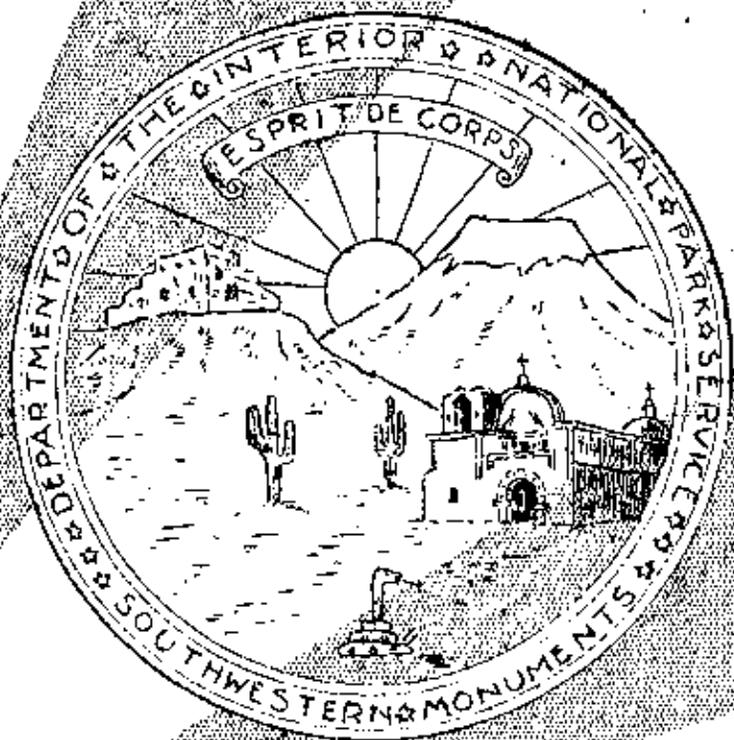


Southwestern Monuments

FOR
RENT



PORT AUGUST '36

DEPT. OF THE INTERIOR.
N.P.S.

SOUTHWESTERN MONUMENTS

AUGUST 1936, REPORT

INDEX

CONDENSED GENERAL REPORT

TRAVEL -----	73	Other Agencies -----	75
General -----	74	Flora, Fauna, etc. -----	76
Administration -----	74	Protection -----	77
Maintenance, Improvements, New Construction -----	74	Miscellaneous -----	77
		Visitor Contact Chart -----	78

REPORTS FROM THE MEN IN THE FIELD

Aztec -----	84	Montezuma Castle -----	86
Bandelier -----	79	Gran Quivira -----	109
Bandelier ECW -----	81	Natural Bridges -----	95
Bandelier-Forestry -----	81	Navajo -----	109
Canyon de Chelly -----	105	Pipe Spring -----	101
Capulin Mountain -----	93	Sunset Crater -----	93
Casa Grande -----	100	Tonto -----	90
Chaco Canyon -----	82	Tumacacori -----	87
Chiricahua -----	96	Walnut Canyon -----	96
Chiricahua ECW -----	99	White Sands -----	107
El Morro -----	102	Wupatki -----	91
Closing -----	115		

HEADQUARTERS STUFF

Branch of Education -----	110
Visitor Contact Figures -----	113

THE SUPPLEMENT

Tumacacori Alcoves or Transepts, by Frank Pinkley & J. H. Tovrea ---	121
Peculiar Growth of Cactus, by Charlie R. Steen -----	126
Carleton's Diary - 1853 -----	127
Prehistoric Village at Saguaro, by Charlie R. Steen -----	150
Letter from the Hennings -----	152
Ruminations, by the Boss -----	158

SOUTHWESTERN MONUMENTS PERSONEL

HEADQUARTERS, Southwestern Monuments, Coolidge, Arizona: Frank Pinkley, Superintendent; Hugh M. Miller, Assistant Superintendent; J. H. Toyrea, Assistant Engineer; Robert H. Rose, Assistant Park Naturalist; Dale S. King and Charlie R. Steen, Junior Park Naturalists; Millard Singerman, Clerk-Stenographer; Luis Castellum, ECW Clerk; Deric Nusbaum, Traveling Ranger; Clarence Cole, Student Technician.

FIELD STATIONS:

