and not a lot of any one thing.

I spent most of the day February 15 getting 37 wild rose roots at

PIPE SPRING (CONT.)

Moccasin and setting them out at the head of the meadow and, on the 16th, I set out 13 plum trees also along the head of the meadow where the old ones have died. There are a few more that I want to get out this week.

I have also done some clean-up of the dead weeds and leaves from along the side of the roads and camp ground, and have cut out a lot of the suckers from the cottonwood trees on the east side of the meadow. There are a lot more of these suckers that I had thought when I started to cut them out. I am leaving the largest one about every three or four feet.

PREDATORS

I have caught and killed two house cats this month, the ones that have been raiding my bird traps in the past. They are some of the ugliest cats I ever saw. I believe they are from the old cat that Frank Harris (an Indian) left when he died several years ago. He lived just north of the monument.

PUBLICITY FOLDERS

Some 200 of the Southwestern Monuments folders were received the latter part of January. I think they make a fine publication and will do a lot of good.

MUSEUM ACCESSIONS

February 8, while I was at Moccasin getting some chains and a block and tackle, Mrs. Maggie Heaton gave me three pieces of old pioneer relics that were used back in the early 80's by the Mormons in Orderville, Utah: one broken flatiron handle; one earthen platter with a corner broken off; one old wooden butter bowl; and one Piute Indian basket which is believed to be the first one made of this style and type. I also took back to the monument an old cook stove that was brought in here about 1886 and has been used by all **who have** lived here since. My wife and I were the first to discard it as the fire box was burned out. The last several years it has been used by different families and now it is back to stay.

CCC WORK

The CCC gave me the use of five trucks and about fifty men on the third and fourth to haul dirt into the wash. There was too much mud for them to get out on their own jobs and they wanted something to do, so I was glad to have them work on the monument. There has been no other work by them on the monument this month.

NEW CONSTRUCTION

Approval and blueprints were received for the construction of two
SOUTHWESTERN MONUMENTS 111 MONTHLY REPORT FOR FEBRUARY, 1938.

PIPE SPRING (CONT.)

pit toilets this month, and the bill of materials was given to the Project Superintendent with a request to purchase this material next month.

I believe this covers all the main points of work and things of interest for Pipe Spring for February, so I will sign off for another month.

*****SWM*****

It looks as if, for a winter month, Leonard has been pretty busy. The whole Southwest seems to have had the same open winter about which he speaks. In a great many places it is not an unmixed blessing, for it is likely to make short feed for the cattlemen and low water in some of the reservoirs.

We are glad to note that Leonard is gathering in some of the old things for his museum. That period of the sixties, seventies, and eighties up through that country is an intensely interesting period of western pioneer history.--F. F.

*****SWM*****

GRAN QUIVIRA

By George Boundey, custodian,
Gran Quivira, New Mexico.

Visitors this month, 135; total since October 1, 848.

This has been a month of high winds, much dust, and extreme cold. Owing to elevation and the fact the ruins are not protected in any way from high winds, the winter time is always a difficult time in which to look over ruins. Almost every party expresses a wish to return again during summer months. After a brief inspection of the ruins, the talk is usually continued around our fire in the living room.

As we have always kept posted on road conditions thru radio and local trucking, we are a point of call for most cars bound south or east. Lately we have had unfavorable reports of the road to the south by way of Carrizozo, so I made a trip as far south as Alamogordo. I found the road is being straightened over much of the way between here and Carrizozo. Fence has been built in places on both sides of the right-of-way, but not even a scraper has gone over the road to level off the bogs.

I have done some work on the road between the ruins and the village during the month, getting it in shape for the spring rains which should come later. So far there has been very little moisture; all cisterns in the valley are empty except ours and many ranchers are hauling stock water from Mountainair.

GRAN QUIVIRA (CONT.)

Dr. F. C. Potter, geologist from the Washington office, visited us on the ninth. He was on his way south to do some research work on the White Sands National Monument

Through some mistake, a package for the monument was sent to Willard. I took a visitor, Mr. F. M. French, with me and we visited the old Mission of Curai and also the apple orchard at Manzano. The excavation done last winter at Curai is causing the walls there to deteriorate very fast and vandals have done much damage to the buildings.

Visitors to the local church on Sunday often come to the monument to eat their lunches. I have provided a place west of the pump house where fires may be built and where more shelter from the winds may be obtained. This does away with children climbing about among the walls of the Mission.

We have stopped the feeding of the birds but their numbers seem to be on the increase rather than on the decrease.

The monument here is a haven for rabbits of which we have four kinds. By careful observation I am convinced that the summer increase among the rabbits is well taken care of by the owls, bobcats and coyotes during the winter months.

Our monument, being fenced, is an oasis in the midst of a much over-pastured grassland. When every staple is in, our fences are proof against sheep, but the boot of a Mexican sheep herder can keep a man most awful busy several hours each day when the spring grass begins to come. There are times when about the only way one can hold his own is to put out a few signs of "Poison out for Squirrels". Even a Mexican sheep herder seems to be able to read that.

*****SWM*****

Mr. Boundey, in speaking of the better grass inside his fence, reminds me of the first trip I made back to Gran Quivira after we put up that fence several years ago. From five miles up the road, where you get the first view of the monument, you could actually see where the fence line ran by the difference in the color of the green grass inside from the grazed ground on the outside.--F. P.

*****SWM*****

TUMACACORI

By Charlie Steen, junior park
archeologist, Box 2225,
Tucson, Arizona.

Visitors this month, 1,795; total since October 1, 6,288.

Travel to Tumacacori was considerably less for the past month than

TUMACACORI (CONT.)

for February, 1937. The visitor count totaled 1,795 in comparison to 2,864 for 1937. Of this month's visitors, 1,516 were guided through the mission and 279 used only what we jokingly call the facilities or looked around without an escort.

Custodian Caywood is taking some sick leave so that he can get his innards straightened out and will be off duty for approximately a month. Reports from Nogales yesterday were to the effect that he is doing very well.

Park Service visitors for the month include Dale S. King who brought his brand-new bride: lotsa fun trying to catch the train at Nogales. When last seen, the Kings were on board El Costeno trying to convince everyone that they should be there and mentally cursing the fellow who invented time zones. Luis Gastelum was in for an hour one Sunday.

Newsworthy visitors during the month included Miss May Pershing, sister of General Pershing, former Vice President of the United States Charles G. Dawes, and those honorary members of the Service, Mr. and Mrs. John Fast of Oak Park, Illinois.

Two very important accessions for the new museum were obtained from Mr. J. B. Bristol of Nogales, Arizona: a Pima or Papago thrashing paddle and bread board, both of mesquite wood. These were found by Mr. Bristol several years ago in the Planchas de Plata Canyon, Sonora, Mexico, and were on display at the Chamber of Commerce office in Nogales. Caywood was very much interested in them and Mr. Bristol donated them to the museum. Original material of this sort is needed here. The paddle we have now is much better and more interesting than the full-scale model which was made in Berkeley.

Weather until the seventeenth of the month was very pleasant but on that day it changed. Rain, and snow, and the temperature all fell; cold weather prevailed for a few days but the sun is shining again and the last two days have been quite warm.

Bird banding and observing this month brought some interesting results. Of almost 450 birds handled, 117 new birds were banded and 11 taken as returns. One interesting return was a Green-tailed Towhee banded March 31, 1936. This Towhee is a rare winter visitor. New birds banded include the following:

Arizona Cardinal	4	Pyrrhuloxia	8
Gambel Quail	15	Palmer Thrasher	1
Canyon Towhee	2	Rock Wren	1
Gambel Sparrow	84	Brewer Sparrow	1
Lincoln Sparrow	1		

TOTAL - - - - -117

TUMACACORI (CONT.)

We were pleased to hear that General Dawes dropped in at Tumacacori. We think of him as one of the outstandingly pleasant visitors at Casa Grande where he visited a year or so ago. He is very well read in history and archaeology and was an understanding and sympathetic listener. We were especially tickled at his one rejection of some rather simple theory which we offered him. We have forgotten what it was, but he said quite frankly that he didn't believe a d----d word of it and we would just have to produce something better before he would agree with us. He held his party here an hour past lunch time regardless of some yawling, but, quite characteristic of him I am sure, wanted to quit at once when one of his hungry party pointed out that he was keeping the guide from his lunch.--F. P.

*****SWM*****

EL MORRO

By Robert R. Budlong, custodian,
Ramah, New Mexico.

Visitors this month, 50; total since October 1, 590.

This has been a very quiet month, and consequently there is but little to report.

TRAVEL

A total of fifty persons visited this monument during the travel month. All who registered were contacted. Trips were made as follows:

Trail (unguided; by permission): Trips, 1; total persons, 2; total time, 135 minutes.

Inscriptions: Trips, 16; total persons, 45; total time, 875 minutes; average persons per party, 2.8; average time, 54.7 minutes.

Office: (educational): "Visits", 6; total persons, 19; total time, 350 minutes; average persons per party, 3.2; average time, 58.3 minutes.

People continue to drive in, inspect the inscriptions, and drive out again without coming to the office. The north side is patrolled regularly whenever there is heard the sound of a motor that can't be immediately located; and on days when weather is good, periodic trips are made around the point and on the north side on general principles. Tracks were observed on two occasions where people had come in without coming to the office, but in neither case was the custodian able to contact them.

This time last year we were well snowed-in, with no visitors except the intrepid Mr. Charles Carter, who came down on official

EL MORRO (CONT.)

business, so we can show quite an increase in visitor travel. This, of course, is due to the open winter we are having.

WEATHER

At last we are having a touch of something approaching cool weather, though temperatures are still far above normal for this time of year. Lowest to date (at the airport, about five miles distant) was ten degrees below zero, February 18. Compared to last winter, that is pretty warm -- almost hot, in fact..

The past five days we have had snow, but today the sun is out again and the snow is melting rapidly. That does not improve the roads. No accurate measurements of snowfall were made, but between eight and ten inches apparently fell within the past week.

Today's mail brings me notice that our weather bureau instrument shelter and rain gauge are in Gallup, so I shall drive to town and get them in the morning, roads and weather permitting. The instruments were also received. We greatly appreciate the Weather Bureau's sending us these instruments, for now accurate weather reports may be kept here.

On the morning of January 22 at 4:00 A. M., I noticed a fine display of the Aurora Borealis in the northern sky. I awakened the HCWP to see it. It was a great flare of cerise light, extending high into the northern sky and to the west until The Rock hid it from sight. The color soon faded, with a long streak of white light extending toward the south for some time. We knew something was unusual in the atmosphere by the way our radio had been behaving for several nights.

ROADS

Roads in general have been kept open fairly well with the exception of a few days when snow or rain turned the adobe into mud. Ah, this El Morro mud! Like El Morro National Monument, there's nothing else quite like it in the entire United States. We put chains on our car wheels, travel cautiously in low and second gears, and if we reach our destination eventually, we're greatly surprised. However, today the sun has been shining and roads are drying appreciably. It only takes an hour to go a mile now.

INSCRIPTIONS

Some work continues on these, but mostly on the south side where it isn't quite so cold. The major ones were all completed (for winter) last month, as reported, but on warmer days the search for others goes on. It's a risky business, however, when we have such extremes of temperature, as there are frequent rock falls. The Custodian wears a

EL MORRO (CONT.)

padded leather "crash helmet" at such times, but even at that he doesn't exactly relish working at the base of the high cliff when rocks are coming down. To date I have been missed almost entirely (with the exception of a few small ones); but if next month you don't receive a monthly report, remember the lines in The Mikado: "and he never will be missed" -- those rocks may get me yet. A few traces of new inscriptions have been found, but no complete ones.

MAINTENANCE, ETC.

Considerable work was done during the early part of the month continuing with the grading of the monument roads. More high centers were removed, but frozen ground prevented the completion of this work. The fill where the big arroyo used to be on the south side of the rock has received considerable attention also. Small gulleys continue to begin to form in the soft sand, and these have been checked. Indians and others driving wagons now and then insist upon turning from the road and driving up the fill before we can see them and turn them back on the road. As a consequence, deep wheel ruts are made in the soft sand, and these are ideal for the formation of arroyos with the first run-off of moisture. These ruts are kept filled as fast as they are made. Warning the Indians does little good.

The fence was repaired at one point on the north side where the wires run around a tree. Missing wires left a space large enough for stock to enter. This was repaired.

AUTOMOTIVE EQUIPMENT

The truck is running splendidly, but this month has been giving poor mileage, and the trouble was hard to find. Eventually it was traced -- there were two gas leaks. One was in the main fuel line, under the chassis, and this was repaired, but the other eluded me for some time. Eventually that was found -- moisture from condensation in the tank would be caught in the fuel pump sediment bowl, and would, of course, freeze. The ice was removed from time to time, but evidently when the bowl was replaced, some ice fragments would be caught under the washer. The thing didn't leak until the engine had warmed up, and then the gasoline would run merrily from under the edge of the sediment bowl. Upon cooling, the moisture apparently froze again, and the joint seemed tight. We have had no further trouble now that this has been fixed, but it had us fooled for a long time. Keeping the gas tank filled is a good way of reducing the amount of condensation, incidentally.

WILDLIFE

Some time ago the State Fish and Game Commission was contacted and inquiries made relative to re-stocking the monument with Scaled Quail. No quail have been seen in the neighborhood since we came here, but to

EL MORRO (CONT.)

date we have found one person who remembers having seen a covey within the past five years. Old-timers say quail used to be rather plentiful years ago. A recent letter from the Commission advises that a dozen or more pairs of breeding birds will be shipped us in March or April. We hope the experiment may prove successful.

WELLS

During the month a scouting trip over the surrounding country was made to locate nearby wells and to obtain data on them. An aerial map was photographed and enlarged in order that we might have a map, and the wells were spotted-in on this. Data on each well (depth, strata encountered, flow of water, etc.) was obtained from the well-drillers, finally, and the report sent your office.

RADIO BROADCAST

Data on a proposed broadcast featuring this National Monument was compiled during the month and sent the Washington office. (Ed. note: A portion of this data appears on page 157 of this month's Supplement headed, "Major Inscriptions on El Morro".)

*****SWM*****

We are glad to get the information on the leak at the sediment bowl on the pick-up. The same thing is happening, no doubt, on other cars in the upper country and we will warn those whose car reports show bad mileage to be on the lookout for such leaks. Incidentally, we might say those car reports, which caused more or less groaning and protest when they went into use, are proving very valuable both from the headquarters standpoint and from that of the field men.--F. P.

*****SWM*****

AZTEC RUINS

By T. C. Miller, custodian,
Aztec, New Mexico.

Visitors this month, 836; total since October 1, 3,790.

GENERAL

Again we score an all-time high record in travel for the month of February, 1938, showing a net registered total of 836 people in 239 automobiles. This is an increase over February, 1937, of 622 people.

The approach road to this monument has been well maintained by the State Highway Department during the month. The new graveled road has settled and packed almost as hard and smooth as pavement. The New Mexico ports-of-entry have registered more than 100% increase in out-of-state cars during the months of January and February, comparing

AZTEC RUINS (CONT.)

with the corresponding period of last year. Much snow has been experienced in the higher altitudes in Colorado. Wolf Creek pass has remained open and the roads in general in northwestern New Mexico and Colorado have been in better shape this winter than ever before in history. From all indications this will be the banner travel year for this monument.

Records reveal that we are handling a larger percent of visitors per man than any monument in the Southwestern group. It is hoped that the vacancy existing in personnel of this monument can be filled soon. It is impossible for one man to contact and render guide service to all the visitors that are coming to this monument even during the winter months. It is necessary to leave the museum unattended when the Custodian is in the field with parties of visitors. To date only one case of vandalism has come to my attention. This will be explained under a different heading elsewhere in this report. However, a live monument has its advantages; at least one does not have the time to worry about what the other monuments are doing.

WEATHER

Northwestern New Mexico has enjoyed the most delightful winter weather on record. While the amount of precipitation recorded this year is a little below normal and the stockmen and farmers may suffer from that later on, it is believed that this part of the country is in better shape than it was this time last year. The trees have begun to bud and the grass is getting green in places, which would indicate that spring is right here upon us.

WEATHER STATISTICS

Maximum temperature-	- - - - -	-59 (February 10.)
Minimum temperature-	- - - - -	7 (February 7.)
Total precipitation-	- - - - -	.89 inch. (Greatest amount recorded in 24 hours, .23 inch. February 2.)
Cloudy days-	- - - - -	15
Partly cloudy days	- - - - -	6
Clear days	- - - - -	9

Two inches of snow fell on February 20. Patches of snow can be seen on the north sides of the building at the time of this report.

ACTIVITIES OF OTHER AGENCIES

The district meeting of the American Legion and the American Legion Auxiliary held Monday, February 14, at Aztec Ruins, was well attended and proved to be an interesting affair.

The conclave started in the afternoon with a parade headed by

AZTEC RUINS (CONT.)

the Post colors of San Juan Post, Aztec. Veterans and Boy Scouts marched to the music of the Aztec High School band.

The visitors were then conducted through the ruins, including the museum, reconstructed kiva, and underground rooms of the ruins.

Following the dinner at the Methodist Church basement, in the town of Aztec, the Legion and Legion Auxiliary members returned to the monument. The ladies held a brief business meeting in the museum and then joined the men in the Great Kiva to listen to state speakers. The meeting adjourned at 11:15 p. m.

At this time I wish to thank you for sending Custodian Faris and Custodian McKinney over here to help me handle this convention crowd. It was necessary to work these boys 18½ hours on February 14 in order to take care of this party.

VANDALISM

On February 12, I received a small package, addressed Astec Ruins, New Mexico, mailed from Rose Mead, California. The package contained a small pottery vessel belonging to this monument. While the museum catalogue number had been erased, it was still possible to read the number with a glass. The number is H-243. There was no return address, or word of explanation. Obviously it was taken from this monument during the month of August of last year.

NATIONAL PARK SERVICE OFFICERS

Mr. and Mrs. Charles D. Carter were here January 26. Charles Richey, Mrs. Jerome Miller, and Charles Carter of the Regional Office in Santa Fe were here February 15.

SPECIAL VISITORS

Carroll Thomas, State Scout executive, Santa Fe, New Mexico, was here January 29. John H. Holt and party, United States Indian Affairs, Washington, D. C., were monument visitors February 7.

RUINS REPAIR NEEDED

On February 10, while guiding a party through the ruins, I was about half way through the first story rooms when a large section of wall collapsed, the rocks rolling within a few feet of the party.

It is hoped that we can get part of this Mobile Unit in here soon to repair the damage, and it might prevent accidents in the future.

AZTEC RUINS (CONT.)

TRAVEL

Eight hundred thirty six people entered the monument in 239 automobiles coming from 24 states, the District of Columbia, and France. Travel for February, 1937, was 214 people. This comparison shows an increase of 622 people. Total travel since October 1, 3,790. For the corresponding period of last year, 2,537; an increase of 1,253 people.

GUIDE SERVICE

Total visitors guided through the ruins and museum, or both, 810.
Number of field trips - - - - -104 with 683 persons.
Number of Museum trips- - - - -111 with 709 persons.
Total guide time in field - - - - -3,730 minutes.
Total guide time in museum- - - - -2,910 minutes.

*****SWM*****

Congratulations to Carroll on the success of his Legion meeting and I am sure Johnwill and Lewis were more than willing to help out. All three boys being old hands in the Service, I am sure the little matter of an 18½ hour shift was taken in their stride, though we are glad Carroll spoke of it for we like to know when the boys have to put in an extra shift like that.

Arrangements are under way to set up a project at Aztec for the Mobile Unit and we hope to get at some of those worst spots before long.--F. P.

*****SWM*****

NAVAJO

By Milton Wetherill, ranger-historian, Kayenta, Arizona.

Visitors this month, 3; total since October 1, 81.

February has been anything but pleasant in this part of the country. About half the days were cloudy and the rest partly cloudy with no clear days so far. We have had more snow in February than we had in December and January.

The roads have not been bad. The last mile is the only bad part, slick rock covered with ice and 12 to 14 inches of snow.

Trail work: About 50 yards of retaining wall built, several steep places cut down, and several low places filled, making a more uniform grade.

NAVAJO (CONT.)

BIRDS NOTED AT BE-TA-TA-KIN.

Woodhouse Jay
Gray Titmouse
Canyon Wren
American Raven
Long-crested Jay
Shufeldt Junco
Gray-headed Junco
Pink-sided Junco
Rocky Mountain Nuthatch

Mt. Chickadee
Pinyon Jay
Western Robin
Western Horned Owl
Batchelder Woodpecker
White-breasted Woodpecker
Lead-colored Bushtit
House Finch

I have done no banding during February, but have kept feed out for the birds. At present I have a porcupine hide hanging outside of the tent and the chickadees are cleaning off the small pieces of flesh still clinging to it.

A sing is going on near the mouth of Tsegie Beko, for which the following plants were collected:

Douglas Fir
Chokecherry
Yucca

Gooseberry
Horsetail

Wild Ceranium
Oregon Grape
Eriogonum sp.

*****SWM*****

This question of "bad" road is just a matter of comparison with what a person is accustomed to traveling. To the average traveler today, any road that is not paved is bad; to Milton it isn't bad unless it is "rock covered with ice and 12 to 14 inches of snow". One visitor who made the trip to Navajo a summer or so ago described the first part of the road as bad and continually getting worse. When he came to a sixty degree hill covered with loose rocks, his wife made him let her out. After negotiating the hill, he came to the worst part of the road, left his car, and walked in the rest of the way. But this is all good road to Milton until it gets a foot or two of ice and snow on it.--F. P.

*****SWM*****

CAPULIN MOUNTAIN

By Homer J. Farr, custodian,
Capulin, New Mexico.

Visitors this month, 750; total since October 1, 3,000.

This short month commonly called February has been one of the finest winter months for tourists and locals that this country has ever seen. We have had about 750 visitors throughout the month.

Weather has been extremely warm and nice until the nineteenth.

CAPULIN MOUNTAIN (CONT.)

Since that time we have had more or less snow at intervals - I would say about ten inches all together. And beautiful snow it has all been, without wind, which is something very unusual for this section. Farmers are rejoicing over the moisture without wind, and all the boys have been rabbit hunting.

Everybody and his brother in this vicinity had been spoiled the past five years by the high winds and had purchased radio and batteries with windchargers. The past week all have been requesting a P.W.A. project to start the wind blowing so that they may have radio.

The Custodian has recently spent a few hours on the monument removing some rock and lava that had rolled into the road.

I made an inspection trip of the monument road yesterday and while inspecting, found the road in fair condition except the usual sloughing of cinders and lava. The placards have been received concerning the distress signals and have been posted according to advice. However, they will not do a great deal of good in this monument. I believe they will tend to educate the general public and when visiting other monuments, which may have hazards such as the chance of becoming lost, might save a life or suffering.

Our flora in the monument has recently been getting just exactly what is required and the big snows always make for beautiful early flowers of which we have the mountain anemones which in many early springs will come right thru and blossom on top of the snow. Our small fauna, such as squirrels and chipmunks, are as yet hibernated, but we have a goodly number of gentle deer and Bald and Golden Eagles. The eagles are almost daily visible from most anywhere in the monument. Our porcupines are slowly becoming less in number but we still have too many.

Travel has increased slightly over last February and we are expecting heavier travel this summer than ever before. Bountiful moisture has been reported from this monument east and south for one thousand miles, and the great Dust Bowl is now wet. This sounds like sweet music to our ears for you know we here have been right on the very edge of the big Dust Bowl and in March and April sometimes life here has not been worth it. We now have every reason to believe that we will have a normal spring.

*****SWM*****

TONTO

By Thomas Onstott, in charge,
Roosevelt, Arizona.

Visitors this month, 684; total since October 1, 2,223.

The 31 days on this report rolled by so fast it really doesn't
SOUTHWESTERN MONUMENTS 123 MONTHLY REPORT FOR FEBRUARY, 1938.

TONTO (CONT.)

seem right to be making out another epistle to headquarters. Exclusive of a few days in the middle of the month, the weather has been ideal for travel and, although the number of visitors was not great, it has been one of the busiest and most pleasant months I have yet spent at Tonto. The gutter project is, as yet, unfinished but the first 200 yards of trail from the lower ruin have been guttered, widened and re-surfaced where necessary.

Nature-trail work has progressed some in the last three weeks. The following cacti have been identified:

Prickly pear; Opuntia engelmannii, Salm Dyck.

Cholla; Opuntia leptocaulis, D. C. "Christmas Cactus".
Opuntia fulgida (Engelm) "Jumping Cactus".
Opuntia bigelovii (Engelm) "Teddy-bear cholla".
Opuntia acanthocarpa (Engelm) "Staghorn".
Opuntia versicolor (Engelm)

Hedgehog; Echinocereus engelmannii, (Parry) & Rumpler
Echinocereus fendleri (Engelm) Rumpler.

Barrel cacti; Ferocactus lecontei (Engelm)
Ferocactus wislizeni (Engelm) B. & R.

Sahuaro; Carnegiea gigantea.

Along the trail are many other plants well worth pointing out by signs. These plants are sotol, yucca, agave, mesquite, two types of palo verde, catclaw, black brush, buckwheat, and jojoba. All of these occur along a very short trail, not over 90 yards.

VISITORS

Park Service: Dr. Gould, regional geologist, and Dr. McDougall, regional wildlifer, spent two hours here on Sunday, January 30.

Dr. Potter, geologist from Washington, paid a short visit Sunday, February 20.

TRAVEL

	<u>THIS MONTH</u>	<u>LAST MONTH</u>
Total visitors	684	679
Total registered	574	581
States	38	32
Foreign countries	1 Canada	3
Field trips	140	129
Attendance	410	429

TONTO (CONT.)

Time (total SWM 16) 5,615 5,195

WEATHER

Days clear- - - - - - - - - - -17
Days partly cloudy- - - - - - - - - 8
Days cloudy - - - - - - - - - - - 6

Precipitation - - - - - - - - - - 1.44 inches (Roosevelt -
S.R.V.W.U.A.)
Temperature: Maximum - - - - - - -74 (Roosevelt - S.R.V.W.U.A.)
Minimum - - - - - - -36 (" ")

All indications are that the flowers will be early this year. One ocotillo is already in bud. There has been enough rain to help the flowers along, but nowhere near enough to help keep the Roosevelt Reservoir full. This may have a bad effect on next year's travel; no lake, few tourists.

I hope the signs for the highway junctions come through soon, as I would like to see the result.

*****SWM*****

Tommie has had a busy month; those who don't think so might try climbing that rather stiff trail to the lower ruins on an average of five times per day, talking steadily all the time, handling museum parties between times, doing trail work and the general outside chores, and, as a final touch, keeping house for one's self.--F. P.

*****SWM*****

CASA GRANDE

By A. T. Bicknell, custodian,
Coolidge, Arizona.

Visitors this month, 4,227; total since October 1, 17,070.

WEATHER

Days clear- - - - - - - - - - -18
Days partly cloudy- - - - - - - - - 4
Days cloudy - - - - - - - - - - - 9
Maximum temperature - - - - - - - - -81° on the 9th.
Mean maximum temperature- - - - - - -67.3°
Minimum temperature - - - - - - - - -25° on the 18th.
Mean minimum temperature- - - - - - -36.5°
Precipitation - - - - - - - - - - -.56 inch.

It looks as though winter is a thing of the past in southern Arizona if this last month is any criterion. The days and nights have

CASA GRANDE (CONT.)

been warm, the mean temperature being 51.9 degrees. Rainfall is somewhat under the norm. but in spite of this the vegetation is beginning to turn green. The winds prevail from the southwest.

GENERAL

Visitor travel to the monument this month reached a total of 4,227, of which 3,953 were contacted. The visitors represented 47 states, Washington, D. C., Alaska, Hawaii, and the following foreign countries: Canada, Mexico, Peru, England, Austria, Denmark, and Belgium. From time to time during the month we have noticed that there has been a decided change in the type of visitor. Up until now we could count on at least 70 percent of them being from Arizona, California, Texas, and Oklahoma. This month, however, these four states contributed only 35 percent of our total travel, the rest of our visitors being from the northern states.

The map folder of the Southwestern Monuments has proven to be quite popular with the visitors. Since receiving these folders in the latter part of January, we have distributed approximately 1,500 to visitors and to individuals who have written and asked for them. And we still have to find one which has been thrown away on the monument. This is more than we can say for a lot of our free literature. For the benefit of those who find that the maps are going too fast, I might add that we were able to make them last a few days longer by requesting that the visitor take only one to a family. But don't ask us to define a family.

WALL WATERPROOFING

Last month we tested the portions of wall in Compound A where various waterproofing materials have been applied from time to time. The results show that we still do not have a satisfactory method of preserving our walls.

In November of 1932 a representative of the Air Spray Company of Washington, D. C., applied a protective coating to the walls of one of the rooms in Compound A. Within 90 days, however, this solution proved unsatisfactory. Not only did it turn the color of the wall to a light grey, but the coating began to crack and peel.

In April, 1935, Mr. Frederick T. Martius made several tests on our walls with an NPSX solution. Two coats of two percent, three percent, three and five tenths percent, and five percent solution were applied to walls with practically the same exposure to the elements. Laboratory tests upon the "caliche" had been highly successful, and for the following two years one could pour water over the coated portions and the wall would seemingly absorb but very little of it. This year, however, there was no observable difference in the water absorption of the walls which had been treated with NPSX and those which had not. Judging from this,

CASA GRANDE (CONT.)

it would appear that in the laboratory we are missing some element which affects the efficiency of our waterproofing solutions, and that the only way to really test a solution is out in the field.

USE OF MONUMENT FACILITIES BY THE PUBLIC

Total travel: 1938--4,227; 1937--3,845; 1936--3,043.

Of the 4,227 visitors to the Casa Grande, 3,953 were contacted in either the ruins, the museum, or both. It required 15,573 minutes to guide 462 parties through the ruins for an average time of 33.7 minutes. In the museum, 6,828 minutes were spent in guiding 338 parties, an average of 20.1 minutes per party.

The picnic grounds have been quite popular. As nearly as we could check, 61 groups (489 people) have picnicked in the grounds and 12 parties have stayed overnight in trailers. On February fifth, 25 Girl Scouts went through the ruins and had lunch under the ramadas. A group of school children from the McDowell school visited the monument on the 11th, showing great interest in the Casa Grande and the outlying groups of ruins. On the 20th, the Sunday School of the Presbyterian Church in Coolidge held a picnic on the monument. More than 125 persons attended.

NEWSWORTHY VISITORS

National Park Service: Dr. Charles N. Gould and W. B. McDougall, regional geologist and wildlife technician from Santa Fe, New Mexico, dropped over to see the ruins while they were visiting Headquarters on February 2. On the 26th, F. Nichols and F. Eastman of the Historic American Building Survey visited the ruins. Nichols had some mighty interesting restoration drawings of the mission at Tumacacori. Dr. Frank Potter from Washington, D. C., stayed at the monument several days writing a report on the geology of White Sands. We found him a fine fellow, interested not only in our ruins, but very helpful in making suggestions as to the geology seen on our "DESERT TRAIL". We were very glad to meet Bill Leicht on the 23rd. Bill decided to come down to the Southwestern Monuments from Grand Canyon, and is to be our new man at Navajo National Monument.

On February 3, Mr. Ira Nelson, president of the Armour Company and consul to Roumania, visited the monument accompanied by the Baron and Baroness Reninghaus of Vienna, and Mr. J. F. Parker of New York City. The Arizona Archeological and Historical Society went through the ruins on the 12th. In the party was Senor Jose Encinas, Ex-rector of the University of San Marcos at Lima, Peru, who was sent to the University of Arizona for the winter by the Carnegie Endowment for International Peace to lecture on the archeology of the Inca Civilization. Dr. Charles W. Mayo of the famous Mayo Clinic in Rochester, Minnesota, brought a party of friends to see the ruins on the 15th. Another

CASA GRANDE (CONT.)

interesting visitor this month was Mr. Arthur Price of Station KRFC, San Francisco. He was much impressed by the Casa Grande and within the near future hopes to broadcast a brief description of it on the "Scrap-book" program. Other visitors to the monument during the month included Donald Culross Peattie of "Green Laurels" fame, Clarence Buddington Kelland who amuses us each month with his stories of "Scattergood" in the American Magazine, and Mr. Kenneth Chapman of the Laboratory of Anthropology in Santa Fe. Mr. Chapman gave an interesting lecture on the development of Pueblo pottery design at the Heard Museum in Phoenix.

NATURE NOTES

Spring is right on the heels of winter. The creosote and salt bush are beginning to turn green, and the squawberry is blossoming wherever there is an abundance of water. The birds also seem to be affected by the weather. Mr. and Mrs. Western Horned Owl have decided to raise a family. This keeps Mrs. Owl so busy that she has no time for the public. The other day one of the CCC guides mentioned that due to the absence of the owls, his time has dropped at least five minutes in the ruins. The cactus wrens are obliging us by building nests in the cholla near the museum. It is a constant wonder to the visitors that the wrens can build nests in the "jumping cholla" without getting stuck.

Our Desert Trail is not in operation as yet, but the copy is practically ready. An argument has arisen as to whether or not the visitor will read a 15-page pamphlet. As a result we are going to mimeograph a brief summary of the Desert Trail guide pamphlet, and let the visitor take his choice. The other day a young lady was quite disappointed to find that we guided visitors only through the Compound A and the museum. It seems that she had been here a number of years ago when we spent more time with each party. Remembering this she had prepared her friends for a trip of several hours on the monument. We were sorry to disappoint this young lady, but we hope that she will come back and try our self-guiding trail.

WORK ACCOMPLISHED BY GENERAL MECHANIC

In addition to regular maintenance work and the servicing of cars, trucks and equipment at headquarters, Gene Stonehocker has had a variety of jobs during the month.

The passenger car, Ford V-8 USDI 13771, recently transferred to us from the Regional office, has been overhauled and a reconditioned motor installed. A trip was made to Phoenix for the motor and welding supplies.

Three trucks - USDI 11161, 11197, and 10369 - received for service at the CCC side camp were inspected and the equipment checked. Also several no-charge jobs were done in cooperation with the CCC camp. The

CASA GRANDE (CONT.)

new Chevrolet pick-up for the monument was checked against the specifications and the required equipment installed.

A carriage was built for the welding equipment and several welding jobs are being done as time permits. Other work accomplished includes: repair of the water supply pump, blacksmith drill, and a gasoline pump for Tumacacori. The fenders on USDI 1805, 8113, and 13771 were welded, the cylinder oil pump was overhauled and repainted, the clutch on the Tonto Ford was adjusted and lubricated, the map case for Davy's nature trail was constructed, also the children's playground equipment was repaired. A portable paint spray outfit was shipped to Chaco Canyon, and a boring bar and D. C. electric grinder were transferred to Bandelier. Shifting of equipment and finding storage space for supplies required considerable time this month due to the preparation for the new construction.

NEW EQUIPMENT

One new Chevrolet pick-up has been received and is now being used.

CASA GRANDE SIDE CAMP

Work continued on Job No. 50, shop construction, and 135 man days were used on this project. On the 11th, the adobe walls were completed to the plate line. The roof supports and most of the rafters are now in place.

Fifty-five man days were spent on Job 51, warehouse construction. In connection with clearing the location for this building, a number of creosote bushes were transplanted to the vicinity of the sewage disposal plant to screen that low shelter. Engineer Tovrea and Foreman Hobbs located and set the stakes for the project on the 19th. Excavation of the foundation was started on the 24th.

A total of 100 man days were used on Job 53, guide and educational work. This includes enrollee Arnold who is breaking in for the CCC office work at NM-2-A. Arnold replaced Vasquez. Buster Baldwin has been given a few days experience under Park Naturalist King so that he may step into enrollee Hale's place. Hale expects to leave us on account of sickness in the family.

Only 11 man days were used on Job 54, clean-up. We are still hauling old adobes from Compound B. The old open storage shed on the warehouse location has been torn down and cleaned up.

On Job 55, 80 man days were spent in the manufacture of adobes for the warehouse. Eighty-two man days were charged to overhead.

Safety meetings were held on Thursdays of each week with the excep-

CASA GRANDE SIDE CAMP (CONT.)

tion of the 10th. On this date it conflicted with other classes.

Special permission was granted enrollees Coyle, Rodgers, Savage, and Maples to attend a lecture at Heard Museum in Phoenix. The boys were accompanied by Ranger Jones. The lecture dealt with the development of design in Pueblo pottery, and has been helpful in the general guide work in the museum. A Ford V-8 stake body, a Dodge, and a Chevrolet cargo truck were received for use at the side camp.

On February 24, the side camp was inspected by Major Hildring, district commander from Phoenix, Major M. W. Marsh, U. S. Army, Fort Sam Houston, and Mr. A. M. Rogers, chief educational adviser, Eighth Corps Area, Fort Sam Houston, Texas. Other inspections were made as follows: Capt. Tway and Lt. Keiling on the 1st; Project Superintendent Bill Stevenson, Lt. Lee, commanding officer, NM-2-A, and Assistant Superintendent Miller on the 2nd; Lt. Keiling on the 9th, accompanied by Capt. Brandon; 10th and 25th, Project Superintendent Stevenson; 24th, Lt. Keiling. Chaplain Probert held services with good attendance on the 13th and 27th. Educational Adviser Beatty, NM-2-A, visited the camp on the 15th.

Park Naturalist King will report on the educational activities for the month.

*****SWM*****

It was a serious disappointment to find the Martius NPSX solution was failing in its protection at the end of the third year. The cost of its application will, of course, prohibit its usage on our walls if we have to renew it every two years. We will be glad to have some of the experts drop in and check our observations on this and we will begin checking the other applications at monuments under our charge in the Southwest. Casa Grande is the best test we have for light and heat conditions but some of the more northern monuments will be better tests as to snow and cold.

The failure of this solution brings us back to the original starting point; what are we going to do in the way of protecting these southwestern ruins, more especially the mud walled ones, so visitors will be able to see them one or two centuries from now?--F. P.

*****SWM*****

NATURAL BRIDGES

By Zeke Johnson, custodian,
Blanding, Utah.

Visitors this month, --; total since October 1, 147.

It's such warm beautiful weather up here that I feel like the old long-horned cow, I want to be back on my summer range again. Yes, I'll

NATURAL BRIDGES (CONT.)

be glad to go back as I don't believe I was cut out for a city dude. It won't be long now if all goes well.

I have had some very fine times this month. On February 4 I was invited as a guest to a Boy Scout banquet with 70 Scouts, their parents and Scout Masters, and several others. I was given 15 minutes and when my time was up they encored me and asked that I talk 10 minutes longer. I am sure that that crowd knows something about the Natural Bridges and some other spots in the southwestern part of Utah now. A few days later I went over to the L.D.S. Bureau of Information and was looking at a beautiful picture of Owachoma Bridge hanging in a big window. The picture is on glass and hanging in a window makes it shine out. Others were attracted and someone asked if I knew anything about it. Then I really came alive, and before I knew it there were 40 or 50 people listening to what I was telling. Then I took them to see five or six mummies and several hundred artifacts that we had gathered with the mummies, so San Juan was put on the map as far as that crowd is concerned. Five or six times since then I have repeated, and I find that I can always get a crowd to listen to me. One day I had five army officers from San Francisco, and every time I had a crowd, most of the people were from other states.