1. Arches---Moab, Utah. W. M. Turnbow, Custodian.
 2. Aztec Ruins---Aztec, New Mexico. Johnwill Faris, Custodian; Robert W. Hart, Ranger-Archeologist.
 3. Bandelier---Sante Fe, New Mexico. Earl Jackson, Custodian; J. W. Hendron and Alfred Peterson, temporary Rangers.
 4. Canyon de Chelly---Chin Lee, Arizona. Robert R. Budlong, Custodian; Doug. Harritt, temporary Ranger.
 5. Capulin Mountain---Capulin, New Mexico. Homer J. Farr, Custodian.
 6. Casa Grande---Coolidge, Arizona. J.W. Winter, Custodian; J. Donald Erskine, Park Ranger; Frank Horne, acting Ranger.
 7. Chaco Canyon---Crownpoint, New Mexico. Thomas C. Miller, Custodian; Homer F. Hastings, temporary Ranger.
 8. Chiricahua---Willcox, Arizona. Frank L. Fish, Custodian; Orvel Ollinger and Bronson Harris, CCC guides.
 9. El Morro---Ramah, New Mexico. E. Z. Vogt, Custodian.
 10. Gila Cliff Dwellings---Cliff, New Mexico. No Custodian
 11. Gran Quivira---Gran Quivira, New Mexico. George L. Boundey, Custodian.
 12. Hovenweep---Cortez, Colorado. No Custodian.
 13. Montezuma Castle---Camp Verde, Arizona. M. L. Jackson, Custodian; Curtis Cox, acting Ranger.
 14. Natural Bridges---Blanding, Utah. Zeke Johnson, Custodian.
 15. Navajo---Kayenta, Arizona. John Wetherill, Custodian; Milton Wetherill, Ranger-Historian.
 16. Pipe Spring---Moccasin, Arizona. Leonard Heaton, Acting Custodian
 17. Rainbow Bridge---Rainbow Lodge, Arizona. No Custodian.
 18. Saguero---Tucson, Arizona. No custodian.
 19. Sunset Crater---Flagstaff, Arizona. J.W. Brewer in Charge.
 20. Tonto---Roosevelt, Arizona. Woodrow Spires, Ranger.
 21. Tumacacori---Box 2285, Tucson, Arizona. Louis R. Caywood, Custodian.
 22. Walnut Canyon---Flagstaff, Arizona. Paul Beaubien, Ranger.
 23. White Sands---Alamogordo, New Mexico. Tom Charles, Custodian.
 24. Wupatki---Flagstaff, Arizona. J. W. Brewer, Ranger.
 25. Yucca House---Cortez, Colorado. No custodian.
-

CONDENSED REPORT

Coolidge, Arizona
September 1, 1936.

The Director
National Park Service
Washington, D. C.

Dear Mr. Director:

The Condensed Report on Southwestern Monuments activities for July:

TRAVEL

	<u>August, 1936</u>	<u>August, 1935</u>	<u>August, 1934</u>
Aztec Ruins	2,658	2,250	2,184
Bandelier	3,180	2,475	2,125
Capulin Mountain	4,500	---	7,000
Casa Grande	1,487	1,376	1,376
Chaco Canyon	1,272	1,031	1,014
Canyon de Chelly	169	135	---
Chiricahua	906	958	1,102
El Morro	470	333	605
Gran Quivira	730	385	365
Montezuma Castle	1,578	1,910	1,654
Natural Bridges	72	120	50
Navajo	---	140	83
Pipe Spring	105	256	250
Sunset Crater	1,231	1,216	---
Tonto	324	360	---
Tumacacori	1,037	906	641
Walnut Canyon	2,034	2,047	1,910
White Sands	18,753	7,013	---
Wupatki	436	290	190
<u>Actual Reported</u>			
Registration	40,942	23,215	20,549

Travel in the Southwestern Monuments showed a tremendous gain in August, 1936, over the same month last year. The increase for the most part is due to large travel figures at Capulin Mountain and at White Sands; the former, reporting 4,500 visitors, failed to send in a report last year, and White Sands, which has become a favorite spot for large picnics and celebrations of every sort nearly tripled the 1935 count. Travel at the other monuments in the Southwest has remained about at the same level as last year, some stations showing a decided gain in visitors while others have lost a little in the totals.

CONDENSED REPORT (CONT.)

000 GENERAL

021 WEATHER

Rains have been general over the entire Southwest during the past month; although many approach roads to the various monuments are badly washed and rutted, apparently none are impassable. Fire hazards at the timbered reservations have been reduced to a minimum, with a consequent abandonment of fire lookouts. Only one fire occurred in the monuments during the fire season just over, and that was a very small blaze at Bandelier late in May. Range conditions for the most part are excellent, especially at the monuments which are fenced. Altogether, the weather reports of custodians have a much brighter aspect than they had for July.

100 ADMINISTRATION

123 INSPECTIONS BY NATIONAL PARK SERVICE OFFICERS

Gran Quivira - Adrey Borrell; W. H. Wirt; H. B. McDougal; W. Ward Yeager.
Canyon de Chelly - Ned Burns; Dale King; J. B. Hamilton.

Chiricahua - George Kellor; W. H. Wirt; H. B. McDougal; W. Ward Yeager.

Pipe Spring - Al Keuhl

Walnut Canyon - Dale King

Chaco Canyon - Ned Burns; Dale King; Johnwill Faris, A. E. Underhill;
J. B. Hamilton.

Bandelier; - Ned Burns; Dale King; Chuck Richey; Harry Thompson; Herbert Lallo; Lyle Bennett; A. E. Underhill; A. B. Stevens; Conrad Wirth; H. H. Cornel; Dick Sias; Al Jeuhl; J. E. Kell.

Aztec - Herb Laier; George Collins; Chuck Richey; Jim Hamilton; Russel Grater.

El Morro - Dick Sias; Jim Lloyd; Milo Christiansen.

125 OTHER GOVERNMENT OFFICERS

White Sands - U. S. Senator Hatch; U. S. Senator Chaves; Congressman Thomason; Governor Clyde Tingley; Judge Joseph McGill; Collector of Customs Adrian Pool.

Aztec - U. S. Senator Frazier of North Dakota.

Chaco Canyon - W. M. Beatty and C. L. Blair of USIS.

Chiricahua - Charles Cochran and Martin Buzan of Shrub Invasion Survey.

200 MAINTENANCE

Capulin - Road to summit of mountain in excellent condition due to recent maintenance work.

Canyon de Chelly - Rains during the month washed out portions of the White House Trail. The trail is now being re-sloped and drained.

CONDENSED REPORT (CONT.)

210 MAINTENANCE, UNUSUAL (Cont.)

Canyon de Chelly (Cont.)

Because inadequate drainage which permitted water to gather around the custodian's residence, a bar pit was dug around the house, and dirt recovered from the excavation was thrown on the house side in order to raise the elevation of the ground surface.

Casa Grande - Heavy rains on July 28 caused the temporary sewage sump to cave in. This necessitated four man-days of work to repair.

Wupatki - A heavy rain on August 11 caused damage to trails and dirt roofs. The damage has been repaired.

220 NEW CONSTRUCTION

Canyon de Chelly - New pump house practically complete, concrete roof slab ready to be poured.

Aztec - Parking area and trails 100% complete.

Chiricahua ECW -

1584 Feet of new trail constructed

Foundations poured and stone walls constructed to height of three feet and water and sewage connections made on headquarters ranger station.

Excavations for equipment shed begun.

Bandelier ECW -

Construction of Museum Cases started

Quarters #2 completed and ready for occupancy

Wall and roof construction completed on residence area equipment shed

Ditching of residence area to prevent wash by flood waters completed.

Construction of root cellars started

Crew at work filling orders for carved wood signs

Some landscaping around the headquarters area.

300 ACTIVITIES OF OTHER AGENCIES IN THE MONUMENTS

320 COOPERATING GOVERNMENT AGENCIES

Casa Grande - The Indian Service tied the monument in to the 60-cycle AC line which runs along the south boundary. This connection has enabled the custodian to disconnect the two small power plants which have been used to generate electricity heretofore.

Chaco Canyon - The Soil Conservation Service suspended all operations on the Monument on July 23 with their work 90% complete. Before the camp broke up flood and rain waters had destroyed their construction to such an extent that repair work, if attempted, will take several months. At present the problem has not been settled.

CONDENSED REPORT (CONT.)

320 COOPERATING GOVERNMENT AGENCIES (Cont.)

Chaco Canyon (Cont.)

The University of New Mexico Summer Camp nearly completed the excavation of two small ruins on state lands near the monument boundary. This work started in 1934 but was not continued until this year.

350 DONATIONS AND ACCESSIONS

Chiricahua - Douglas Chamber of Commerce and Mines donated a large loose-leaf binder for the registration sheets.

Headquarters - Several books (all government publications) were received for the library.

Two small archeological collections

One small collection of photographs taken between 1896 and 1901

400 FLORA, FAUNA, NATURAL HISTORY.

430 ARCHEOLOGY

Wupatki - Custodian found a hitherto unreported "ball court" a short distance from the Citadel group of ruins

Chaco Canyon - Heavy rains have done much damage to walls of Pueblo Bonito and Chetro Kettl this month - Mural Room #1 in Chetro Kettl has been completely roofed in an attempt to conserve this outstanding bit of prehistoric wall painting.

440 INSECT CONTROL

Bandelier - Web worm control this year has been very effective.

Casa Grande and Chiricahua - Studies are being made to determine the nature of insect pests which are infecting the trees at these two monuments.

460 BIRDS

Tumacacori - Banded twenty birds during the past month.--Other bird banding stations did not attempt to trap because of the large quantities of natural feeds which the birds prefer.

470 ANIMALS

The Department of Zoology of the University of Michigan has identified the following rattlesnakes from specimens.

Chiricahua - *Crotalus molosus molosus* - Black tailed rattlesnake

Crotalus lepidus klauberi - Green rock rattlesnake

Casa Grande - *Crotalus scutularius* - Mohave rattlesnake.

CONDENSED REPORT (CONT.)

500 USE OF MONUMENT FACILITIES BY THE PUBLIC

530 IMPORTANT VISITORS

A large number of prominent scientists, principally archeologists, and student study groups have visited the Southwestern Monuments this summer.

600 PROTECTION

620 FIRE PROTECTION

Chiricahua - CCC camp spent 25 man-days fighting a fire on the Coronado National Forest.

650 SIGNS

Boundaries of the monument are inadequately marked, which will affect the protection of deer and turkey during the approaching hunting season.