Yesterday I was invited to go with Mr. J. H. McGibbeny (the man who was at the Bridges last fall with Custodian Reed from Arches). He showed natural-color slide pictures of Lasal Mountain, Arches, Natural Bridges, Monument Valley, and many others to a group of women, 72 in number, that were holding a club meeting. Mr. McGibbeny introduced me and asked me to tell them all about what was being done to put southeastern Utah on the map. Then, of course, I told them about that scenic section. Believe me, Mr. McGibbeny has some of the most beautiful pictures of that country that have ever been taken and he is now a booster for Grand and San Juan Counties and all of the Four-corner country.

So, I have talked to 700 or more people this month, in all, and I am glad to have had the chance. I love to talk about the country and the things that I am interested in. I believe that this number could almost be doubled, but I don't want to be extravagant.

*****SWM*****

I would say that Zeke had earned his winter salary of a dollar per month, wouldn't you, Chief? It is interesting to note that Zeke is no platform orator; this is just a case of a man who knows his country thoroughly, is thoroughly sold on it, and wants to give the other fellow the same pleasure of seeing it. He draws and holds a crowd without a particle of trouble and his hearers are being educated while they are being entertained.

NATURAL BRIDGES (CONT.)

Which reminds me that we received quite a compliment some little time ago when an officer high in the administrative circles of a nationally known automobile company held a state conference of his agents in Phoenix and spent the better part of an hour telling them how he was shown through the Casa Grande Ruins by a guide who made it intensely interesting for him, and, who, upon being questioned, said that was the fifth or sixth trip he had made that day. The officer said that if he could get all his agents to carry their enthusiasm for selling to that height, the factory would be working overtime to furnish cars. And we don't know yet which guide he was talking about!--F. P.

*****SWM*****

CHACO CANYON

By Lewis T. McKinney, custodian,
Chaco Canyon, New Mexico.

Visitors this month, 301; total since October 1, 1986.

Well, Boss, I will celebrate my daughter Ora Elaine's fourth birthday by writing this report.

Nothing much has happened this month of interest, except four days over at Aztec Ruins National Monument helping Cal. get ready for the Region meeting which was held there on the 14th of this month. The people all seemed to have enjoyed their visit to the ruins, and the wonderful service given them by Custodians Miller and Farris, but Custodian Mac wasn't mentioned by any one. I guess they found out that I cut the wood and built the fires which created so much smoke in the Great Kiva, but the Kiva was warm and there was not any smoke to speak of when they arrived. However, some Wise Guy thought he would help out by putting several big pieces of wood on the fire in the fire-place, so you can guess what happened. And by the time all that smoke had cleared, (or about cleared so you could stay in there without tears) the women had finished their meeting. They came over and, of course, wanted to help also, and while Cal, Johnwill, and I were helping the ladies down the steps, one of the women put on some more wood. And on into the night and smoke we sat, listened, slumbered, and wept.

We have had quite a lot of moisture this month, rained one day, snowed and rained another, and snowed three days. Precipitation this month totaled .43 inch with seven inches of snow. We also had a couple of stiff winds, which makes you think that the ground-hog saw his shadow. Minimum temperature for this month was 9°, and 57° was maximum. Six days were cloudy, ten partly cloudy, and the balance clear.

Three hundred one visitors were through the monument this month, in 91 cars, trucks, and wagons. We also had one Harvey Bus this month. This is not many visitors, but I am getting my old boots half-soled and my breeches patched and my one shirt laundered so I will be all ready within about thirty days. I have a feeling that we are going to

CHACC CANYON (CONT.)

have more than 10,000 visitors this year, and if I can get my old Park Service Salesman (Homer Hastings) back this summer, I think we will have more than we can handle a year from this summer. It doesn't take much of a salesman to sell Chaco to the visitors if he really knows what we have here and where it is. And Homer certainly knows the canyon and can show it to the visitors. I have a few new bargains for our visitors this year, too.

The Bakers left the Canyon the 17th to take over another job excavating at Canyon, New Mexico. We all were very sorry to see the Bakers leave.

Mr. and Mrs. Paul Reiter are back in the Canyon again for the summer, and we all welcome them back, even the new daughter which made her first visit to the Canyon on the 16th. Paul has been with the State Museum for a number of years, but since they have turned over all their interest along with the American School of Research to the University of New Mexico, Mr. Reiter will be in charge here in the Canyon for the University. All the big shots of the University will be out to the Canyon on Monday, the 23th. of this month to make plans for the future.

Well, Threatening Rock is still at it! It measured 3 1/8 on the east, 3 1/8 in the center and 2 15/16 at the west end this morning. Now what? I plan to start measuring it each morning and each evening, starting in the morning, February 24. All of these measurements, you remember, were set at 2 inches last August.

The roads are in pretty good condition in both directions. They have been passable all winter, a little slick for a day or so, but nothing to worry about. We have fixed a lot of the bad mud holes in the trail roads here in the Canyon, and should be able to get around much better than we have in the past. From all the flags and stakes the New Mexico Highway Department has along Highway 55, they must plan to do some more work on that road.

I hope Jackson and Boundey never, never contact some of the nice little striped kitties that I have, because if they do, they certainly will have a loud story to tell. I know of a guy that liked to show his boy friends what he could do when he was just a lad. One day when he was out rabbit-hunting down on Black River, he found a skunk in a steel trap. This wise little lad walked up and hit the little kitty right between the eyes with his fist. My, my, never again! Anyway, his pals dragged him down to the water and stuck his head and all under. This happened 16 years ago this month, and if any of you have been in Black River during the month of February you can tell the balance how cold that water gets.

This mild winter we have had in the Chaco has certainly helped us out a lot. We have been able to work on the walls of Bonito most of

CHACO CANYON (CONT.)

the time, and saved a lot of the walls that would have gone if we had another winter like last. And there are a lot of walls in the other 16 major ruins that certainly would have been damaged a lot if this had been another tough winter. I hope we can get to some of these before another winter.

*****SWM*****

The figures on Threatening Rock are beginning to get interesting. From a zero in August, 1937, the Rock has moved out as follows:

	<u>East</u>	<u>Center</u>	<u>West</u>
December	10/16 inches	11/16 inches	9/16 inches
January	12/16 inches	14/16 inches	12/16 inches
February	17/16 inches	17/16 inches	15/16 inches

It looks as if there is a movement forward amounting to about 3/16 inch per month through the fall and winter months. Possibly this will be reversed in the spring and summer months.--F. P.

*****SWM*****

MONTEZUMA CASTLE

By Earl Jackson, custodian,
Camp Verde, Arizona.

Visitors this month, 466; since October 1, 2,907.

VISITORS- - - - -	466.	Last Year: 313.
Arizona by cars - - - - -	266	- 57% of total.
California by cars- - - - -	58	- 12.4% of total.
Total states- - - - -	28	
Foreign countries (British Columbia)- - -	1	

CONVEYANCE

Cars- - - - -	136
Horseback - - - - -	23

CONTACTS

Guided field trips- - - - -	105
Attendance- - - - -	295
Trips through Castle- - - - -	85
Those who climbed ladders - - - - -	230 - 78.49% of total on trips.
Average persons per trip party* - - - - -	3.85
Average persons per trip group**- - - - -	2.81
Average trip time per party - - - - -	58.18 minutes.
Average trip time per group - - - - -	42.09 minutes.

*Party means total persons on part or all of a trip.

**Groups are natural arrival units of a party.

MONTEZUMA CASTLE (CONT.)

Museum talks- - - - -	91
Attendance- - - - -	259
Average persons per talk party- - - - -	3.8
Average persons per talk group- - - - -	2.84
Average talk time per party - - - - -	23.82 minutes
Average talk time per group - - - - -	17.8 minutes
Special guide trips - - - - -	6
Attendance- - - - -	14
Average party and group time- - - - -	18.83 minutes
Unguided trips- - - - -	53
Persons on unguided trips - - - - -	167
Average unguided trip time- - - - -	19.30 minutes
Average actual guide and lecture time - - -	60.95 minutes
Average group minutes on monument - - - - -	81.65 minutes

WEATHER

Precipitation - - - - -	1.01
Days cloudy - - - - -	13
Days partly cloudy- - - - -	4
Maximum temperature - - - - -	71 on February 7.
Minimum temperature - - - - -	19 on January 25.
Mean maximum- - - - -	60.02
Mean minimum- - - - -	31.79

WEATHER AND ROADS

Weather has been fairly moist and cloudy, but mild. On February 10 a brief hailstorm occurred, and on February 19 it snowed heavily for about an hour, but it melted as quickly as it hit the ground. As an aftermath of this snow the roads were quite muddy for a day. It is of interest to note that on February 17 a slight flood occurred in Beaver Creek. This was the first flood in about a year.

Approach roads are more open than usual this winter. While no visitors have been down from the Stoneman Lake road, the Apache Trail through Pine and Payson has brought in several people. So it can safely be said that the Apache trail, at least north of Roosevelt, is in a little better shape than customary for February. Travel over the Black Canyon road is very slack now.

The approach road from Sedona via Beaver Creek is rough. The approach road from Highway 79 at Cornville is still under construction, and consequently quite rough in places. The road which is bringing most of our travel now is the one from Cottonwood via Camp Verde, and it has been kept in excellent condition.

Snow has not interfered with travel over the highways from Prescott and Flatstaff. In fact, this is an unusually mild winter, with very

MONTEZUMA CASTLE (CONT.)

little snow.

SPECIAL VISITORS

National Park Service: January 29 - Dr. Charles N. Gould, regional geologist, and Dr. W. B. McDougall, regional wildlife technician, made an official visit to this monument, and we spent an interesting and worthwhile two hours with them.

February 20 - Gordon Vivian, Foreman of the CCC Mobile Unit located at Chaco Canyon, in company with Mr. Reed, stopped in to see the Castle and museum.

Other Visitors: Mr. J. B. Houghton, a Maine artist, made several visits during the month doing water color paintings of the Castle.

January 25 - Mr. and Mrs. John E. East, of Oak Park, Illinois, paid a two day visit to the Jennings, and were much interested in the monument. Mr. and Mrs. East need no introduction to Southwestern Monument folk as ardent Park Service enthusiasts.

February 2 - Mrs. A. C. Carlson, wife of the head surgeon of the Phelps-Dodge Hospital in Jerome, was an interested visitor.

February 13 - J. W. Hubbard, manager of Radio Station KCRJ, of Jerome, Arizona, was an interested visitor.

February 14 - Burr Williams, of Winslow, Arizona, an old timer who saw the Castle in 1977, was a quite interested visitor.

February 15 - Henry Boston, an historian from Massachusetts, was a visitor.

PUBLICITY

J. W. Hubbard, Manager of Radio Station KCRJ of Jerome, Arizona, informs us of pending publicity. His station has exchanged 15 programs of 15 minutes each with the Warner Brothers Station KLS in Oakland. These talks will cover 15 weeks, and will begin April 1. Five of these talks will be on features of the Verde Valley, and one of these five will be about Montezuma Castle.

NATURE NOTES

Early this winter we thought the lizards were going to hibernate. They did, but only for short periods, during the coldest spells, and have been out frisking around on warm days, especially on sunny sides of the cliff and on the south sides of bushes.

MONTEZUMA CASTLE (CONT.)

The slight flood of February 17 appears responsible for bringing out some of the dormant frogs. For on the night after the high water, the Jennings heard frogs talking in several places on the creek.

On February 10 the Jennings heard two coyotes yapping on monument territory a short distance across the creek from their tent house. The Jennings also report seeing two large jack rabbits recently. Jack-rabbits, while once plentiful in the valley, appear to be getting somewhat less common. It is very seldom we see one nowadays in this immediate vicinity.

On February 21 the H.C.W.P. saw two cottontail rabbits taking a dust bath in our back yard. I should say only one was taking a bath, for the other was an interested on-looker. While one rolled around and around in a dust pocket, the other watched, and then proceeded to interrupt the ablutions by chasing the bather away. This happened two or three times, the bather repeatedly coming back to the dust pocket until finally satisfied he was clean, or dirty, I don't know which. Anyway, they both bounded off together a minute later.

For Bird Notes for Montezuma Castle, see Betty Jackson's report at the end of this report.

GENERAL

From the custodian's viewpoint, things have gone satisfactorily here this past month. Trip time and museum contact time have increased. In spite of one bad entrance road, our interested visitor run has held up. A busy season is anticipated this summer, if present travel increase means anything.

Several days of the custodian's time this month was spent in collecting data for and the preparation of a large scale map of part of the valley. Most of his other free time was devoted to pushing toward completion a miniature model of one of the cliff rooms uncovered by the 1933-34 dig in the lower ruins. From visitor reaction to one miniature model made last year, it is confidently expected that this second and more elaborate model will be well received. It is not completed yet, but another week should see it done.

The general outlook of people in this valley, especially the ranchers, is a bit gloomy this year. The winter has produced so little snow on the mountains that cattlemen expect a starvation year. Also, the copper mines are running on curtailed production, so a lot of men are out of work, although many expect to be put back most any time.

Last month I stated that our carefully prepared museum exhibit of sexual differences in male and female bones was a little too complicated in its labeling. Since then some simplifying has been done,

MCNTEZUMA CASTLE (CONT.)

by addition of a picture and designations of a few different bone parts on it. Instead of helping the interest situation, the simplified label has apparently harmed it. So here is how it stacks up when we prepare a bone case:

At first the exhibit had no labels. Then we found the visitors were pretty much interested in it. They were willing to listen to explanation of the bone features, and to ask questions. Then we put in some labels, to make the exhibit self explanatory and simpler to understand. After that, the visitors paid little or no attention to the case, unless the guide specifically called their attention to it and held them there while he told the whole story. Now, with the final simplification of the labels, people practically won't look at the exhibit at all. So where does that put us? Why make labels if people won't look at them?

I suppose the labels look too much like we are trying to educate the people. That must be the feature that horrifies them. They (most of them) are not here to learn but to be entertained. I reckon you must have been right when you said it wasn't what you had in the museum or how it was fixed up, but how the guide exerted his personality, that counted on contacts. Well, Jesse and I have lengthened our contacts here in the past few months. But we have not taught the people any more than we did before. We have simply put forth more effort to find what the people wanted to talk about. The result is, we do an awful lot of listening along with our talking. That can be done in a national monument where you usually have only one family in a group. In this group, one person will usually want to do all the talking. We expose this group to education and archaeology as much as they can stand, and then listen, with polite comments of "How interesting!" or "I saw one of those once, too, but it wasn't a very good one." Result: we build up our contacts, but the sum total of education dispensed has shown no increase.

I can lengthen the stay of visitors in this museum. But I don't believe it can be done with labels or with additional archaeological material. People are becoming jaded from archaeology. What I'll hold them with will be lifelike mounts of stuffed snakes, insects, animals, etc. I know I can lengthen their stay with such material, because I have proved it since last August by installing such things, and watching the people react.

This has not been a complaint. If it is okay with you and Washington that we stress archaeology less at these archaeological monuments and lay increased stress on Natural Science, it suits this person to a "T". For it is very interesting work fixing up exhibits of flora and fauna. And when you get through, people get a lot of kick out of it.

MONTEZUMA CASTLE (CONT.)

BIRDS AT MONTEZUMA CASTLE

By Betty Jackson

Follows a list of the birds seen this month on the monument:

Chestnut-backed Bluebird	Arizona Cardinal
House Finch	Pale Goldfinch
Desert Sparrow Hawk	Red-tailed Hawk
Treganza Blue Heron	Killdeer
Belted Kingfisher	Ashy Ruby Crowned Kinglet
Oregon Junco	American Merganser
Great Horned Owl	Black Phoebe
Gambel Quail	White-rumped Shrike
Townsend Solitaire	Gambel Sparrow
Crissal Thrasher	Cactus Woodpecker
Baird-Bewick Wren	Canyon Wren

It's funny, but no Mourning Doves have been seen on the monument recently, though they are very numerous elsewhere in the vicinity. They'll probably be back in breeding season, however.

The Black Phoebe arrived, to the best of our knowledge, on January 28. The Crissal Thrashers appeared on February 12 for the first time in a month. They certainly put their hearts into their songs. On February 20, I was distracted from the breakfast dishes by a full, rich song, somewhat like that of a canary, but with deeper quality and more variety. The bird was nearly a quarter mile away, sitting on the top-most twig of a mesquite and bursting with song. It was a misty morning, trying to clear off after the rain and snow the day before, and apparently conducive to happiness.

The House Finches were singing in the tops of the sycamores, and a Baird-Bewick Wren was donating his attempts from the fallen brush by the creek side. In spite of a funny, rusty quality, his song was pretty. Today Jane heard a thrasher do a take-off on a House Finch. He would listen to the finch sing, then imitate the song. Though his imitation wasn't perfect, it was recognizable.

The Townsend Solitaire was seen on February 5. On the same day, a male Cardinal preened himself, using the creek as a mirror, for three quarters of an hour that Jane watched him. We was across the creek from her, hopping from the stones to the bank and back again, cocking his head this way and that, and drinking occasionally, but mostly just looking at himself, as far as Jane could tell.

On the 10th Jane heard a Killdeer for the first time in quite a while. They have been heard three or four times since. Up until that day, the heron had been feeding every morning up and down the water hole by the tent.

MONTEZUMA CASTLE (CONT.)

The 12th seems to have been quite a day for birds. The bluebirds were seen then, though only a few of them; the Crissal Thrasher, and several flickers in the same bushes; the American Mergansers, and the daily visitors such as the Cactus woodpecker, juncos, sparrows, and kinglet.

On the 16th, Jess saw six American Mergansers in the long hole you look down on from the Castle. That night a Great Horned Owl lit on a branch close above the tent and hooted considerably. The boys tried to sneak out and watch him, but could not see his markings - only his size and "horns".

On the 17th, Jane saw a White-rumped Shrike on the monument. These birds are regular residents on the road between here and Camp Verde, and we see them nearly every time we go in, but I have not seen any here before.

The Belted Kingfisher was here only from the 2nd to the 16th and is now gone again.

*****SWM*****

Congratulations to Custodian Jackson for the thorough job he did on the map he speaks of preparing for headquarters.

We are very glad to hear of the museum problems at the Castle and we are ready with at least one answer to the label question: why make labels if people won't look at them? Labels are good for deaf visitors who receive information better through the eye than through the ear. Also we have found at Casa Grande, when the guide system breaks down, the labels are better than nothing. We would say, in response to the statement that the visitor is with us not to learn but to be entertained, that the two do not necessarily cancel each other out; it is up to us to see that he is entertained while he learns.

We disagree with you in the statement that you have built up your contact time but have not increased the sum total of education. We are free to admit that we don't know just what is education, but we think that letting the visitor carry part of the talk makes him think and can often be classed under the head of education, and we certainly learn a lot by watching his mind work.

You are right, Earl, about the interest you can raise in local flora and fauna and we would urge you to develop exhibits along those lines, not with the idea of stressing archeology less, but simply stressing these other things more than you have heretofore done.--F. P.

*****SWM*****

ARCHES

By Harry Reed, custodian,
Moab, Utah.

VISITORS

Although I have no way of determining the exact number of persons who visited the Arches during this month, I am sure there has been an increase over January. Dr. Williams and I have each conducted a party through the monument and there have been several others on which I have received reports. I would like very much to have a register at the end of the road near the arches. This would give a much more accurate check on the number of visitors. This could be installed with very little expense as the material would be the only cost. I think it would be worth much more than the cost and will gladly build it if permission may be had and a suitable book furnished by the Park Service.

WEATHER

It looks very much like spring is just around the corner. We have had the mildest winter in many years. Snowfall has been light but sufficient to insure plenty of moisture for the coming season. I have made a number of hikes during the past month and on each occasion the weather was ideal.