900 MISCELLANEOUS

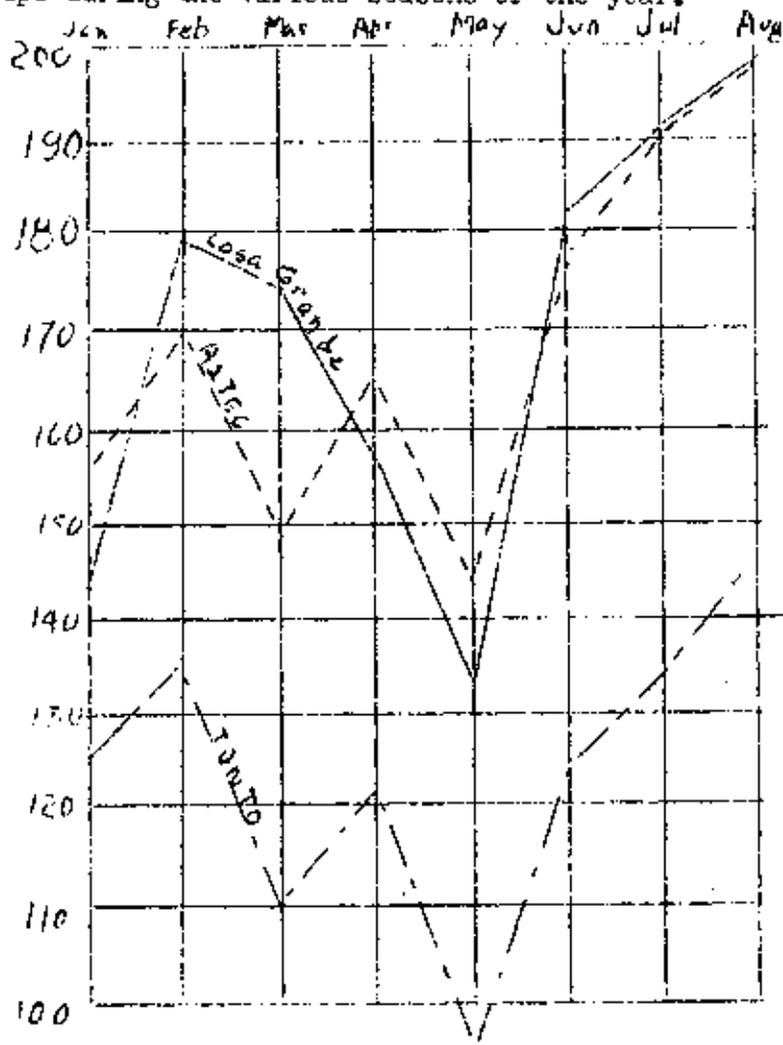
MAIL COUNT

Incoming:		
Government	1,605	
Personal	617	
Total incoming	<u> </u>	2,222
Outgoing:		
Government only	1,737	1,737
Telegrams:		
Incoming	38	
Outgoing	35	
Total telegrams	<u> </u>	73
Grand Total		<u> </u> 4,032

Cordially,

Frank Pinkley,
Superintendent.

Something which might prove to be very interesting turned up this month in a study of visitor contact figures for three widely separated monuments. At Casa Grande, Tonto, and Aztec, where both ruins trips and museum lectures are given, a perfect visitor contact for any given month should be 200%; i.e., one ruins trip plus one museum lecture for every visitor. A percentage of that sort, of course, is impossible, nor do we expect it, but in running out the visitor figures for the three monuments in question, a striking similarity in curves was noted. All three stations show a low point in visitor contact for May and a high in August. A check will be kept for the remainder of the year in order to ascertain whether the curves will retain their similarity. We are at a loss for the explanation so far; two reasons have been suggested, either a general let-down on the part of the rangers or a decided change in type of visitor during the late spring. The graph lines are too similar to suggest a coincidence and here at headquarters we feel that we might be on the trail of an interesting study in visitor reaction to guided trips during the various seasons of the year.



BANDELIER

By Jerome W. Hendron, Acting Custodian

Visitors:

Visitors numbered 3,180, arriving in 832 cars from 35 states, district of Columbia, and Territory of Hawaii.

The six highest states in order by visitor count were: New Mexico, 739; Oklahoma, 404; Texas, 378; Kansas, 199; Missouri, 112; and Illinois, 109.

Attendance increased 1,018 over last month, or 47%, and increased 705 over August, 1935, or 25%. This is a new travel record for Bandelier being heavier than any previous month.

A total of 21 people from foreign countries visited the Monument this month; they were from England, France, Germany, China, and Guatemala.

One hundred twenty-four return visitors were also counted.