MISCELLANEOUS

On February 5, I received a letter from Mr. J. H. McGibbeny of the Salt Lake City Chamber of Commerce which is of unusual interest. The letter, in part, follows:

"Last Saturday (Jan. 29th.) Wilson McCarthy, Co-Trustee, E. A. West, General Manager, and Carlton Sills, Assistant Director of Public Relations, where is Salt Lake. We got them down to the Chamber of Commerce and I showed them pictures for two hours. Later Mr. Sills came up to my office and we studied maps for the definite purpose of planning circle tours and discussing the feasibility of building tourist facilities somewhere in that region. The circle tour would take off from Grand Junction, go south to Mesa Verde National Park, and then into Utah by way of Monticello. From Monticello side trips could be made to Monument Valley, Natural Bridges, the Goose Necks, and other scenic attractions to the south, then back to the Moab area, including Fisher Towers, Colorado River, and the Arches and on up to Crescent Junction or Thompson, where pullmans could be set off on sidings to pick up their passengers.

"I suggested a combination lodge and dude ranch in the neighborhood of Moab or Monticello. The railroad would probably favor Monticello because it is higher and cooler and the natural taking off place for the side trips to the south. The

ARCHES (CONT.)

fact remains that I have been able to accomplish definitely the start of the plan that I have discussed with you many times. We are going to get development down through that country by D. & R. G." *****

As you perhaps know, the three gentlemen referred to in Mr. McGibbeny's letter are officials of the Denver and Rio Grande Western Railroad. The pictures he mentioned are natural color lantern slides and motion pictures which we made on the many trips we have made together in this area.

AN INTERESTING SIDE TRIP

Again this month my brother and I felt the urge to take advantage of the fine weather to look over some of the country we had not seen before. This time it was Klondike Bluffs, that section which lies south and west of Salt Valley and which is within the proposed extended boundary of Arches National Monument. I was somewhat surprised and greatly pleased to learn that this is one of the most scenic sections of the area. Outstanding among the attractions are the Tower Arch and the Fingers. Tower Arch is all that its name implies. A lofty tower at the base of which is a beautiful arch of massive proportions. The Fingers are well named. They stand out boldly against the sky atop a narrow ridge of sandstone. Klondike Bluffs may be easily reached from Salt Valley. A hike of less than a mile over a fairly good trail puts one into the area. The road through Salt Valley is in fair condition.

*****SWM*****

We will make arrangements to install the register Harry asks for so we may get some figures on the number of visitors at Arches this summer.

It is to be hoped that the proposed circle trip in southeastern Utah and southwestern Colorado becomes a reality; it will open up a very wonderful district to the train visitor.

Harry's description of the Klondike area sounds interesting. Our proposed extension, however, seems hung up until a flock of oil claims which cover that country expire. We can't take in land covered by such claims even though we feel certain oil will never be found in profitable quantities in that particular district.--F. P.

*****SWM*****

CANYON DE CHELLY

By Johnwill Faris, custodian,
Chin Lee, Arizona.

Visitors this month, 45; total since October 1, 257.

CANYON DE CHELLE (CONT.)

We received a headquarters memorandum this month requiring us to be more specific in our monthly reports and giving us a skeleton form consisting of some 41 numbers to be used in checking the completed report so that we might see that we had actually put some meat into it in order that twelve such monthly reports would work up into an annual report which would show everything that had taken place at the monument during the year. If it takes 41 subdivisions to make a good report, Boss, I must have been one of your prize spoofers over the past nine years and I sincerely apologize for the lack of facts in all those reports.

Our ideal weather of the past few months has given way to storms and our roads are nearly impassable. We have not had an excessive amount of snow, but these, coming after such ideal weather and so late in the season when we are expecting winter to give way to spring, make it seem harder than it otherwise would.

Things have been very quiet this past month as this is of course the dullest time of the year with us. I have made the regular inspection trips over the monument and have observed no vandalism. Sundays are likely to be visiting days for the local people at this time of year, so I have been careful to cover all points on Sundays which are generally frequented by local picnic parties. Our present financial condition prohibits as many inspections as I would like to make, but I feel confident that no vandalism is occurring.

During the month I received several of the Uniform Distress Signals signs and have put them up.

Road maintenance during February consisted of minor repairs, cleaning drainage trenches, and filling in low spots. There was no new construction either on or near the monument.

The Soil Conservation Service did considerable planting and fencing to protect planting.

I have spent some time the past month studying the archeology and history of Canyon de Chelly and am thus better prepared for next summer's work.

We have had quite a mad dog scare around these parts of late and the Indian Service officials have been killing some of the Indian dogs. In this matter of dogs, Boss, I want to be excused from your recent office order that all dogs within the monument be kept on leash. You know how many dogs these three hundred odd Navajo Indians have on this monument, and a Navajo with a dog on a leash just doesn't look natural.

We had 45 visitors for the month, which is a larger number than February usually brings us. One Sunday alone accounted for 33 of

CANYON DE CHELLY (CONT.)

these and, of course, many of them were local people. A doctor from the Ganado Mission, 40 miles away, was in with his sister from South America. Otherwise three western states furnished all our visitors.

The ground water level has risen around the headquarters area in the past few weeks putting the septic tank practically under water. There is nothing serious about the situation and both sewage and water systems are functioning perfectly.

I made an official trip to Aztec National Monument during the month to help Cal. handle the crowd at the Legion meeting which was held at his monument. Lewis McKinney was up and we three had a fine reunion. Cal. has a wonderful monument and I noted many improvements over the Aztec of old. It was funny to see old Cal. swell up like a blimp when the crowd spoke so nicely about his place. He forgot all those remarks he used to make about Aztec when he lived off in those sand dunes around the Chaco. Anyway, he proved to be a wonderful host and I heard many compliments from the visitors on the way he handled the crowd. My compliments to you, Sir Cal.

I made two trips to Gallup for supplies, both being quite a contrast to last year when I got caught at the other end of the road and had to wait seven days for the country to dry up enough for me to come home.

On the whole, the month has been a good one in an open winter. Spring weather seems on the way and it will not be long until we will be greeting the summer visitor.

*****SWM*****

Johnwill is right about the office memorandum; we want to get more meat in some of the reports so that at the end of the year we can condense the twelve monthly reports from a monument into an annual report that will fill something more than a dozen lines.

It isn't that we want you to follow the subdivisions of that outline number by number; that would make our monthly report to the Director a deadly thing to read. As we said in that memorandum, we want you to write a regular narrative report, the very best you can; then take the outline and check in the margin of your report the number in the outline which is covered by the paragraphs of the report. It will probably develop that you have overlooked several interesting points which the outline will call to your attention. Add these points to your report and you will be adding meat to your annual report.

If you don't believe there was cause for that memorandum, sit down, one of these winter evenings, and go back over your last twelve reports in the monthly reports; read them thoroughly, and then say if they represent a true picture of all that took place at your monument

CANYON DE CHELLE (CONT.)

for the past year.--F. P.

*****SWM*****

BANDELIER

By C. G. Harkins, custodian,
Santa Fe, New Mexico.

Visitors this month, 221; total since October 1, 2,697.

WEATHER

Days Cloudy	- - - - -	-12
Days Partly Cloudy	- - - - -	-12
Days Clear	- - - - -	7
Max. Temperature	- - - - -	-58° (9th)
Min. Temperature	- - - - -	8° (18th)
Mean Maximum	- - - - -	-44.23
Mean Minimum	- - - - -	-22.83
Mean	- - - - -	-33.03
Range	- - - - -	-22.35
Precipitation	- - - - -	.52
Snow	- - - - -	6 inches

All equipment for the Weather Station has arrived and has been placed in operation as of February 16.

Weather for northern New Mexico had been ideal up to the evening of February 15 when a light rain turned into snow. Snow continued falling the remainder of that night and all day the 17th. It cleared up in the evening, leaving a total of five and one half inches of very wet snow on the ground. This much-needed moisture is very welcome as the unseasonably dry winter has caused considerable concern, and unless there is more moisture in the timber, the fire hazard may become serious in the coming season.

ADMINISTRATIVE

One official trip was made to Headquarters. The Custodian left Bandelier at 7:00 a. m. on February 6 and arrived at Casa Grande on Tuesday at 9:30 a. m.; returning to Bandelier at 9:30 p. m. on Saturday, February 12.

PARK SERVICE VISITORS

February 18 -- Mr. H. A. Montgomery, Associate Engineer, Regional Office, Santa Fe; Mr. Clark Wells, Regional Electrician, Santa Fe; and Mr. Alden B. Stevens, Jr., Washington, D. C.

BANDELIER (CONT.)

MAINTENANCE AND IMPROVEMENTS

A new trail has been laid out along the creek leading to the ruins, which makes it nicer for the visitors in making the ruins trip in place of the road leading by the CCC barracks. This trail was laid out quite some time ago.

A flag pole has been erected and a drinking fountain placed in the portal between the Administration Office and the museum.

Roads leading to the monument have been in fair condition, but since the recent snow fall, they perhaps will become sloppy.

BIRDS

Bird banding has continued all month and a total of 77 birds were banded. They consisted of three Canyon Towhees, 62 Grey-headed Juncos, five Pink-sided Juncos, four Shufeldt Juncos, four Red-backed Juncos, one Pine Siskin, and two Montana Juncos.

TRAVEL STATISTICS

Total travel- - - - -	-221	Total contacts- - - - -	-138
Museum trips- - - - -	25	Special groups- - - - -	47
Total guide time in the field	-1,975	Total guide time in museum-	-380
Total guide time special- - -	10,820	Total visitor time- - - -	13,175
Average time field trip - - - -	71	Average time museum contact -	15.5
Total guide minutes - - - - -	-2,355		

NEWSWORTHY VISITORS

January 28 -- Mrs. E. M. Childs, Mr. and Mrs. Vern M. Sunderland, archaeologists, and friends of Dr. Hewett.

January 26 -- Mr. Miller, U. S. Forest Service, Albuquerque, and party of four, spent several hours in the Canyon.

February 4 -- House, N. Mex., Consolidated School basket ball team, 10 members, made a trip through the ruins.

February 19--Herbert Mchlorn and Werner Heyensenter, Berlin, Germany.

Travel to Bandelier held up the first part of the month, but unsettled weather conditions the last two weeks had a telling effect on our total. Snow and icy roads proved a serious handicap to visitors, there being 221 visitors, 39 less than in February, 1937. Museum and guide service was given to 138 visitors, 28 guided trips, and 25 museum talks being made, averaging 28 minutes per guided trip and 2.5 persons per party.

The cold, clammy atmosphere of the museum was rather a handicap. The visitors would step in and look around, give a little shiver, and

BANDELIER (CONT.)

leave the museum attendant talking to himself. On the other hand, in the summer time, they seek the cool retreat of the museum building after a trip along the cliff houses with the sun bearing down.

ANTELOPE

Unique among the antelope of the world, among which it has no near relatives, the pronghorn, because of its beauty of coloration and its grace and fleetness, claims the attention of sportsmen and nature lovers alike. It is a smaller and slenderer animal than the larger forms of the Virginia deer. Its hair is coarse and brittle, and the spongy skin lacks the tough fiber needed to make good buckskin. Both sexes have horns; those of the female being smaller and slenderer. One of the peculiarities of this antelope is its habit of shedding the horns every fall, but unlike the deer and elk which possess true antlers, the complete horn is not shed, only the outside shell, leaving a bony core.

The conspicuous rump patch is formed of long, pure-white hairs and, when the animal becomes excited or alarmed, these hairs are raised on end to form two great chrysanthemum-like rosettes that produce an astonishingly conspicuous spot which acts as a signal of alarm. The power to raise these hairs has been noted in fawns when only a few days old. Even when these hairs are not erected, this patch is conspicuous at a distance of one to two miles, as the antelope gallops away. Should the animal suddenly halt and face about to look back, as is a common custom, its general color blends with that of the background and it vanishes from sight as if by magic.

Early explorers discovered antelope in abundance over a vast territory extending from near the present town of Edmonton, Alberta, Canada, south to near the valley of Mexico, and from central Iowa to California on the Pacific Coast. Great bands containing thousands of animals roamed the plains of the "Great American Desert" where they mingled with vast herds of Bison or buffalo. So abundant were they that it has been estimated that on the great plains they equalled the buffalo in numbers. Now, reduced to a pitiful remnant of their former numbers, they exist only in widely scattered areas where they are constantly decreasing. Considerable numbers of pronghorns are still found in Wyoming, Nevada, eastern Oregon, and New Mexico, and public sentiment as a whole is so strongly in their favor that there is hope that they may long remain in these areas.

Antelope present a unique study when considered as a game species and from a game management point of view. Apparently of a highly nervous temperament, they do not thrive and increase in enclosures, even in large game preserves, as do deer and elk. Their confinement apparently has some bearing on their reproductive processes and reduces their rate of propagation.

Every wild species of game has certain fixed habits which govern the reproductive process and determine its maximum rate of increase. Antelope, for example, are polygamous, reproduce each year from the age of two years, and average two fawns, hence they could increase during the same period of three years to ten, provided there were no casualties. This potential maximum rate of increase is, as nearly as we know, a fixed property of this species, and each other species likewise has its own fixed maximum breeding or reproduction potential. In determining the actual rate of increase, the logical method would be to take the census of a given area, and in doing this, unless the area on which the census is to be made is very small, the census must use samples instead of attempting a count of the whole area. These samples must either be selected so as to be representative of the whole, or they must be so numerous that their abnormalities will be averaged out. The accuracy of the census will depend on the number of samples, the skill with which each is selected, and the skill with which the enumeration of each is made.

The method of enumerating antelope and the season of attempting it must be adapted to their habits, as they gather in herds of more or less fixed composition, and if these can be found on open ground or can be flushed so as to be counted while running, the census problem would be solved. This method is used quite extensively in securing a count of the elk in Yellowstone National Park. A census of the antelope of New Mexico was taken in 1927. The herds were small and in isolated areas, and therefore the maximum number seen constituted a census. The census showed 2,950 antelope in the state, or one antelope per 42 square miles. The actual inhabited range is about 4,650 square miles; thus a density of one antelope per two square miles is established on the actual range.

The travel radius of antelope is very small, perhaps not over one-half mile a day, excepting under adverse conditions when this distance would be considerably increased. Their radius over a period of a year at the most is not over 35 miles and the ideal range consists mainly of grassland and a little brush land. Homesteaders, often confronted with extreme poverty but with an excess of idleness, managed to remain on grass lands long enough to exterminate most of the antelope. In instances of this kind where a species falls below the minimum population unit, it fails to thrive or respond to protection. The frequent failure of antelope to "come back" even under completely closes seasons is a case in point. Such failures have been attributed to the species having fallen below its "point of resistance". The actual nature of this phenomenon may be accounted for under a theory advanced by reliable frontiersmen that antelope herds of less than 12 or 15 usually do not fight off wolves or coyotes, but when attacked will stampede and scatter so that the weak individuals are readily cut down. This also brings up the question as to whether coyotes do pick on the weak ones or prefer a nice, fat yearling to older animals. Several instances of this kind

BANDELIER (CONT.)

have been known to occur in Glacier National Park when coyotes in pursuit of Big Horn Sheep would ignore an old weak ewe and take a spring lamb or a yearling instead. It is logical to think herds of 15 or more antelope could easily stand their ground as a unit, bunching up and fighting off attacking predators.

Extreme drought in some localities has at times seriously menaced the existence of antelope, but such danger is usually the result of excessive grazing. Antelope are hardy animals and when they die of starvation, range conditions are serious. Although there is little doubt but that they are able to dispense with water altogether where there are neither springs or polls, but where cactus abounds, they do drink during the dryest and hottest periods when water is available. They can and do thrive on succulents alone. A case in point is known where a herd in Wyoming went to water every day. Another herd thrived in the Salada Desert of Lower California where the only water for a hundred miles was in wells dug down vertically for 12 or 15 feet. Although antelope are not present in Bandelier National Monument, they are a native of the State of New Mexico and, under the present efficient game regulations, the state should show an increase in the antelope herds in future years.

*****SWM*****

It was nice to have Cy at headquarters and get some of his problems talked over.

We have received the allotment to rebuild the shop at Bandelier. This shop was lost by fire a month ago and the CCC camp can hardly function without it.--F. P.

*****SWM*****

BANDELIER CCC

By H. B. Chase, project superintendent,
Santa Fe, New Mexico.

During the month all pipe connections were made and the pipe lines covered to the new 20,000 gallon concrete storage reservoir making this a 100 percent completed project.

Wall construction of the Lobby and Sales Room (Unit No. 2 of the Hotel Development) has been completed to lintel height this month; all window frames have been set and the masonry work on the three fireplaces has been almost completed.

All lintels and vigas have been installed in the Employee's Dormitory (Hotel Development) and the sheathing has been laid. This unit is now ready for the laying of the roofing felt and the mopping on of asphalt.

The carpenter crew has finished eight new pieces of furniture with the exception of staining. Part of the carpenter crew has been busy hewing lintels and corbels for Units No. Two and Three of the Hotel Development. During the entire month there has been a large crew at work in the rock quarry, quarrying and shaping building stones for use in the Hotel Development. A small crew spent a major part of the month preparing lintel material and vigas for use in Units Two and Three of the Hotel Development.

Work upon the ruins, under the Ruins Stabilization Project, was completed in all details during the latter part of January, subject to inspection by the Headquarters Archaeologist.

*****SWM*****

The CCC camp at Bandelier has been doing its usual fine work and the lodge unit is taking shape. Hub Chase and his boys are giving us something there the Service can well be proud of.--F. P.

*****SWM*****

BANDELIER FORESTRY

By J. T. Fulton, forestry foreman,
Santa Fe, New Mexico.

FIRE PRESUPPRESSION

Just recently I completed the organization plan for fire protection this coming summer. About the only addition to this plan provided for classes to be held in fire suppression work for foremen, leaders, and lookouts. In the case of the foremen's school, a better understanding of our organization, a more thorough knowledge of what constitutes good fire fighting, and a better knowledge of the country will be imparted to the men. In the case of the leaders' school, I am going to endeavor to make better straw bosses of them. The purpose of holding our lookout school is that we are going to have a lookout point of our own and, in order to properly man this lookout point, a selected group of enrollees will be taught the duties of a lookout. From this group it is expected to obtain two men who will be efficient as lookouts. At the close of these schools, we will hold a theoretical fire, putting into use the knowledge obtained. It is felt that this practice, and the criticism of what occurs, will put the whole organization on its toes at the very start of the fire season.

In addition, we expect to make several improvements in the forest for purposes of fire protection. The primary one is our lookout point which is located on the Frijoles Canyon rim near the entrance road. It will be manned by an enrollee who will have an alidade for locating fires and a telephone for reporting. We are certain that this lookout will prove to be an important addition to our fire organization. By having our own lookout, we can have detection service for a longer

BANDELIER FORESTRY (CONT.)

period than we have had previously from the Forest Service lookout, the Dome. Another improvement is a telephone on Corral Point which will improve our communication considerably during emergencies. This new telephone will make a total of two telephones out in the woods, i.e. the old one south of Alamo Canyon and the new one on Corral Point.

In the near future I expect to spend about a week in further preparation for the fire season.

MISCELLANEOUS

For the past month I have been working on the Lobby and Sales Room, Unit No. 2 of the Hotel Development, and finishing the painting of the Museum.

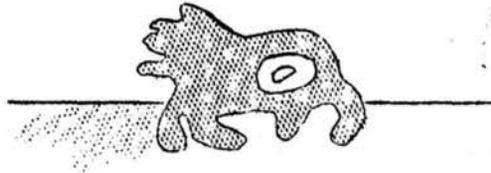
*****SWM*****

SOUTHWESTERN MONUMENTS HAS NEW QUEEN

On February 14, at Florence, Arizona, Park Naturalist King was united in marriage to Miss Hortensia Espinosa of Florence. Superintendent Frank Pinkley of Southwestern Monuments acted as best man.

Following the ceremony, the King and Queen left immediately on a trip to Mazatlan, Republic of Mexico, from which they returned March 2. The Kings are making their home in the Naturalist Residence on the monument where the Queen will add much to the social life of the personnel and their families.

*****SWM*****



HEADQUARTERS

BRANCH OF EDUCATION

By Dale S. King, park naturalist.

During the month of February, the Educational Staff consisted of Park Naturalist King, Junior Park Naturalist Dodge, and CCC Enrollee Marvin Hale. Junior Archeologist Charlie Steen continued on his temporary relief assignment at Tumacacori National Monument where he has been on public contact duty. Park Naturalist King took annual leave beginning February 12 for the balance of the month.

Following is a resume of the time devoted by the Branch of Education personnel to various projects:

	<u>King - Steen - Dodge - Hale</u>			
	<u>Days</u>			
<u>General Office Work</u>				
Correspondence (King 114 letters; Dodge 49)	.4-1/2	0	2-1/2	0
Conferences and discussion				
With Headquarters staff . . . . .	.1-1/4	0	1/4	0
With visiting scientists and technicians.	1/2	0	1/2	0
With personnel. . . . .	.1-1/4	0	1/2	0
Library (file, issue publications, etc.) . .	1/4	0	1/4	0
Reports				
Compiling and processing monthly report	.2-3/4	0	9	12
To Washington Office. . . . .	.0	0	1	0
To Region III Office.	1/4	0	0	0
Miscellaneous . . . . .	.0	0	1/4	0
Publicity				
Compiling and processing informational and publicity material. . . . .	.0	0	1/2	2-1/2
Check Region III publicity releases . .	.0	0	0	0
Miscellaneous				
Construction (painting, carpenter work, etc)	0	0	1/2	1
Wrapping and mailing material and supplies requested . . . . .	.0	0	1/4	1/2
Clean-up work . . . . .	.0	0	0	1
<u>Research and Education</u>				
<u>Public Contact</u>				
Preparation and delivery of outside lectures . . . . .	.0	0	2-1/2	0
Relief guide duty at monuments. . . . .	.0	28	1/4	1/2
Office visitors (informational)	1/4	0	1/4	0
<u>Museums and Nature Trails</u>				
Acquire and prepare specimens . . . . .	.0	0	1/2	1/2
Acquire equipment and supplies. . . . .	.0	0	1/2	0

BRANCH OF EDUCATION (CONT.)

	<u>King</u>	<u>Steen</u>	<u>Dodge</u>	<u>Hale</u>
Planning. . . . .	.0	0	1	0
Arboretum preparation and planting.	1/4	0	0	2
Visual Education				
Slide library work. . . . .	.0	0		0
Photography				
File prints and negatives . . . . .	.0	0	1/2	0
Taking and processing photos. . . . .	.0	0	1/2	0
CCC Side Camp Educational Program . . . . .	.0	0	1/2	0
Faunal observations and bird banding.	1/4	0	4	2
Ruins Stabilization Project Administration.	1/4	0		0
Mobile Unit at Chaco Canyon	1/4	0		0
Bandelier . . . . .	.0	0		0
Aztec Ruins . . . . .	.0	0		0
Field				
Field Trips(Organ Pipe Cactus). . . . .	.0	0	2-1/2	0
Field Trips(Bandelier,Chaco,Walnut) . . . . .	.2	0	0	0
Leave				
Annual. . . . .	.14	0	0	0
TOTAL. . . . .	.28	28	28	22

PROCESSED MATERIAL

The following pieces were mimeographed during the month:

- 500 copies of CCC Educational Class Report Forms
- 2,000 copies Casa Grande Informational Leaflets
- 2,000 copies Chaco Canyon Informational Leaflets
- 500 copies Bird Banding Band Number Record Cards
- 135 copies "Montezuma Castle in 1894" Article
- 500 copies Tumacacori Museum Informational Leaflet

All of the material except the Tumacacori Museum Informational leaflet were re-runs of previously compiled material.

PUBLICITY

Four hundred of the new Southwestern Monuments map and informational folders were distributed, as follows: 50 to the Tombstone, Arizona, Chamber of Commerce; 150 to the Phoenix Republic and Gazette Information Department; 125 to the Hartford, Connecticut, Automobile Club; and 75 to the Automobile Club of Washington, Seattle, Washington.

Three talks were given to outside groups, as follows:

- February 2. Arizona Museum, Phoenix; audience of 65.
- February 9. Geographical Society, Arizona Teachers College, Tempe, Arizona; audience of 57.

BRANCH OF EDUCATION (CONT.)

February 16. Future Farmers of America group of Coolidge High School, audience of 17.

SOUTHWESTERN MONUMENTS LOAN LIBRARY

Loan and return records were kept up to date, but no time was available for cataloguing accessions. New publications received during the month consisted of 14 books, 39 periodicals, 16 pamphlets, and six reprints.

ACCESSIONS

From Yosemite National Park, we received 26 projection slides, the majority hand colored. These were in exchange for a like number sent from this office. From Miss Hollie Hunsaker of Everett, Washington, headquarters received the January, February, and March, 1932, issues of the old Southwestern Monuments Epitaph. These were a particularly valuable accession as they constitute the only copies of the "Epitaph" in our possession. One House Finch study skin, one Kangaroo Rat study skin, and one immature Sidewinder Rattlesnake were put up during the month.

NATIONAL PARK SERVICE VISITORS

Tom Onstott, "Cy" Harkins, Bill Leicht, Dr. F. C. Potter, Gordon Vivian, George Hetherington, and Bill Stevenson.

NEWSWORTHY VISITORS

Clarence Buddington Kelland, Donald Culross Peattie, John E. Fast.

CASA GRANDE CCC SIDE CAMP EDUCATIONAL PROGRAM

With the Park Service personnel and their wives affording a comparatively large teaching force, a great variety of subjects have been made available to the boys of the Casa Grande Side Camp. The boys have taken advantage of this program with the result that every boy in camp is enrolled in at least one class, and many of them attend one or more classes each evening. The time spent in educational work, including the cooking class which is a daily, on-the-job affair carried on by Mrs. Hugh Miller, totals as follows: Auto Repair, 56 man hours; Barbering, 40 man hours; Bookkeeping, 5 man hours; Conversational Spanish, 84 man hours; Cooking, 1920 man hours; Elementary Arithmetic, 120 man hours; English, 27 man hours; General Building Construction, 264 man hours; Mechanical Drawing, 36 man hours; Penmanship, 18 man hours; Photography, 146 man hours; Plane Surveying, 12 man hours; Shorthand, 36 man hours; Southwestern Archeology, 63 man hours; and Typing, 26 man hours.

BRANCH OF EDUCATION (CONT.)

BIRD BANDING

Due to the enthusiastic assistance of Mr. and Mrs. J. E. Fast of Oak Park, Illinois, and to the "leg work" of Enrollee Marvin Hale, it was possible to band and keep up to date all records on the following birds:

Species	New	Repeats	Returns
*Bluebird, Chestnut-backed----	6	0	0
Dove, Inca-----	2	1	0
Dove, Western Mourning-----	2	0	1
Finch, House-----	106	15	10
Phoebe, Say-----	1	1	2
Quail, Gambel-----	25	83	1
Sparrow, Gambel-----	146	216	26
Thrasher, Bendire-----	2	0	0
Thrasher, Crissal-----	1	17	1
Woodpecker, Gila-----	0	1	0
Wren, Cactus-----	2	1	0
Wren, Rock-----	1	0	0
Total-----	294	328	41

Total birds handled during the month, 663.

*First banding record of this species for Casa Grande N. M.

As an experiment, 50 House Finches captured in the ramadas on the evening of February 24 were taken to Tucson and released at ten o'clock the following morning. The object of the experiment is to determine how many, if any, of the birds return to the monument, a distance of 67 miles (by highway). In the near future the finches in the ramadas will be captured again to determine the answer to the above question.

Mr. J. E. Fast has kindly compiled the following synopsis of this month's returns (birds not captured for at least three months).

* Indicates bird captured at least once during season.

Returns February, 1938.	Season extending from July 1 to June 30			
	1934-35	1935-36	1936-37	1937-38
1 Crissal Thrasher.	*	*	*	*
1 Mourning Dove		*		*
1 Gambel Quail.		*		*
1 Say Phoebe.		*	*	*
1 Say Phoebe.		*		*
1 House Finch		*	*	*
4 House Finches		*		*
3 House Finches			*	*
1 Gambel Sparrow.	*	*		*
3 Gambel Sparrows		*	*	*
17 Gambel Sparrows.		*		*
3 Gambel Sparrows			*	*

There were, in addition, four birds reported as returns for technical reasons which were caught this season only, but with an interval of three months or more between captures.

*****SWM*****

MOBILE UNIT

By Gordon Vivian, foreman,
Chaco Canyon, New Mexico.

Mr. Reed and I arrived back in Chaco Canyon late Monday. We found that Custodian Mac and Leader Dan Quiver had been doing right by our Nell, the Mobile Unit. They hadn't sold any of the equipment and all of the men were at work. Just before leaving for Coolidge, we had shifted part of the operations from the southeast corner, where most of our work has been concentrated, to the front tier of rooms on the west side. This is the area where many of the walls have fallen so low as to be no longer distinguishable. There is also here a far greater accumulation of wind-blown material than on the east side. By the time we returned, nearly all of this area had been cleaned up preparatory to repairing the walls.

We are at this writing running three separate gangs on the walls and a fourth is straightening out the drainage along the front of the ruin. One crew is doing a combined support and capping job on the east side on a two and three story room, No. 258. A second crew is also doing a combined support and capping job on the southeast side, Room 171, also two and three stories. The third and largest crew is on wall repair in the front rooms on the west side. There are sixteen rooms in this area, numbered 142 to 340. This is mainly all one story though some of it is on the second level.

This month we have done only one large wall repair job. This is on Room 241 where sixteen cubic yards of masonry were laid in repair and capping patched wall. Combined support and capping jobs are in progress on rooms 258 and 171. Here eighteen cubic yards have been laid. This is masonry which was built up to catch overhangs and support cracked walls. Exposed edges and tops of these supporting sections are laid in Bitudobe. Of straight capping, 67 square yards were laid on rooms 168 to 174 inclusive.

This is a drop in actual yardage from last month and the job sheets also show a slight increase, one fifth man-day per yard, in the amount of time necessary to lay a completed yard. This increase is due mainly to unsettled weather conditions. When conditions were unfavorable to laying masonry, the men were put to gathering and sorting rock. We now have enough rock on hand to last at least a month and a half at the rate we've been using it in the past.

*****SWM*****

MOBILE UNIT (CONT.)

It was a pleasure to have Gordon and Mr. Reed in the office for a short session and talk things over with them during the month. The mobile unit is doing some fine work on Pueblo Bonito and we hope it may continue its work for several years among our southwestern monuments.--F. P.

*****SWM*****

VISITOR NOTES

By The Boss.

February proved a good month so far as number of visitors was concerned. As nearly as we could tell we had 20,224 visitors to the Southwestern Monuments as against 15,661 during February of last year. Of the 4,653 gain, we should credit at least half to the mild and pleasant weather over the district which allowed more visitors to get to us than last year when the weather was bad. The remainder might be credited to the normal increase. One rather surprising thing is the drop of 1,000 visitors at Tumacacori whereas the other monuments show more or less gain in almost every case. Total attendance was a bit better than January which showed a total of 19,191.

With the 20,224 visitors we made 12,934 informational contacts or 63%. This is not so good as last month when we made a 72% contact nor was it so good as last year when we made 78%.

The figures indicate that there were about 11,734 visitors who were not contacted, about 9,000 of them being accounted for at White Sands, Saguaro, and Capulin, and the remainder in scattered lots of less than 300 down to 14 at the other monuments.

Of the nearly 13,000 informational contacts, we had 8,465 visitors on 1,511 field trips and 4,469 visitors on 692 museum trips. The average party in the field trip has fallen from 6.6 persons last month to 5.6 this month. The average party in the museum falls from 7.5 persons last month to 6.4 persons this month.

The average field trip time was 34.6 and the museum time was 21.8; both being below last month and last year. As we have mentioned elsewhere in this report, there has been a speeding up on the part of the visitor during February for which we have not been able to account.

If we are entering a wet spring season, as seems to be the case at the time of writing this report, our total will probably fall off in March instead of going above the February total as we would otherwise expect.

Our travel year thus far shows a total of 89,173 visitors as against 71,177 for the same months of the previous year. Since this increase in visitors is coming to monuments where they can do no particular harm, we are not averse to having the total go up over last year.

VISITOR NOTES (CONT.)

If we could get the proposed Anasazi Monument in operation within the next year, I would feel much safer about the future of several of our other monuments where we don't want the number of visitors to climb too fast nor too high.

*****SWM*****

Why do visitors suddenly take a notion to hurry? That is one of the questions that came up this month and thus far we don't know the answer. Along about the middle of February, I checked the average time for the boys guiding at Casa Grande and found that it was running lower than for December or January. This drop in time was not because of a new man or any single man; it was a general drop in every man's time. This caused us to suspect the visitor as the party at fault. At the end of the month the same general condition prevails and we have come to the conclusion that, for some reason, the visitor is speeding up.

The following table shows individual guide figures for the month:

	Days Worked	Parties		Time		No. Visitors		No. of $\frac{1}{2}$ trips per day
		Ruins	Museum	Ruins	Museum	Ruins	Museum	
Rodgers	19	110	71	3813	1445	951	735	9.5
Coyle	24	141	90	4655	1746	1138	737	9.6
Baldwin	11	66	49	2059	686	586	434	10.4
Savage	15	89	66	2558	1158	703	467	10.3
Jones	25	46	55	2052	1417	457	595	4.0
Bicknell	8	10	7	436	174	118	36	2.1
	<u>102</u>	<u>462</u>	<u>338</u>	<u>15573</u>	<u>6826</u>	<u>3953</u>	<u>3004</u>	

Baldwin again tops the list for the number of half trips per day worked, a half trip being either a ruins or a museum trip. Baldwin gets 10.4 half trips or a little more than five round trips per working day. He is followed closely by Savage with 10.3 half trips. Jones and Bicknell were doing outside work most of the time and were guiding in the pinches, relief during meal hours, early morning, after five o'clock, etc. Their working days and number of trips are cut accordingly.

The average trip time for the various guides works out as follows:

	<u>Ruins</u>	<u>Museum</u>	<u>Total</u>
Rodgers	34.6	20.3	54.9
Coyle	33.0	19.4	52.4
Baldwin	31.1	18.0	49.1
Savage	28.7	17.5	46.2
Jones	44.6	25.7	70.3
Bicknell	43.6	24.8	68.4
Average	<u>33.7</u>	<u>20.1</u>	<u>53.8</u>

VISITOR STATISTICS FOR FEBRUARY, 1938
SOUTHWESTERN MONUMENTS

MONUMENT	EMPLOYEES		FIELD TRIPS				MUSEUM TALKS				UNATTENDED	Total Information Contact	Total Travel	Per Cent Contact		
	Per. Temp.	No.	Att'd	Time	Av. Att'd	Time	No.	Att'd	Time	Av. Att'd					Time	
Arches	1	--	--	--	--	--	--	--	--	--	35	--	35	--		
Aztec	1	--	104	683	3730	6.5	35.8	111	709	2910	6.3	26.2	80	1392	810	171
Bandelier	2	2	27	69	1975	2.5	71.0	25	69	390	2.7	15.5	52	138	221	
Canyon de Chelly	1	--	5	21	360	4.2	72.0	--	--	--	--	--	24	21	45	
Capulin Mountain	1	--	--	--	--	--	--	--	--	--	--	--	750	--	750	
Casa Grande	2	4	49	395	1573	9.5	33.7	338	3004	6828	8.8	20.1	274	6957	4227	164
Chaco Canyon	1	--	2	90	1355	3.3	74.0	18	66	650	3.6	36.1	221	146	301	
Chiricahua	1	2	51	200	2870	3.9	56.2	--	--	--	--	--	202	200	402	
El Morro	1	--	16	45	875	2.8	54.7	6	19	350	3.2	58.3	14	64	50	
Gila Cliff	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Gran Quivira	1	--	37	135	2205	3.6	59.5	--	--	--	--	--	--	135	135	
Hovenweep	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Montezuma Castle	2	--	103	295	6105	3.8	59.1	91	259	2165	2.8	23.8	167	554	466	118
Natural Bridges	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Navajo	1	1	1	3	120	3.0	120.0	--	--	--	--	--	--	3	3	
Organ Pipe	--	--	--	--	--	--	--	--	--	--	--	--	700	--	700	
Pipe Spring	1	--	21	39	578	1.8	27.5	--	--	--	--	--	41	39	80	
Rainbow Bridge	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Saguaro	--	--	--	--	--	--	--	--	--	--	--	--	3500	--	3500	
Sunset Crater	--	--	--	--	--	--	--	--	--	--	--	--	150	--	150	
Torto	--	1	140	410	5290	2.9	40.1	79	276	1315	3.5	16.6	442	686	684	
Tumacacori	2	--	316	1513	9060	4.8	28.6	--	--	--	--	--	279	1516	1795	84
Walnut Canyon	1	--	5	16	85	3.2	17.0	24	67	550	2.8	22.9	60	83	127	
White Sands	3	--	200	1000	2000	5.0	10.0	--	--	--	--	--	4704	1000	5704	
Wupatki	--	--	--	--	--	--	--	--	--	--	--	--	39	--	39	
Yucca House	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
TOTAL	22	10	1511	8465	52381	5.6	34.6	692	4409	15148	6.4	21.8	11734	12934	20224	63
Last month	20	10	1274	8472	51594	6.6	40.4	736	5593	16428	7.5	22.3	10609	14065	19191	72
February, 1937	14	10	1181	8011	48196	6.7	40.8	632	3863	10280	6.1	16.2		12351	15661	

VISITOR NOTES (CONT.)

The average for January was 35.7 for the ruins, 23.2 for the museum and 58.9 for the total. The loss is 2.0 minutes on the ruins trip and 3.1 on the museum trip.

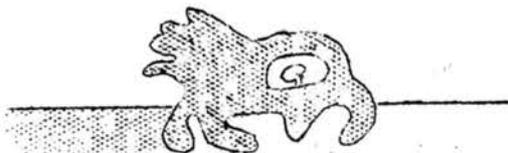
Why should 4,000 February visitors suddenly decide they must hurry up?

*****SWM*****

Last month, Thursday proved to be the low day of the week. In February, Tuesday was the poorest day. We averaged half trips per day as follows for the month:

Sunday- - - -37.5 half trips per day.
Monday- - - -25.7 half trips per day.
Tuesday- - - -21.4 half trips per day.
Wednesday- - -23.2 half trips per day.
Thursday- - -24.4 half trips per day.
Friday- - - -23.7 half trips per day.
Saturday- - -26.7 half trips per day.

*****SWM*****



THE Supplement

S-M MONTHLY REPORT

MAJOR INSCRIPTIONS AT EL MORRO

By Robert R. Budlong

(At the time of Lieutenant Simpson's visit in the year 1849. Also including the inscriptions left by Lieutenant Simpson, Kern, and W. Bird).

The inscriptions listed herein are those of major interest to visitors and, with but a few exceptions, have been photographed by the Chief Photographer of the National Park Service. The Department, therefore, has prints that may be used for purposes of comparison, for observations on types of carving, etc.