Weather and Roads:

Days partly cloudy:	24	
Days cloudy-----:	2	
Maximum Temp.-----:	88	August 12.
Minimum temp.-----:	56	August 21.
Mean Maximum-----:	81	
Mean Minimum-----:	59	
Precipitation-----:	.73	against 4.63 for August, 1935.
Rain and sleet----		July 28, 30, August 2, 3, 4, 5, 6, 7, 10, 14, 15, 18, 19, 20, and 21.
Dust storms-----:	None	

We can't complain about the weather this month since the average temperature was slightly lower and more pleasant than the rest of the summer months. The heaviest precipitation came on August 18, with a total of .21 inch, beginning at 6:15 p.m. and ending sometime during the night.

The roads have been corrugated in spots due to the heavy rains on the Ramon Vigil Grant and in the Detached Section. Santa Fe and vicinity have experienced some heavy downpours this month washing out several spots in the highway leading to Bandelier around the neighborhood of Pojoaque where the Pojoaque and Tesuque arroyos cross the road. Several cars have gotten stuck in these washes and lives have been in danger within the last week due to the fact that inexperienced persons living outside of New Mexico never know when an additional wall of water will descend upon them.

BANDELIER (CONT.)

Visitor Trip Chart:

Two-hundred thirty-six parties took guided trips through the ruins, or were given short individual lectures, numbering 1,928 people. The average time per party was 71 minutes including the short individual lectures. Two-hundred twenty-two parties took complete ruins trips, making a total of 1,887 people; forty-one were given short talks or 14 parties in all averaging 21 minutes per party. Our largest single party for this month numbered 59 on August 9.

Special Visitors:

Ned Burns, Chief of the Museum Division was in for a few hours with Dale King on July 25. August 1 - Dr. E. B. Renaud of Denver University brought a group of his students in for a visit. August 5 - Karl Ruppert from the Carnegie Institution spent a few hours in the canyon. Mr. Ruppert has recently returned from Central America where he has been working with the Maya cultures and is now at the Laboratory of Anthropology in Santa Fe writing up reports. August 7 - Dale King returned to spend some time in the preparation of the Museum for Bandelier. August 8 - Chuck Richey dropped in with Harry Thompson, Assistant Chief Architect out of the Washington office. Herbert Maloy and Lyle Bennett from the Regional office in Santa Fe accompanied them.

August 9 - Dr. Frederick Webb Hodge, Director of the Southwest Museum in Los Angeles took one of our guided trips. Engineer Underhill of the San Francisco office was in for a few hours on business. August 12 - Chuck Richey, Lyle Bennett and Herb Malloy from the Regional office in Santa Fe were out on inspection. August 14 - A. B. Stevens, Museum Technician from Washington dropped in for a few minutes en route to San Francisco. August 15 - Assistant Director Conrad L. Wirth visited Bandelier en route to Mesa Verde. Accompanying him were H. H. Cornell, Regional Landscape Architect from Oklahoma City, R. W. Sias, Administrative Inspector of Arizona, A. L. Kuehl, Resident Landscape Architect at Grand Canyon, and Chuck Richey and J. E. Kell of the Regional Office in Santa Fe.

General:

Dale King has been in this month on Museum preparation and it looks as if we are actually getting under way. It is going to be a long tedious process but Rome wasn't build in a day; nevertheless, it is going to be most interesting and very fascinating work.

The canyon folks were taken by surprise the latter part of July when Ranger Peterson brought himself home a wife. We wish them the best of luck.

We miss Bill Sharpe around here and wonder if he wishes he were back

BANDELIER (CONT.)

here where it is nice and cool. There is just a slight touch of fall in the air and the leaves on the trees are showing a slight tinge of yellow so it won't be long until winter is here.

Our class in Anthropology is coming along famously, 13 students having shown up the first night. The boys seem to be very interested in the subject and I think they are all willing to learn. Now and then we see some familiar faces there, such characters as Jim Fulton and Mr. Read; the more the merrier.

BANDELIER FORESTRY

By James Fulton, Forestry Foreman

Web Worm Control:

In my report for July, 1936, I gave an account of spray control of the web worm infestation in Frijoles Canyon. At this time I am able to conclude that the spraying was effective to a surprising degree. The infested trees suffered little from defoliation after they were sprayed. However, I am inclined to believe that wet cold weather played a part in holding the worms in check. The sprayer itself worked better this year, mainly because the pulling shafts were reinforced so that no time was lost as a result of the shafts breaking. However, we still experienced difficulty in spraying seventy-five foot cottonwoods with a forty foot spray stream.

Forest Fires:

So far this year we have had only one fire which was previously reported. Fire hazard is at a minimum because of 3.82" precipitation in July and .73" in August.

BANDELIER ECW

H. B. Chase, Project Superintendent

Construction of Museum Cases under the Furniture Project was started this month. One case has been completed to the point of satisfaction for observation as to the installation of exhibits during the recent stay of Junior Park Naturalist Dale King. This case construction will continue to proceed in accordance with case plans now approved.

Final interior decorating is being completed at this time on Quarters No. 2 which now brings this building to a point for occupancy. It is expected that the Acting Custodian of this Monument will occupy this building.

All wall and roof construction has been completed on the Equipment

BANDELIER ECW (CONT.)