These inscriptions are here grouped into two lists: (1), those on the north side of the point (the N.E. point of El Morro) and; (2), those on the south side of the point. They have been so arranged because Lieutenant Simpson and his party first climbed the talus slope on the north side, not going to the south side until somewhat later.

The Spanish inscriptions are given both in Spanish and in a literal English translation. In each case there follows a brief summary of matters of interest connected with the story of the inscriptions, those who carved them, etc. Following this, references to source material have been given wherever practicable. This is not intended as a complete bibliography, by any means. In many instances I have quoted from "The History of Hawikuh" by F. W. Hodge (1937), this being a recent authority, and have omitted older references. The attempt has been made to keep data as brief as possible, and yet to cover all points that may be desired by one unfamiliar with the inscriptions or their history.

INSCRIPTIONS - NORTH SIDE:

This group of inscriptions is to be found on the north side of the Rock, at the top of a talus slope roughly thirty or forty feet high, and are numbered from 1 to 11, running from WEST to EAST. (Nos. 1 to 10, inclusive, are grouped at intervals of, roughly, six to twelve feet apart, in most cases).

1. R. H. Kern - 1851.
2. Lujan - 1632.
3. Simpson and Kern - 1849.
4. Felipe de Arellano (year probably 1700).
5. Don Juan de Eulate - 1620 (or Nieto, 1629).
6. Juan Paez Hurtado and Joseph Truxillo - 1736.
7. Juan Garcia de la Rivas - 1716.
8. Don Francisco Manuel de Silva Nieto - 1629.
9. Don Martin de Elizacochea - 1737.

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

10. de Arrasain - 1737.
11. Martinez - 1716. (This inscription is about half-way down the talus slope, on its eastern extremity).

From the Martinez Inscription to point of rock (N.E.) is roughly 220 feet.

INSCRIPTIONS - SOUTH SIDE:

Here I have given, roughly, distances separating this group of inscriptions. In this case the numbers run from EAST to WEST.

1. de Vargas - 1692. (approx. 192 feet west of point of rock).
2. Simpson, Kern, & W. Bird - 1849. (Approx. 60 ft. west of No. 1).
3. Drawing of buffalo (approx. 8 ft. west of No. 2).
4. Onate, 1605. (approx. 15 ft. west of No. 3).
5. Basconzelos - 1726 (this is under Onate's inscription).
6. Arechulata, Martin Barba, Ynojos - 1636 (approx. 30 ft. west of Nos. 4 and 5).
7. Juldo - 1709 (approx. 54 ft. west of No. 6).

N O R T H S I D E

INSCRIPTION #1:

"R. H. Kern Aug. 29, 1851."

BRIEF DATA:

This was the same R. H. Kern who, with Lieutenant J. H. Simpson, W. Bird, and the trader Mr. Lewis, first visited El Morro, September 17th and 18th, 1849. This present inscription was written on the Rock upon the occasion of Mr. Kern's passing by El Morro with the Sitgreaves' Expedition of 1851.

REFERENCE:

(Bancroft) "It was in 1851 that the first government exploration was made across northern Arizona. Captain L. Sitgreaves was ordered to follow the Zuni, Colorado, Chiquito, and Colorado rivers down to the gulf. With a party of twenty he left Zuni in September....." (Foot-note:) Sitgreaves, Report of an Expedition down the Zuni and Colorado Rivers, by Captain L. Sitgreaves, Corps Topographical Engineers. Accompanied by Maps, sketches, views, and illustrations. Wash. 1853....The party consisted of Capt. Sitgreaves, Lieut. J. G. Parke, Dr. S. W. Woodhouse, physician and naturalist, R. H. Kern, draughtsman, Antoine Leroux, guide, 5 Americans, and 10 Mexicans, packers, etc. An escort of 30 men of the 2d artill. was commanded by Maj. H. L. Hendrick."

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

(Bancroft) "Sitgreaves' exploration was followed in 1853-4 by the 35th parallel Pacific Railroad survey under Lieutenant A. W. Whipple. With Lieutenant J. C. Ives as chief assistant in a corps of twelve, and an escort of the 7th U. S. Infantry under Lieutenant John M. Jones, Whipple, having completed the survey from Fort Smith across New Mexico, left Zuni on November 23, 1853. His route was for the most part somewhat south of that followed by Sitgreaves, his survey covered the same region....The resulting report, as published by government, though of similar nature, is very much more elaborate and extensive than that of Sitgreaves.....

(Footnote) "Whipple, Report of Explorations for a Railway Route, near the Thirty-fifth parallel of North Latitude, from the Mississippi River to the Pacific Ocean, by Lieutenant A. W. Whipple, Corps of Topographical Engineers, assisted by Lieutenant J. C. Ives, etc., 1853-54."

INSCRIPTION #2:

"Se pasaron a 23 de Marzo de 1632 anos a la benganza de muerte del Padre Letrado. Lujan."

TRANSLATION: "They passed on the 23 of March of 1632 years to the avenging of the death of Father Letrado. Lujan."

BRIEF DATA:

Father **Letrado**, a missionary stationed at the Zuni pueblo of Hawikuh (now in ruins) was murdered by the Zunis on February 22, 1632. Word of his murder reaching Santa Fe, a punitive expedition was sent against the Zunis. One of the soldiers with that expedition, Lujan, carved the inscription upon El Morro on their way to Hawikuh. As to the punishment administered the Zunis, no exact records have yet been found, though, as Hodge indicates, it is probable that they were punished many times over, but the data not included in official records.

REFERENCE:

(Hodge): "...Fray Francisco Letrado, the first missionary martyr at the hands of the Zuni....

On Quinquagesima Sunday, February 22, 1632 (a hundred years to a day before Washington was born), the Indians appeared to delay in attending Mass. Fray Francisco, impatient, and probably of a fiery and zealous nature, went out to urge them. He met some idolators, and began to chide them. He saw at once that they were bent on killing him, so he knelt down, holding in his hands a small crucifix, and continued the remonstrance while in this attitude. The Indians shot him dead with arrows, carried off the corpse and scalped it, parading the scalp afterward at the usual dances.

(Footnote: Vetancurt (a) 52-53; (b), 320-321. See also

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

Bandelier (c), 96-99; (e) II, 330-335; Wagner (a) 120, 122. According to Frias, quoted by Wagner, the Father's head was hacked to pieces with bludgeons, and in the revised Memorial Benavides says that they crushed his head with war clubs (macanas), and inflicted on him great cruelties.)

"After the murder of the friars, the Zuni abandoned their houses and fled to the "Penol de Caquima," that is, Towayalane, or Corn mountain, at the base of which the pueblo of K'iakima ("Caquima") stood."

(Footnote: This great mesa, rising a thousand feet above the valley, was the tribal refuge when Coronado invaded the Zuni country in 1540, as it was also during the Pueblo revolt of 1680 and also in 1699 and 1705. Consult Bandelier (3), I, 134-135.)

"Almost immediate steps were taken to avenge Letrado's death. Governor Francisco de la Mora Ceballos dispatched to Zuni a small party of soldiers under Maestro de Campo Tomas de Albizu, together with a few priests. Stopping at El Morro, a member of the party carved the....inscription.Therefore within a month's time news of the murder had found its way to Santa Fe and the avenging party was within a day's journey of Towayalane. The missionaries were admitted to the mesa-top and the Indians promised to be good thenceforth. There is reason to believe, however, from events that transpired later in the century, that, were the whole story known, the Indians did not escape with this simple gesture...."

INSCRIPTION #3:

"Lt. J. H. Simpson USA & R. H. Kern Artist, visited and copied these inscriptions, September 17th 18th 1849."

BRIEF DATA:

This records the visit made by Lieut. Simpson, a Lieutenant with the Corps of Topographical Engineers, and a member of Colonel Washington's expedition into the Navajo Country in 1849. Extracts from Simpson's Journal are given elsewhere with this report. Simpson, accompanied by the artist R. H. Kern, Simpson's orderly W. Bird, and the trader Mr. Lewis, diverged from the main body of troops as they passed between El Morro and the Zuni Mountains, (returning to Santa Fe) and came to see the rock. (Mr. Lewis had met the troops that morning, and had volunteered to conduct Lieut. Simpson to this rock, about which nothing was known by Americans (officially) before this time.) The men reached the rock about noon, Sept. 17th, 1849. Kern and Simpson made drawings of all the prominent inscriptions they could find. Also sketches of the rock. They climbed the rock and inspected one of the ruins on the top. The party camped off the N.E. point of the rock for the night, arising at dawn the following morning, and resuming their copying of inscriptions at daylight. By eight o'clock a. m. they had completed their drawings, and were on their way to reach the main body

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

of troops, which they did by dark that night.

Simpson's Journal was made a Senate Document, illustrated by lithographs of Kern's drawings. It is the first American record of the existence of this rock and of the inscriptions. The drawings, I believe, are now in the Smithsonian Institution in Washington. Simpson's Journal is a classic.

The drawings of the inscriptions are not entirely accurate. In many cases various drawings of inscriptions have been incorporated to resemble one single inscription. The translations of the inscriptions, given in the report are, in the main, inaccurate. The drawing of Onate's inscription gives the date as 1606, as do many histories, which is not correct. The date, as indicated on the page of this present report, is properly 1605.

REFERENCES:

Extracts of Simpson's Report which are on file in the Coolidge Office.

INSCRIPTION #4:

"Soy de mano de Felipe de Arellano a 16 de Setiembre, Soldado... (rubric)."

TRANSLATION: "I am of the hand (that is, "this was written by the hand") of Felipe de Arellano on 16 of September, Soldier."

BRIEF DATA:

On this I have, as yet, no official records. Apparently, however, this is the Arellano who, with two companions, was murdered at Zuni in the year 1700.

REFERENCES:

Have not yet been able to get to archives at Santa Fe; I have no accurate references on this inscription -- that is, ones I would wish to quote.

INSCRIPTION #5:

"Soy Capitan-General de las provincias del Nuevo Mexico por el Rey nuestro Senor. Paso por aqui de buelta de los pueblos de Zuni a los 29 de Julio ano de 1620 (?) y los puse en pas a su pedimiento pidiendole su favor como basallos de su magistad y de nuevo dieron la obediencia todo lo que hizo con el agasax e selo y prudencia como tan christianisimo (obliteration) tan particular y gallardo soldado de inacabable y loada mema(ria) (apparent obliteration).

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

TRANSLATION:

I am Captain-General of the provinces of the New Mexico for the King our Lord. Passed by here on return from the pueblos (towns) of Zuni on the 29th of July of the year 1620 (?) and he put them in peace, upon their petition, asking him his favor as vassals of his Majesty, and anew they gave the (ir) obedience all of which he did with clemency and zeal and prudence as a most Christian-like (obliteration) most extraordinary and gallant soldier of unending and praised memory. (Apparent obliteration).

BRIEF DATA:

Considerable difference of opinion exists among the various authorities relative to this inscription. It bears no signature. A scar beneath the inscription indicates there may have been a signature, at one time, which later was eradicated. Hodge holds that the date is 1692; others, including Bloom and Hammond claim it is 1620. I think Hodge is in error. Apparently the figure is "0", followed by the letter "y" which is the Spanish word "and". This being the case, the inscription is probably that of the Governor Don Juan de Eulate.

The inscription is especially interesting in that running through the entire thing are long scratches. Apparently some soldier who served beneath the general, or someone who knew him well, came along, read the "modest" record, said "Oh, yeah?" and, with his dagger, scratched through the entire thing. One particular group of words, however, was deeply eradicated, and there is evidence that there may have been a signature, which also was completely eradicated. The missing word or words in the body of the inscription have never been known. However, I believe there were three words, of which I have found all but one -- a word of three or four letters. A report is being prepared on this at the present time.

This inscription is the longest one yet found on the rock. It is carved on a slab of rock, still a part of the cliff, that is cracked to a height of, apparently, over a hundred feet. A concrete slab was poured at the foot of the slab some years ago, to brace it. It will fall some day.

REFERENCES:

Hodge (History of Hawikuh. 1937) gives the following relative to the "Eulate" inscription. In this record he is assuming that the inscription is not that of Eulate, but of the Governor Silva Nieto, whose inscription bearing his name appears upon the rock in another place. Hodge is probably in error:

"....It is not known precisely when Perea and Governor Silva Nieto reached Hawikuh, but it was about the 25th. or 26th. of July, as on the 29th. of that month the Governor seems to have carved his inscription (anonymously) at El Morro on his return journey to Santa Fe...."

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

(Footnote:) "See Hoopes and Broomall; Lummis, 178; Bandelier (e), 320-331; Barth, Bloom (d. 52) and Barth believe that the date of this inscription is 1620, not 1629, and that it therefore was made by or for Governor Eulate. But the "0" of the year, aside from its fusion with the "y" following, giving it somewhat the appearance of "9", seems to have been altered, as it is cut more deeply than the other figures of the date. Moreover, there are other reasons for assuming that the inscription was made in 1629 at the instance of Silva Nieto, as follows: (1) there was only a mere handful of missionaries in New Mexico in Eulate's time, hence it would hardly have been possible to extend the missions in 1620; (2) there is no evidence of any attempt to convert the Zuni villagers prior to 1629; indeed in 1620 the pueblos of Zuni were officially reported to be gentile "to whom no spiritual aid in doctrine is being given on the part of His Majesty, nor any temporal aid in order to defend them from their enemies" (Bloom, a, 365); (3) the date of the inscription of July 29 covers the period of Silva Nieto's visit with Perea's missionaries to Zuni; (4) both Perea and Benavides wrote of troubles at Cibola (Hawikuh) immediately after the establishment of the mission there, such as would have caused Silva Nieto to return before his journey to Santa Fe was completed; (5) rather than supporting missionary efforts, Governor Eulate encouraged the Indians in their idolatry (see note 211). Incidentally it may be said that Eulate and Perea were having their troubles at Santa Fe during this period (Bloom (a), 357 ff.; (c) 288 ff.; Scholes (e) passim). Yet the whole matter remains more or less a mystery. If it be true that the anonymous inscription was made in 1629 and therefore is ascribable to Silva Nieto, it is strange that no reference is made therein to the establishment of the Faith on that occasion, as in the case of the hope expressed by Silva Nieto in the inscription made while on the way to Zuni in August. Altogether the text of the inscription seems to favor Eulate, while the historical facts strongly suggest Silva Nieto as the author. The fact that the Zuni principal was given the baptismal name Agustin does not help us, as the day of San Agustin is August 28 -- doubtless some time after the actual establishment of the Hawikuh mission. As will be noted, the day of the August inscription appears to be 5, yet it may be 9; either would suit the case."

Bancroft is widely in error. He attributes this inscription to Governor Onate, as follows:

"Among the inscriptions copied by Simpson from El Morro is one to the effect that the governor passed that way on July 29, 1620, returning from a successful tour of pacification to Zuni...." (Bancroft was writing about Governor Onate).

Nothing being positively known relative to the name of the man who carved the inscription, or to whom it refers, we give visitors both versions (Hodge's and that of Bloom, Barth, etc.).

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

INSCRIPTION #6:

"El dia 14 de Julio de 1736 Paso por aqui el General Juan Paez Hurtado, Visitador. (rubric)

"y en su companie el Cabo, Joseph Truxillo (rubric).

TRANSLATION:

"The day 14 of July of 1736 passed by here the General Juan Paez Hurtado, Inspector."

"and in his company the Corporal, Joseph Truxillo."

BRIEF DATA:

This inscription is amusing. While no official records have been found to indicate what happened, it is quite obvious.

The writing is that of two different men. The first inscription (Hurtado) was carved, and a line, or panel, carved completely around it. Later on the second inscription (different "handwriting" altogether) was carved immediately beneath the first, and a line, or panel, carved about three sides of the second inscription, in the attempt to join it to the first, and make the whole thing one inscription. Rubrics of both men appears after their names.

This is undoubtedly what occurred: Hurtado came here, probably with a small body of men, and they made their camp around by the water pool for the night. During their stay, Hurtado wandered around the rock, found a smooth place, and carved the first inscription with his dagger. Some time later -- undoubtedly when he was sure the General wasn't watching -- the Corporal, Joseph Truxillo, came around the north side of the rock, read what the general had written, and (probably with many glances over his shoulder) carved the second inscription immediately below that of the General's. Then he carefully scratched a line around his own inscription in the attempt to make one inscription of the two. Apparently Truxillo wanted the world -- or all who read the inscription later on -- to know that HE was along too.

INSCRIPTION #7:

"Juan Garsys de la Rivas, Alcalde-Ordinario de primar boto de la villa de Santa Fe Ano de 1716 a los 26 de Augusto y Alguacil-Mayor del Santo Oficio."

TRANSLATION:

"Juan Garcia de la Rivas, Alcalde-Ordinary (Ordinary Alcalde) by first choice (?) (ballot?) of the town of Santa Fe Year of 1716 on the 26 of August And Alguacil-Mayor ("Chief Sheriff") of the Holy Office."

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

BRIEF DATA:

Juan Garcia de la Rivas was a member of the Martinez party on their way northwest to "conquer the Hopi". De la Rivas signed the reports of Governor Martinez as a member of the Cavildo, together with the other members of that body. See Inscription of Governor Martinez (No. 11, north side).

REFERENCE:

"New Mexico Historical Review" Vol. VI, No. 2, April, 1931, (p. 158 et. seq.) "A Campaign Against the Moqui Pueblos", being a translation of Martinez' diary by Colonel R. E. Twitchell, published and annotated by Lansing B. Bloom after Twitchell's death. For further data, see "Inscription - North Side, No. 11 .

INSCRIPTION #8:

"Aqui (llego el Senor y) Gobernador
Don Francisco Manuel de Silva Nieto
Que lo imposible tiene ya sujeto
Su brazo indubitable y su balor
Con los carros del Rei Nuestro Senor.
Cosa que solo el puso en este efecto
De Agosto (5? 9? "y Mil"?) Seiscientos Beinte y Nueve
Que se bien a Zuni ("Cuni") pase y la Fe lleve."

TRANSLATION:

"Here arrived the Governor Don Francisco Manuel de Silva Nieto, Whose indubitable arm and valor have (has) now overcome the impossible with the wagons of the King our Lord. A thing that he alone put into (this) effect of (5? or 9? or One thousand?) six hundred twenty and nine. That he (or "one") may well to Zuni pass and the Faith carry."

BRIEF DATA:

This is the only inscription upon the Rock in the form of a poem. It was presumably carved upon the rock during an expedition to or from the Zuni country. The last line bears evidence of having been tampered with, so the meaning is not perfectly clear. The year, as given in the inscription appears to be merely six hundred and twenty-nine." Probably a way of indicating "1629" much as we speak of "the 49ers", meaning "1849". Nieto was Governor from 1629-1632 (Bloom). On this expedition friars accompanied the expedition, and the first mission was established at Hawikuh.

REFERENCES:

See "Inscription-North Side, No. 5 "Eulate".

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

Also (Hodge): "The Verdadera Relacion of 1632 states that the governor, Francisco Manuel de Silva Nieto, having returned to Santa Fe with an escort of soldiers from the Apache, among whom two friars had been stationed, the journey to Acoma, Zuni, and Moqui (Hopi) was arranged. With ten carts and four hundred cavalry horses, thirty well-armed soldiers, and with everything important for the journey, the party started from the capital on June 23, 1629, accompanied by the governor and including the Father custodian (Perea) and his companion, the Father solicitor Fray Tomas Manso, five priests and two lay brothers. Leaving Fray Juan Ramirez at Acoma, the others continued to the Zuni settlements, passing on the way the great lava-flow now skirted by the Santa Fe Railway west of Laguna pueblo.....

"But the efforts of Fray Roque de Figueredo and his missionary companions do not seem to have been so successful as Perea's report of the Zuni conversion would indicate, for only a few days after the date of the first inscription, the modest Governor was again at El Morro, recording the following on the famous rock: "(Here Hodge refers to this inscription.)

INSCRIPTION #9:

"Dia 28 de Septiembre de 1737 anos llego aqui El Illustrisimo Senor Doctor Don Martin de Elizacochea, Obispo de Durango y el dia 29 paso a Zuni."

TRANSLATION:

"Day of 28 of September of 1737 years arrived here the most illustrious Senor Doctor Don Martin de Elizacochea, Bishop of Durango, and the day 29 passed to Zuni."

BRIEF DATA:

This records the visit of the Bishop of Durango. It will be observed that the writing is in the same hand as that of de Arrasain (Inscription North Side, No. 10) and that the dates are the same in both instances. de Arrasain was Secretary to the Bishop, and I rather imagine that the actual work of carving the stone would have been left to the secretary.

INSCRIPTION #10:

"El dia 29 de Septiembre de 1737 anos llego aqui el Bachiller Don Juan Ignacio de Arrasain."

TRANSLATION:

The day 28 of September of 1737 years, arrived here the Bachelor Don Juan Ignacio de Arrasain."

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

BRIEF DATA:

de Arrasain was secretary to the Bishop of Durango, whose inscription appears beside that of de Arrasain. (See No. 9, north side). The title "Bachelor" seems somewhat odd. Certainly, with a name like "Don Juan" it might sound appropriate, but, as a matter of fact, de Arrasain was a lawyer, and the "Bachelor" stands for "Bachelor of Law". (Spoils a good story).

As noted in Inscription - North Side No. 9 - the date of de Arrasain's inscription and the writing of both inscriptions are the same. de Arrasain undoubtedly did the carving of both inscriptions.

INSCRIPTION #11:

"Año de 1716 a los 26 de Agosto Paso por aqui Don Feliz Martinez Governado y Capitan-General de este raino a la reduzion y conquista de Moqui y (conversion?) por orden (del) Reverendo Padre Fray Antonio Camargo Custodio y Juez Eclesiastico." (rubric)

TRANSLATION:

"Year of 1716 on the 26 of August passed by here Don Feliz Martinez Governor and Captain General of this realm to the reduction and conquest of Moqui and (conversion? or uniting?) by order of the Reverend Father Friar Antonio Camargo, Custodian and ecclesiastical judge."

BRIEF DATA:

This marks the passing by the Rock of the expedition of Governor Martinez in their campaign against the Hopi (Moqui). The expedition was more or less of a farce. Apparently the Spaniards arrived at the Hopi mesas, and did not care to attempt ascending the Mesas. They appear to have camped and to have taken turns more or less just making faces at the Hopis, who reciprocated. While Martinez' diary records a couple of "battles" they sound most unconvincing. Finally the Spaniards destroyed the Hopi's cornfields and went home. Water was scarce where they were camped, and they could not remain longer, so Martinez claims. This campaign against the Hopi was later brought as one of a group of charges against Martinez.

REFERENCES:

"New Mexico Historical Review" Vol. VI, No. 2, April, 1931, (p. 158 et. seq.) "A Campaign Against the Moqui Pueblos," being a translation of Martinez' diary by Col. R. E. Twitchell, published and annotated by Lansing B. Bloom after Twitchell's death.

(Bancroft) "During Martinez' rule of two years, two campaigns are recorded. In August 1716 the governor marched in person against the

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

Moquis with 68 soldiers, accompanied by the custodio, Padre Antonio Camargo, the cabildo of Santa Fe, and a force of vecinos from Albuquerque and La Canada.....Two fights occurred in September, the Indians being defeated, if we may credit the diary, with many killed and wounded; but the army, after destroying corn-fields, retreated to Santa Fe, and pretended victories may be regarded as very doubtful. (Footnote:) The return to Sta. Fe was on October 8th. Acc. to Arch. N. Mex., 206-7, the governor accomplished nothing, and the truth which he concealed in his diary came out in his later residencia...."

S O U T H S I D E

INSCRIPTION #1:

"Aqui estubo el General Don Diego de Vargas, quien conquisto a nuestra Santa Fe y a la Real Corona todo el Nuebo Mexico a su costa, Ano de 1692."

TRANSLATION:

"Here was the General Don Diego de Vargas, who conquered to our Holy Faith and to the Royal Crown all of the New Mexico at his (own) expense, Year of 1692."

BRIEF DATA:

This hardly needs any description. A brief one is here given: The Pueblo Indians, after plotting for many years, finally staged the Great Rebellion in the year 1680. They killed many Spaniards -- several hundred -- and drove the remainder out of what is now New Mexico, back down along the Rio Grande into Old Mexico. Santa Fe was partially destroyed, and many of the archives. The Spaniards remained in Mexico until the year 1692. Several ventures were made between the revolt and 1692, but were not successful. Finally, in 1692, de Vargas entered the "New Mexico" and received the submission of the pueblos. This date marks the resumption of Spanish Rule. de Vargas had his troubles in the year following, but 1692 is referred to as the date of the re-conquest of the Pueblos.

REFERENCES:

Hodge, Bancroft, Twitchell, Bloom, etc., etc.

INSCRIPTION #2:

"Lt. J. H. Simpson, USA & R. H. Kern Artist, Septem. 17" & 18" 1849"

Also, to the left of this inscription: "W. Bird 1849."

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

BRIEF DATA:

Simpson and Kern left their inscriptions on both sides of the rock. I believe no photograph of this particular inscription is in the official (Washington) files. However, this one also has the name of W. Bird, Simpson's orderly. No other comment is needed here. See Simpson's journal, elsewhere in this report, and Inscription--North side--No. 3.

INSCRIPTION #3:

I do not know that the Department has a photograph of this in their official files. It is not an inscription, nor is it a petroglyph. It is a drawing of a buffalo, and mention of it is only made here because Simpson mentions it in his Journal.

INSCRIPTION #4:

"Paso por aqui el Adelantado Don Juan de Onate del descubrimiento de la Mar del Sur a 16 de Abril de 1605."

TRANSLATION:

"Passed by here the Governor Don Juan de Onate, from the discovery of the Sea of the South on 16 of April of 1605."

BRIEF DATA:

This is THE EARLIEST INSCRIPTION TO APPEAR UPON THE ROCK. It is that of the FIRST OF THE SPANISH GOVERNORS, and of the FIRST COLONIZER of the country north of Mexico (that is, "the New Mexico"). Onate is referring to the Gulf of California when he writes of "the discovery of the Sea of the South." Of course, he wasn't the first to discover it, but he did make a trip to it, and was on his return to San Gabriel (which he reached April 25, 1605) when he and his party stopped here. They also had stopped by here on other previous occasions, but no inscription to that effect has been found, to date.

It should here be mentioned that this date, 1605, has long been taken for "1606". Kern and Simpson made that mistake, and many others later on. In fact, the official printed Park Service placards erected before each main inscription when I first came here a year ago, gave the date as "1606". In the event the records in the Department have not been corrected to date, they should be so corrected now.

The inscription has been carved over an old petroglyph.

REFERENCES:

Any good history of the Southwest. Especially Hodge, Bloom, Twitchell, etc. I give a few brief extracts:

(Hodge): "ONATE'S ENTRADA AND COLONIZATION, 1598."

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

In the meantime, various applications were made for a grant to conquer and colonize New Mexico, and after various difficulties the contract was awarded to the wealthy and influential Juan de Onate, son of Don Cristobal, who, like Juan, had greatly distinguished himself in the service of the King. The march northward from the City of Mexico began early in 1596, but was delayed at various places for official reasons, so that it was not until February, 1598, that the expedition was finally on its way to New Mexico from the Rio Conchos in Chihuahua. The colony consisted of four hundred men, of whom one hundred and thirty had their families, while the equipment included eighty-three wagons and carts, and more than 7,000 head of stock. Reaching the Rio Grande, the expedition proceeded up that stream, through El Paso, and into the settled country of New Mexico. At the pueblo of Santo Domingo, Onate received the submission of the Pueblo Indian provinces on July 7, and on the 11th reached San Juan which became headquarters of the Spaniards until the summer of 1601 when they were transferred to San Gabriel at the junction of the Rio Chama and the Rio Grande. On September 9, 1598, an assembly of Indian representatives of all the country thus far explored was held, and the various pueblos and tribes were assigned to the Franciscan friars for Christianization.....

"Various journeys were made in different directions, including one by Onate himself, commenced on October 6, to the salines and the pueblos east of the Rio Grande, thence westward to Acoma where he rested one day, then, "on the next we set out for the province of Zuni, going to the head of the river which is called De la Mala Nueva, next day four leagues, camping for the night in a forest, without water; next day to the Agua de la Pena (this was another name for El Morro), four leagues. It snowed furiously, the horses stampeded, and some were lost for good. Next day four leagues to a spring which flows to the province of Cuni. We saw three ruined pueblos. The following day, which was the feast of All Saints (November 1), three leagues to the first pueblo of the people belonging to the province of Zuni, which consists of six pueblos. The Indians received us with a large quantity of maize, tortillas, and rabbits....etc.etc....."On October 7, 1604, however, the governor again set out with thirty soldiers, for the west, exploring the country as far as the Gulf of California. A member of the party was the comisario Fray Francisco de Escobar, who wrote a Relation of the expedition and in 1605 became custodio of the missions of New Mexico.....Onate continued to the province of Moqui (Hopi)...The party returned by way of the Zuni pueblos, as above noted, and on APRIL 16, 1605, ENCAMPED AT EL MORRO, or Inscription Rock, the "Agua de la Pena," WHERE ONATE LEFT HIS INSCRIPTION, the first to be made by a white man on that famous monument. San Gabriel, to which the capital had been removed from San Juan in 1601, was reached on the 25th..."

(Bancroft) "Onate reached tide-water (Bancroft is writing of Onate's trip at the point where he has encountered the Colorado River) on January 23, 1605, and on the 25th, with the friars and nine men, went down to the mouth. Here he found a fine harbor, formed by an island in the centre, in which he thought 1,000 ships might ride at anchor. That

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

the sea extended indefinitely northwestward behind a range of hills, the Spaniards believed on the authority of the Indians; and this belief had much to do later with the opinion that California was an island.....The rest of the company came down to see the port and then the explorers began their return march by the same route to New Mexico. ...They had to eat their horses, but arrived safe and sound at San Gabriel on the 25th of April (1605).

MISCELLANEOUS:

A good idea of the time, compared to American settling on the Atlantic coast, may be made by such dates as:

JAMESTOWN: The first permanent English settlement in America. Founded May 14, 1607. (Oñate's inscription two years and one month earlier)

LANDING OF THE PILGRIMS AT PLYMOUTH, MASS.: December 21, 1620. (Oñate's inscription carved on El Morro nearly 15 years before the Mayflower reached the coast of America and the pilgrims landed at Plymouth Rock.)

INSCRIPTION #5:

"Por aqui pazo el Alferes Don Joseph de Payba Basconzelos el ano que trujo el Cauildo del Reyno a su costa a 18 de Febrero de 1726 Anos."

TRANSLATION:

"By here passed the Ensign Don Joseph de Payba Basconzelos the year that he brought the Cauildo (cabildo -- "corporation" or "city council") of the realm at his expense on 18 of February of 1726 years."

BRIEF DATA:

I have been unable to trace this man to date. Apparently, however, he was acting as guide to the "Cabildo" on an expedition into this part of the country--very likely to Zuni.

The date of this inscription is often mistaken for "1526". This mistake arises from the fact that for years a scratch in the sandstone just above the figure "7" was pencilled with the remainder of the inscription. This would, of course, if correct, be long in advance of Coronado's trip of 1540. However, close examination will reveal that the scratch is not a part of the inscription. It is broad, shallow, and indistinct at either end, and was undoubtedly made by some plant (such as the hard tip of a yucca leaf) or branch blowing in the wind and rubbing against the rock. I have photographs showing where this has occurred at other places on the cliff, where some branch has vibrated in the wind. Such marks are sometimes over an inch in depth. This

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

scratch is no longer pencilled. The inscription proper has been carved in deeply, with narrow lines, well-defined at either terminus.

INSCRIPTION #6:

"Pasamos por aqui el Sarjento-Mayor y el Capitan Juan de Arechuleta y el Aiudante Diego Martin Barba y el Alferes Agustin de Ynojos ano de 1636."

TRANSLATION:

"We passed by here the Sergeant-Major and the Captain Juan de Arechuleta and the Adjutant Diego Martin Barba and the Ensign Agustin de Ynojos year of 1636."

BRIEF DATA:

The identity of the Sergeant-Major is not definitely proven as yet. Bandelier thought he may have been Francisco Gomez. I have as yet no accurate data on this particular trip, though Arechuleta, Diego Martin Barba and Ynojos are well known in history. Bloom ("New Mexico History and Civics") gives an account of the execution of Arechuleta and Barba, and apparently they were the same men whose names appear in the above inscription. Apparently they were held responsible for allowing the missionaries to get more or less out of hand, until quarrels between Church and State were growing tiresome. They were accordingly executed. It served as a warning to others, and undoubtedly taught Arechuleta and Barba a lesson from which, unfortunately, they did not profit.

REFERENCES:

See Bloom's "History of New Mexico and Civics"; Bancroft, etc. (Hodge) "Notwithstanding the promises alleged to have been given by the Zuni, they seem to have remained on their mesa stronghold until 1635, when they commenced to descend and to resettle in the valley pueblos. In the following year, as we learn from another inscription on El Morro, a visit was made by the Sarjento-Mayor (whom Bandelier believed probably to have been Francisco Gomez), Captain Juan de Archuleta, Lieutenant Diego Martin Barba (who was secretary to Governor Francisco Martinez Baeza in the year named) and Ensign Agustin de Ynojos. Up to this time the Zuni missions had not been re-established, and indeed Bandelier concluded that there were no missionaries from the time of Letrado's death (February 22, 1632) until after 1642."

INSCRIPTION #7:

"A 9 (?) (or 25?) dei mes de Junyo deste ano de 1709 paso por aquy para Suni Ramon Garzia Juldo." (rubric)

MAJOR INSCRIPTIONS ON EL MORRO (CONT.)

TRANSLATION:

"On the 9th (?) (or it may be 25th) of the month of June of this year of 1709 passed by here on the way to Zuni, Ramon Garzia Juldo."

BRIEF DATA:

This inscription is included since a photograph of it is in the Department's files. So far I have been unable to trace Ramon Garzia Juldo. Beneath his name appears his rubric. In the lower left-hand corner of the square carved about the inscription appears what resembles a cross above an altar. This design has recently been identified as the Franciscan Coat-of-Arms. Undoubtedly, therefore, Juldo was a Franciscan Missionary on his way to Zuni, and it may be that in time some mention of him in the archives may be found.

*****SWM*****

SECOND GEOLOGICAL REPORT
CANYON DE CHELLY
NATIONAL MONUMENT

By Charles N. Gould.

On June 14, 1937, accompanied by Chief, Naturalist Division, Trager and Associate Geologist Vandiver, I made an inspection of Canyon de Chelly National Monument, Arizona.

To my report No. 57 made as the result of an inspection on July 12, 1936, reference is made for data on topography and geology of the monument. A more formal report on this monument was made by Associate Geologist Vandiver who inspected the area in June, 1936. (See pg. 55, the Supplement, Southwestern Monuments Monthly Report, July, 1937.) A paper by Edwin D. McKee, Park Naturalist at Grand Canyon National Park, entitled "An Investigation of the Light-colored, Cross-bedded Sandstones of Canyon de Chelly, Arizona" appeared in American Journal of Science, September, 1934. This paper contains a bibliography of ten articles on the subject, chiefly by Gregory, Darton, Baker, and Reeside. A topographic map of the canyon has been published and may be obtained from the San Francisco office. A photostat of this map is attached to this report. (Original available at headquarters, Southwestern Monuments)

It is now believed by most geologists that the cliff-making sandstone in the canyon, which is known as the de Chelly sandstone, is practically equivalent in age to the Coconino sandstone of the Grand Canyon section.

At the time of our visit June 14, 1937, Custodian Faris conducted

SECOND GEOLOGICAL REPORT ON CANYON DE CHELLY NATIONAL MONUMENT (CONT.)

Messrs. Trager, Vandiver and me several miles up the bed of the Canyon de Chelly and Canyon del Muerto. This is a rather venturesome trip, and should be undertaken only under guidance, and in a car equipped with extra large tires. There is no road, and the trip must be made over the treacherous quicksands of the canyon. The canyon is subject to sudden and rapid rises of water after heavy rains in the mountains near its source. At the time of my first inspection a year ago, I was not able to get into the canyon, but had to be content with a view from the Rim.

Under the guidance of Mr. Faris, we were able to see many objects of interest from the valley floor. Among others were some of the very unique cliff dwellings, including White House ruin in Canyon de Chelly which, according to our best information, was occupied from 1060 to 1275 A.D. We also saw Antelope House, in Canyon del Muerto which was named from petroglyphs on the canyon wall. There are said to be 146 major ruins in the canyon besides which there are numerous petroglyphs on the canyon walls. We also observed the peculiar cross bedding, of which studies had been made by Mr. McKee. The unusual forms of weathering which have formed arches and monuments were also studied.

Some very interesting observations were made on the Navajo Indians who have farms and orchards in the canyon. Their water supply is obtained from holes dug in the sands of the canyon floor.

We also made an investigation of the well recently drilled for a water supply near headquarters. Some question had arisen as to the source of the water in this well. The point at issue seems to be whether the water is obtained from shallow sands in the bed of Canyon de Chelly, or whether the source is in the bedrock beneath these sands.

After studying the conditions, including the log of the well, its location and the depth to rock, our opinion is that the water in this well is obtained either from the Shinarump Conglomerate or from the sub-surface flow of the wash. A report covering this matter, prepared by Associate Geologist Vandiver, follows:

"From the log of the de Chelly well, it is difficult to say as to whether it is producing from the valley fill alluvium or a coarse sandstone lense in the Chinle formation. It is probable that the red sandstone encountered at 59 feet is the top of the Shinarump conglomerate. It appears quite likely that the Chinle has been removed from the valley floor and that the Shinarump is the surface upon which the wash alluvium was deposited. In any case I think we can safely say that the water in the well is percolating water or water from the sub-surface flow of the wash. While I am not familiar with the Arizona law, I believe this will answer your question."

SECOND GEOLOGICAL REPORT ON CANYON DE CHELLY NATIONAL MONUMENT (CONT.)

DATA ON THE WELL

Began Well: January 1 , 1936.
Finished Well: January 16 , 1936.
Diameter of Well: 8 inches.
Depth of Well: 100 feet.
Surface of Ground to Water: 3 feet.
Quantity of Water on Test Run: 69,120 gallons per day.
Kind of Casing: Screw Size: 6-5/8-inch, O.D.
Screen, kind: McAvoy Button Length: 8 feet.
Driller. Burt S. Cravath
Remarks. Casing to bottom of hole and strainer between 53' and 61'.

LOG

<u>FROM</u>	<u>DEPTH</u>	<u>TO</u>	<u>FORMATION</u>	<u>REMARKS</u>
Surface		8 feet	Sand	
8 feet		46 feet	Sand and silt	Water
46 feet		50 feet	Sand and gravel	Water Hori-
50 feet		59 feet	Sand	zon.
59 feet		100 feet	Red Sandstone	

Note: Water level in the well is three feet below the surface and drops to twenty feet below the surface when water is drawn at the rate of 25 g. p. m. Pumping equipment consists of three h. p. engine driving a deep well pump furnishing 10 to 15 g. p. m. was installed by WPA in 1936. Water is pumped 1000 feet through one and one half inch line to 5000 gallon concrete reservoir south of Custodian's residence.