Shed Project, located in the residential area. Crews are now laying the flagstone floors completing study partitions plumbing, and electrical outlets in preparation to plastering and interior decorating within the next week. This building will afford housing for personal cars owned by occupants of the residential area, and also includes two living rooms with connecting bath for a temporary and visiting employees of the Service.

Additional work under the project of excavation, channels, and ditches has been carried on through the month. Principally in the headquarters and residential areas, which have been subject to flood waters during the summer rains. Completion of this work around these areas will be of material help in eliminating the water damage at our newly constructed projects.

Excavation and a portion of under-pinning work at Quarters No. 1 has started our Root Cellar Project for the Quarters in the residential area. Recent approval of plans for root cellars has allowed the project to be started within the next week and will proceed as quickly as possible for the two finished quarters.

Receipt of approved sign design and alphabet from the Branch of Plans and Design has allowed us to proceed at full speed with a number of accumulated sign orders. A much larger crew than heretofore used in the carving and constructing of signs is now at work in an attempt to clean up the orders we now have for signs for the Southwestern Monuments.

The usual work crew at the rock quarry has been in progress all month preparing the building stones for construction of buildings projects, that they may go forward as fast as approved plans are received.

Some small planting and landscape work has been carried on in conjunction with excavation, channels and ditches project in and around the parking plaza. .

CHACC CANYON

By Thomas C. Miller, custodian

General

The approach roads to the monument have been in fine shape most of the month. The roads have been maintained both north and south. However, we have had some heavy rains, and in some places the roads would be badly damaged. Several cars have been in the ditches overnight in both directions, but I believe that was caused by high water or by trying to travel the road during the rain. The worst damage during the month was in the monument and was caused by heavy rains

CHACO CANYON (CONT.)

washing our roads away on the rock hill and by the diversion dikes on the canyon floor that were built by the Soil Conservation Service centralizing the water, then breaking and causing new arroyos to be made across our roads.

Travel

1,272 people entered the monument in 348 automobiles coming from 30 states, the District of Columbia and Hawaii. Foreign countries; Mexico and Peru.

Weather:

Maximum for the month was 96 on the 17th. Minimum was 52 on the 21st. Precipitation for the month was 2.58. The greatest in 24 hours, .90 inch, was on the 4th.

Special Visitors:

Dale S. King, Junior Park Naturalist, Southwestern Monuments, and Mr. Ned Burns from the Washington office arrived July 23 and departed on the 24th. Dale broke the axle or something on 1800 which had to be towed to Gallup for repairs while I took Ned and Dale to Santa Fe and Bandelier National Monument. Custodian Paris and A. E. Underhill from Aztec Ruins visited a good monument on the 26th. Mr. W. M. Beatty, Director of Education USIS, Washington, D. C., and his assistant, Mr. C. M. Blair, Windowrock, Arizona, were monument visitors on July 27. Mr. William H. Jackson, who visited the Chaco in 1877, was an interested and interesting visitor on the 29th. Associate Engineer and Mrs. Jim Hamilton Arrived August 6, and departed on the 7th. Mr. Hamilton measured our Chaco bridge, the rock hill, and went over many other things in the way of new construction that we hope to get started soon. Dean Cummings and his archeological field school, University of Arizona, arrived on the 8th and departed on the 10th. The Carlsbad Caverns was well represented this month by Mrs. J. E. Woodrow and party on the 13th.

Range Conditions

The grass and shrubs are showing greater growth this summer than ever before. Chaco has begun to look like a place where thousands of people might have made their living by agriculture a thousand years ago.

Soil Conservation Service:

This Service suspended all operations in this monument July 23. The project was considered to be 90% complete. The other 10% was to have been the driving of some piling in the Chaco Wash near the ruins of Del Arroyo for revetment purposes. However, before the camp departed August 4, all the work in Hungo Pavi canyon washed away. This was followed by

CHACO CANYON (CONT.)

a 7 $\frac{1}{2}$ -foot rise in Chaco Wash which badly damaged all of the revetment work around the ruins of Del Arroyo and Kin Kletsoi. It also wrecked several diversion dikes on the canyon floor. At this time it is not known by this office what their plans are, but it is believed that it will take several months with a large crew of men to replace the damage done by the flood waters during the first four days in August.

Ruins Repair:

Much damage has been done to the ruins of Pueblo Bonito and Chetro Ketl during the month because of the heavy rains mentioned elsewhere in this report. The Mural Room No. 1, Chetro Ketl, that was recently excavated by the research group has been completely roofed. The first and second story (round wall) near the two corner doorways in the southeast section of Bonito collapsed and is now being repaired. A complete report with pictures will be mailed to your office when the job of restoring the wall has been completed. However, we will not have the money to provide proper drainage for this wall at this time. This is believed to be one of our best walls and it is hoped that we can do something about drainage in that portion of the ruin.

Activities of other Agencies in the Monument

The University of New Mexico is excavating a small ruin on Section 13, just a short distance east of Casa Rinconada. This ruin is about 90% complete. Also a small ruin up the canyon southeast of Chetro Ketl is being excavated. The latter is known as the Bertha Dutton Dig. The work on this ruin is about 80% complete. This work was started during the summer of 1933. It was continued in 1934 but not in 1935. Because of these complicated surveys, I am not in a position to say what section of land it is on. I am including in this report for future reference a list of the names of the faculty and students of this school.

AZTEC

By Johnwill Faris, Custodian

I have been waiting a long time, Boss, to report a banner month of all times, and this is the month. August, 1936, beats any month in the seven years that I have served here, with 2,658-visitors for the month. Not only was it a big month from the visitor standpoint but it will long be remembered as the month that we finished the parking area and constructed our trails, thus making it possible for us to present the most pleasing approach in the history of the Monument. Under the able supervision of A. E. Underhill, a most excellent job of paving and walk construction was accomplished. It has been my pleasure to have worked with many experts from the various departments and as usual Mr. Underhill was most cooperative and it would be considered an honor to work with him in any future construction along his particular line.

AZTEC RUINS (CONT.)

We take this opportunity to thank him officially for a job well done and also for hours of pleasant association in transacting the necessary official business.

We started this month off with a bang by presenting our Ruins to the Regional Director and his assistant. On July 31, about eleven thirty at night Herb Maier, George Collins and Chuck Richey dropped in on us and we spent a most pleasant hour with them. It was nice to have them and when we remember that Mr. Maier was instrumental in getting all the work from the ECW, especially our sewer system, it was an added pleasure to show him about. Underhill had the walks all laid out for Chuck Richey and it was a grand visit even though it was in the middle of the night. They are invited to stop off with us again. Jim and Mrs. Hamilton were right on the heels of this party and then a few days later they stopped off again on the way back to Santa Fe. Not to be outdone by other divisions, Mr. and Mrs. Russell Grater from the Wildlife Division were in for a few minutes, and then to top off our official list none other than the one and only Gay Lovell, Mr. and Mrs. Lovell stopped off on their way back from their vacation. We spent a few minutes of mighty pleasant memories, etc., especially since this is where Dick met the Mrs. I almost put Gay to work again since I lost my ranger this month. Of all the months to loose a ranger it would be August.

Mr. Hart left our employ August 3 and is trying his luck again at selling life insurance. He finds that selling rains to the tourist is not as paying as selling life insurance and he returned to South Carolina. We lost an excellent contact man in Bert and we hated to loose his services; any way we wish him the best of luck. In view of his leaving we have been fortunate in securing temporarily the services of Oscar Tatman. Mr. Tatman has been with us before and then too having worked a number of years with Earl Morris he is a most valuable man, and has certainly been a life saver this month.

In addition to Park Service officials we have had some especially interesting parties. On August 10, Dean Cummings and a group of Arizona students were in with us and spent the night in the Great Kiva, a few days later Mr. Brown and a group of German students from the old country were in and they too spent the night in the Great Kiva. Both of these groups were very mannerly and we enjoyed them very much. We like the detail that these groups require, it keeps us on our toes. On August 18, Senator Frazier of North Dakota was in with some Interior Department officials. Senator Frazier was very interested even though he had heard Indians all day in attending and conducting an investigation of the Navajo problems. We notice on the register several who did not make themselves know. Bureau of Standards, Washington, D. C., Department of Agriculture, Washington, D. C., etc. We wish it were possible for us to contact more closely the visitors we have, but with two guides, or at best, three, it is impossible to show twenty-five hundred through

AZTEC RUINS (CONT.)

in thirty days and know very many of them. It would be grand if we could limit each party to six or eight but that is impossible so we do the best we can.

We are closing this month, Boss, getting ready for even greater numbers for the first week of September. The Gallup Ceremonial and celebrations in Durango and Santa Fe, with all the Indian dances, will keep visitors and tourists going through in large numbers. With one of our best months as history, I pass on to another and bid the gang, adios.

MONTEZUMA CASTLE

By Martin L. Jackson, Custodian

Another hot month has passed and we are all still alive and able to pull up to the table and take on a bit of nourishment. Have been complaining with the visitors about the hot weather this month and am convinced that it works better than to mention the fact that some other places in the world have hot weather.

Our registration book shows that we have had 1,578 visitors for the month, with 858 climbing the ladders. 37 states and 4 foreign countries being represented. The first part of the month fell behind July, but the last half picked up a bit and we had a few more than for the month of July. We can not expect to have a big run of visitors as long as the highway is torn up as it has been during the past summer, meaning State Highway 79 between Clarkdale and Jerome. One is on a detour all the way between the two above mentioned towns. And we have had many complaints during the past month.

C. B. Cosgrove the well known archeologist of Cambridge, Mass., was a visitor during the month; Mrs. Cosgrove accompanied him.

On the 29th we had 54 of the boys from the summer camp of the Iowa State College. They are at present encamped at Mormon Lake. We found the boys very gentlemanly and we enjoyed their visit.