Data from Navajo Indian Service and Master Plan.

*****SWM*****

TUMACACORI MUSEUM

Tumacacori National Monument Museum is fashioned after the style of the Sonora Missions. As in the construction of the early churches, native materials have been employed in the characteristic manner. Walls are of sun-dried adobe brick, cornices are of burned brick and the exterior walls finished with stucco.

Many of the architectural features and details of the Sonora Missions have been incorporated in the museum building. The main entrance motif is patterned after the entrance to Cocospera. The carved entrance doors duplicate the carved doors of San Ignacio, the most beautiful doors of the entire mission chain. The other doors throughout the

museum are similar to the panelled doors of Caborca. The wood-grilled window on the east facade is typical of the grilled windows found in many of the missions.

The beamed ceiling of the Lobby, with carved corbels, is similar to the nave ceiling of Oquitoa. The wood panelled confessional at Oquitoa furnishes the detail for the lobby counter.

The piers and arches of the museum arcades follow the design of the arcade still standing at Caborca.

A groined vault ceiling has been introduced in the View Room. This type of ceiling was often used in the Sonora Missions and good examples may be found at San Xavier, Tubutama, and in the baptistry of San Ignacio.

Painted wainscots throughout the museum and the ceiling decoration in the View Room express a similar handling by native artisans of the painted decorations in the missions.

*****SWM*****

ARCHEOLOGICAL REPORT ON THE STABILIZATION OF TYUONYI IN BANDELIER NATIONAL MONUMENT

By J. W. Hendron

(Note: The original report complete with illustrations is on file and available for reference at the Southwestern Monuments Headquarters Library, Coolidge, Arizona.)

One of the largest jobs in the ruins stabilization program at Bandelier National Monument was Tyuonyi, the big community apartment house. This structure was excavated in part by Dr. Edgar L. Hewett of the School of American Archaeology during the summer seasons of 1908, 1910, 1911, and 1912. (See Organic Acts and Administrative Reports of the School of American Archaeology, Archaeological Institute of America, Santa Fe, New Mexico, U. S. A., ns., Paper No. 6, 1907-1917, p. 34, 84, 99, 119-120.)

It might be well to first describe the structure as to its architectural type, and its relation to the remaining structures in the canyon. Tyuonyi is the largest of all the ruined dwellings in Frijoles Canyon, being almost 250 feet in diameter from northeast to southwest. From the top of the north cliff it appears to be oval or egg-shaped in form. Two hundred forty-two of a possible 350 rooms have been excavated, most of the unexcavated rooms being around the outside of the structure

on the northeast, where the accumulated debris may be seen. This house was terraced, the floor levels of the rooms being different in many cases, and I have noticed that the levels of some of the rooms were elevated almost four feet above the surface of the ground around the east and southeast sides. It is not known how many stories were incorporated into the structure, but after having spent several months stabilizing the walls of the 242 excavated rooms, I do not think that the structure as a whole was over one story high; however, it is possible that second story rooms might have been built in convenient places where the walls of the higher-leveled first story rooms might have acted as a brace for the occasional second story rooms. It is also possible that there may have been an occasional third story room, perhaps built of slabs of wood, or they may have been in the form of small porches which would be very light in weight as compared to the rest of the rooms. It is a true Pueblo IV and V construction, and a date of 1460 plus or minus 15 years has been worked out from a piece of charcoal found in one of the rooms by Mr. W. S. Stallings, dendro-chronologist from the Laboratory of Anthropology in Santa Fe. The house was occupied contemporaneously with the terraced community apartment houses noted by Coronado during his march up the Rio Grande Valley into the province of Tiguex, near Bernalillo, New Mexico, in 1540. The pueblos are built almost entirely of mud, the technique of construction being known as puddling and, according to the Spanish reports, some of the walls were four feet thick. This expedition also pointed out that Taos or Yuraba, as it was then called, was also a multi-storied apartment house. If we use these two examples, and compare their architectural type or method of construction to that of Tyuonyi, we find that the house in question had walls no more than nine or ten inches thick, which were laid up with blocks of volcanic ash.

Depending upon the size of the building stones used in each particular room, if there were several stories they would have undoubtedly been placed in the northeast portion where the walls were much more stable than on the south and southwest sides. I have noticed that the building stones were more evenly worked for the building of the rooms in the north section, some of them being three feet in length and squared off with crude rough implements. The south and southwest portions appeared to have been haphazardly laid up, perhaps because of the fact that second story rooms would not have been needed for protective purposes as much as on the other side of the structure since the Rito de los Frijoles once flowed within fifteen or twenty feet of this section of rooms making a drop from the level of the rooms to the bed of the creek of between six and nine feet. Rooms seemed to be smaller on the south and southwest sides and the building was not as thick through, that is, there were fewer rows of rooms. This inferior type of construction might suggest that the rooms near the creek were not as important as the rooms at the other portions, and may have been constructed to complete the circle which Tyuonyi makes. Since the excavation by the School of American Archaeology, the mortar from between the

building stones has been washing away at such a rapid rate that entire walls almost five feet high were left standing without a bit of mortar between the stones, each additional course of building stone being balanced upon the ones laid under it. I have made a very careful examination of the walls, and have noticed potsherds embedded in the joints of some of the standing walls, which still retained some of the mortar, lending some substantiation to the theory that the south and southwest portions may have been constructed at some later date than the north and northeast portions. The varieties of pottery in the north and northeast sections, where construction was of a much better grade, were the black-on-whites including Santa Fe, Biscuit A, Biscuit B, and Glazes A, B, and C, while in the southeast portion Glaze E, the late Biscuit types and a few pieces of Tsankawi Black-on-Cream were found. They were also noticed in the southwest portion of the pueblo. Of course, such small percentages of broken pieces of pottery cannot be used as authoritative data to suggest that the north and northeast portions of Tyuonyi were the earliest, but it is food for thought and might be worked upon to some profitable end.

Another interesting fact discovered from the washing away of the mortar is that gaps were noticed in the walls of some of the rooms along the outside of the structure, especially in the south and southwest portions again, where rooms evidently were built or added to the main structure. This is only a suggestion, but it would be very interesting to follow up such a clue by making a detailed ground-plan drawing showing the various gaps. It might be that Tyuonyi was built in sections and not by any preconceived or definite plan.

Through the east side of the structure and just a little south was built a narrow hallway seven feet wide and almost 60 feet long, which was the entrance to the plaza. The outside was protected by a half-circle wall almost five feet thick, its ends being joined to the walls of the outside rooms. The fact that the hallway serves as the only entrance to the interior suggests that entrance to the dwellings was not gained from the outside, but that the inhabitants would be obliged to walk through the passage way to the interior and then ascend to their various dwellings. It is thought that ladders were used, although there is no definite proof, and that the villagers entered the rooms through small hatchways in the roofs. Whether or not doorways existed in the front walls of the low terraced rooms is not known, nor is it known if they were present in the higher-level rooms, but the use of the ladder is thought to have been more probable. Ladders could have been pulled up on the roofs at nightfall, and the occupants would have been quite safe in this location.

I have mentioned previously that Tyuonyi was a very late type of architectural development among Pueblo Indians, and it seems that it was also the latest type to be occupied in Frijoles Canyon. Observation of the pottery from both the cliff ruins and the valley ruins

indicates that the houses on the floor of the canyon were perhaps the last to be occupied. The pottery from Tyuonyi is similar to that taken from the fill around the large kiva not more than 200 yards east. Tsankawi Black-on-Cream ware was found in small quantities at both sites, and this suggests an occupation of the two well up into the sixteenth century.

As compared with the Tewa ruins in the detached section of Banderli National Monument, which were occupied somewhat contemporaneously to Tyuonyi, the method of construction of the Community House in Frijoles Canyon is much poorer. This seems to hold true for most of the ruined dwellings of the Keres people.

In stabilizing the walls, it was necessary to scrape away the loose dirt to locate footings, those which were examined being made up of chunks of tuff bedded in mud mortar. Some of these rocks or building stones were relaid upon the old footings to reproduce the original character of the rooms themselves. In the stabilization work, windblown debris was transported for fifteen miles, since the soil on the floor of the canyon cannot be used by itself for mortar with any great degree of success. This was then mixed with some of the original windblown material in the rooms, and ashes and charcoal were put in the mix to duplicate the original mortar as much as possible. Bits of charcoal were seen protruding from the original mortar and this mix may have served a definite purpose. It is referred to by the Coronado expedition with regard to the villages of the Rio Grande Valley in 1540.

One reason for the disintegration of the walls was the fact that great precaution was not taken while the building stones were being laid. Vertical joints were noticed running in almost a straight line from the bottom to the top of some of the walls, and water could very easily have cut its way the entire height of the walls. In the actual stabilization, only the rocks that had fallen from the walls were replaced. They were set in mortar and then small chunks of tuff were driven between the blocks to act as wedges to hold them tight. The walls on the south and southwest sides were in a much poorer state of preservation than those on the north and northeast. It seems that construction at this point was effected in a much more haphazard manner. The north and northeast portions of the ruin retained some walls still from four to five feet high and, in some cases, the new mortar was shoved between the building stones, and the chunks of tuff were then wedged in the joints, this process being known as chinking. Occasional vestiges of doorways were found in the side walls of the rooms indicating that a family may have occupied several rooms as a dwelling. The doorways were not reconstructed. Most of the building stones consisted of chunks of tuff which had been worked or cut to suit the need, but in some cases conglomerates were noticed in some of the walls and, although their sides were smooth and rounded, they were set in the same

ARCHEOLOGICAL REPORT ON THE STABILIZATION OF TYUONYI (CONT.)

manner as the chunks of tuff. Conglomerates were also found serving as footings for the walls for some of the rooms. They were placed edgewise and plastered or mudded together. This method of construction appears to be as stable as the method most commonly used, and it is even used today to some extent in construction by Spanish-American people of the Rio Grande Valley. Occasional slabs of basalt were found in the walls, and also pieces of slate which were undoubtedly imported from some distant sedimentary deposit. The flat smooth slabs lying about may have been used as coverings over fire places and could be put into good use as hot plates.

The walls of Tyuonyi today are strong enough to hold the weight of a large man. It would be hard to estimate their life, but certainly they will stand up as long as they have since excavation. We do have to take into consideration however, the fact that an inch or more of plaster was put on the inside of the walls by the original inhabitants which served a two-fold purpose, the excessive amount of plaster covered the roughness of the building stones, making the walls smooth on the inside, and this excess tended to hold the wedges more firmly in place.

The court or plaza inclosed by the circular formation of the rooms at Tyuonyi is approximately 140 feet in diameter, varying slightly from this figure since the structure itself is not absolutely round. The plaza slopes from northeast to southwest, being approximately five feet lower near the southwest portion of rooms. The elevated part of the plaza contains three small kivas which were possibly the meeting places or council chambers of individual clans or family groups. It seems logical to assume such an organization in the kiva since we today find clan kivas in the pueblo of Taos, and since it is the contention of some of the old men of the present day Keres and Tewa villages that in pre-historic times each clan had its own kiva. The presence of the three might suggest that three clans occupied the big Community House. While work was being carried on at Tyuonyi by the School, one of these kivas was cleaned out and, although it was in a good state of preservation at the time of the stabilization of the Community House, it was necessary to remove the accumulated debris from around the outside so that drainage would be to the outside of the kiva rather than to the inside, and so that the only moisture entering would be the actual rain drops falling to the inside.

The structure varies from 20.8 feet to 23.4 feet in diameter, small enough so that its roofing scheme probably was not elaborate. The wall on the northeast side was approximately six feet high while on the southwest side it was only four feet high before stabilization, this difference in height probably being the result of more erosion on the southwest side than on the northeast. Three feet of additional wall was built on the southwest side as well as on the northeast causing the built up surface around the outside to slope so that drainage would be to the south and not toward the rooms of Tyuonyi, which are only six

feet from the structure on the north. The architectural type here varies somewhat from that of the large kiva which was stabilized during the months of June, July, and August of the same year. It seems that more of a flare was given to the walls of the structure under description, and that the building stones were very unevenly laid; in some cases long chunks of tuff were set in the walls so that the ends might serve as anchors in the fill around the outside. It was noticed that in some cases there appeared to be two walls, but the secondary wall was not laid in mud like the inside wall. Perhaps this difference in construction type came about because of its size, and because of the difference in diameter at the top of the wall and the bottom of the wall. The outside was built up with a fill of stones, earth, and broken pieces of pottery which may give some clue as to the length of its use. The building stones gathered from the fill around the outside were used to build up the wall, and an effort was made to lay them as nearly as possible like the building stones of the original construction. They were laid in mud mortar and were wedged or chinked with small chunks of volcanic ash and as the stones were laid up, a fill of mud, earth, and rocks was laid down behind the wall as a retainer.

The ventilator shaft was built into the southeast side of the structure and the lintel for the opening through the wall is 2.8 feet above the floor of the kiva. Two slabs of tuff laid behind the lintel formed the roof. From the entrance of the vent to the back of the shaft the distance is 4.7 feet. The shaft is 7.7 feet deep from the surface to the floor.

An unfortunate incident occurred while we were preparing to stabilize the upper portion of the shaft. Some of the loose dirt, which at one time might have been mortar, gave way, and the building stones fell to the inside. This meant a complete reconstruction of the ventilator shaft and perhaps it is not so unfortunate, since no estimate of the life of the vent in its original state could be made. The blocks of tuff were set back in cement mortar and should remain intact for many years to come. Due to the weakness of the side walls of the ventilator just inside the opening from the floor of the kiva, the blocks were stabilized with a cement mortar which is almost entirely invisible.

I see only one weakness in this bit of stabilization and that is the fact the additional three feet of main wall for the kiva was laid upon an original wall which is very unstable, and I dare not say how long it will be before it gives way. It may last months and then again it may last for years, but still the next hard rain may cause some of the original stones to give way and part of our efforts will have been in vain.

*****SWM*****

RUMINATIONS

In which we modestly admit, with the aid of some of our friends, that we are a pretty good outfit, with a few words about education of one kind and another.

We are having a fine time with a new experiment around headquarters. As I have told you in former monthly reports, we have moved a side camp of 24 CCC boys from the Chiricahua camp up to our headquarters at Casa Grande National Monument. We plan to get some utility buildings constructed during the next nine months or year for housing headquarters equipment and operations.

These boys are housed in a wooden building 140 feet long and 20 feet wide which contains the store room, kitchen, dining room, sleeping quarters, and recreation room. In addition there are two supplementary buildings, each about 20 feet square, one housing the bathing and toilet facilities and the other being a tool and ware room. We have running water in the camp, hot and cold water in the showers, wash room, and kitchen, a sewage system, electric lights, and three electric refrigerators in the store room and kitchen.

Having the physical needs pretty well cared for, we have made a start on the mental needs. In this we rather surprised ourselves with the amount of knowledge we could, or thought we could give the boys. When the list was finally made up, we found we had 72 signatures for classes out of the 24 possible pupils. We found we were going to try to teach classes in Arithmetic, Drawing, Construction, Surveying, Barbering, Typing, Bookkeeping, English, Archaeology, Cooking, Auto Mechanics, Penmanship, Stenography, Museum Technique, and Photography.

As one might expect, the teachers are the ones who are learning most. Personally, I am trying to introduce some of the boys to mechanical drawing and I am learning fast. The short time we have to work, only one hour per week, the possibility of the boy quitting at the end of the period, the mixture in the class of college entrance ability with third or fourth grade ability, rules out the average course of training. The problem here is different. These boys must be able to carry away from every class something new and useful. There is no hope of holding their interest by the usual classroom methods, and the fact that they can quit any time they want to tends to keep the teacher on his toes, mentally speaking. We have started out with the very practical problem of drawing a map of the Organ Pipe Cactus National Monument. There is no accurate map of that 500 square miles and we will have to compile one from the various sources. The result should be of actual value to our Service and, in obtaining it, the boys are getting a lot of information about meridians, parallels of latitude, guide and correction meridians and parallels, errors of surveys, topography, etc. We are also studying the blue prints of the construction we have under way in the utility area and the boys are becoming quite proficient in reading blue prints. The theory is that they must carry away some new information

RUMINATIONS (CONT.)

from each meeting, but I don't know whether or not the instructor is going to be able to make good on that theory.

*****SWM*****

And now comes Dr. L. F. Brady, paleontologist and geologist, with some of the boys from his excellent school, and pays us a visit. He says he didn't have the three cents needed to send us a letter and had worn out the December number of our report with that franked card which he ought to have used, but, still having a little credit at the service station, he got enough gas to drive over here and tell us not to take him off the mailing list of the monthly report. We promised and everything is lovely again.

*****SWM*****

All of which reminds us to report that we haven't had very much success at cutting down that mailing list. We started out with about 260 names and have wound up with about 245 still on the list and about 25 still in limbo, some of whom will certainly protest being scratched off. In other words, while we have been chopping at the list it has grown a little bit and we are not much better off than when we started. We have not received an answer authorizing us to take a single name off the list. We have not heard from some of them but that this cannot always be taken as negative evidence is shown by a letter in yesterday's mail from Arthur Fife, who makes the wheels go round in the Soil Conservation Service, and who writes a personal letter to say he somehow missed the card in the December number and just caught the warning in the January issue, and for goodness sake not to throw him out.

*****SWM*****

And here is Mrs. Mott, who says: "I have just finished going over the January Report, and I found the final notice threat. So, for fear Mr. Mott neglected to send you the card from the December issue, I am hastening to ask that we be left on the mailing list. There would be a great and aching void if the Report did not come to us each month. Frequently Mr. Mott finds material in it for news stories and certainly I always find something that I didn't know before. The Supplement is, of course, of peculiar interest to me."

Harvey had not forgotten Mrs. Mott, so you and he and the Phoenix Republic will continue to get that copy of the Report.

*****SWM*****

The President of the Colorado Museum of Natural History says: "Surely we want you to continue sending the Report. I read practically every word and am always much interested."

*****SWM*****

RUMINATIONS (CONT.)

Frank Roberts, Jr., of the Bureau of Ethnology, says he can't find any card in his December issue, probably because Marvin's tired hand slipped in the gathering of that particular copy, Frank, and not, as you suggest, because you can't read any more or are losing your grip, and goes on: "Anyway, I'd like to continue to receive the Report as it is such a good way to keep posted on what is going on in the Southwest.*** While I am only an interested outsider in the various family matters that make up a good share of the report, I do get valuable items of general information from its pages."

Chief, we just can't help feeling proud of these boys of ours who build this Report month by month when outstanding men in the archeological and anthropological field like Kidder and Setzler and Judd and Roberts and Fay-Cooper Cole and several others we could name write us the kind things they have written us about their interest in it. Surely we can justify the use of the time and paper we use to keep such folks in touch with our work.

I am going to pass the word to the boys on the job, Chief, that it is strictly up to them to keep this interest alive by the quality of report they build for experts like these in the various fields of science in which we work. Our own particular field of handling visitors is big enough to keep us mighty busy, but we must realize that any expenditure of time and energy we may make in bringing out problems and evidence on problems in the fields of archeology, ethnology, geology, or any phase of natural history will not be wasted; the best minds in America are glancing through our report month by month looking for the latest information we can furnish them.

Not long ago we had a man quit our Service to accept a position with a university. I am quite sincere when I say I hate to have our boys step down from a ranger job to these small university jobs; leaving a chance to give information and education to ten thousand eager and appreciative adult visitors per year in order to try to hammer a few simple fundamentals into the heads of a couple of hundred youngsters.

*****SWM*****

But Ira is calling for copy and Marvin has the mimeograph rolling so I will have to dismount from my hobby which comes up in that last paragraph all saddled and bridled and ready to be ridden. Take it away, boys, and it looks like you have put out another good report.

Cordially,

The Boss