Some 30 boys from the Pacific Coast Military School were also in to see us during the month. They are encamped on Oak Creek near here. They were rather young and inexperienced but were not at all bad. We invited them to come back and see us another year. I am still strong for selling the parks and monuments to the youngsters; once they are sold on an idea they stay sold. While the older ones are quite liable to forget unless they are very strongly impressed.

Earl and Betty Jackson came in to see us on the 2nd. Needless to say, we were glad to see them and to have them with us for at least awhile. Believe Earl is improving and believe he will make the grade if he doesn't get so mean and cranky that Betty kills him off.

MONTEZUMA (CONT.)

We have had a couple of light showers during the month, but has been so dry that half of the leaves have fallen off the trees here on the monument. Quite a few of the trees have died, and we just about the same as have no shade in front of the museum.

We find on checking our registration for the past month that 61 percent of our visitors were from out of state, which is more than usual for a hot summer month.

TUMACACORI

By Louis R. Caywood, Custodian

During the month 912 visitors were contacted and conducted through the Mission. An additional 125 used the facilities, making a total of 1,037 visitors to the monument. These visitors represented 33 states and 5 foreign countries - Mexico; Canada; Transvaal, South Africa; India; and Italy.

Luis Castellum was our only visitor from Headquarters this month. Luis Stopped in to see how we were getting along before leaving for the Coast on his vacation and again on his return. He mentioned that he had visited some of the California missions while vacationing. We expected a visit from the Boss and Tov and heard several times that they were practically here, but so far we are still waiting.

On August 2, 128 CCC boys from Camp F-30-A near Tucson were Mission visitors. That day, by the way, was a pretty big day with 253 people paying us a visit.

Although this is the rainy season there has been little rainfall on the monument. We have only had about two hard rains which came early in August. The rains are spotted and have fallen mostly at other places in the vicinity. Nogales and Tucson have both had a number of heavy rains during the month. However, we are thankful for what we did get as it helped lots. Our little mesquites are really beginning to look like trees now.

The recent information that an appropriation has been approved by the Secretary of the Interior for a combined Museum and Administration Building has been well received by local people and, needless to say, by us also. We have already been besieged with questions as to when, where and how the building were to be built.

Following the announcement in the Tucson Daily Star, the Editor, Mr. W. R. Mathews, published the following editorial:

TUMACACORI (CONT.)

(Arizona Daily Star, August 10, 1936)

"Announcement of government funds for preservation of the Tumacacori mission holds promise of one more reminder that the men who settled the Southwest did a great work. Here is a Spanish mission, monument to the men whom Spain, in her hour of greatness, sent into the new world. But if truth were told it should be called a Mexican mission, for its work and the work of others like it was the welding of two mighty peoples which created modern Mexico.

"Many of the residents of Southern Arizona are newcomers. Men and women who have all their roots in the east, whose ancestors came into the United States by a route different from that of the original settlers of the Southwest and from different countries, too often to not appreciate the breadth and scope of the forces which built this part of the country.

"Until these people secure some appreciation of the Mexican background they must remain aliens in the Southwest which was, after all founded and built by Mexicans. These alien minds come from ancestors who settled in wild and untamed country inhabited by savage peoples who formed only one more handicap to the settlers.

"When the Spanish entered Mexico and the Southwest they found quite different conditions. The country was inhabited by highly civilized and cultured peoples who were, in many respects, farther advanced than the settlers. Instead of pushing aside native populations, they were forced to live among them where native influences had their way despite efforts of the conquerors to eliminate them.

"Pushing their way to the outer boundaries of the high Mexican cultures, the conquistadors found still other peoples. The Pima and the Papago of Southern Arizona were not least among these. Hence the missions. Here in far-flung outposts of European influence, the process of amalgamation and union of peoples and of cultures was carried forward. It is still going on despite the vast influx of alien hordes involved in the change of political control for this portion of the country.

"Actually, the recent alien influx is a third influence entering the country. Here is another people to add its quota to the total heritage of the desert country. The desert has absorbed the influence of the great Indian civilizations. The wave of new influence from Spain spread over it and was in its turn absorbed. Now comes a new alien race, often expressing in its ignorance the same type of scorn and impatience with the ancient populations which the Spaniards expressed in their day.

"Such an attitude is absurd. Whether we will or no, those of us

TUMACACORI (CONT.)

who intend to remain in the Southwest are one people who must and will go forward as a unit, not as separate groups. Tumacacori, with its memories of that process in former days holds a potent lesson. Let it not be ignored.

"In those old, crumbling walls, in the hot desert plains which surround them, in the rich tradition and legend which has come down to the present, is a story which should be learned by all who aspire to become a part of the Southwest. The process which went on in Tumacacori is going on today on the bustling streets of Tucson.

"In the liquid cadences of the Spanish tongue, in the lilting measures of native music, in the sturdy workers and business leaders who trace their heritage back to those who made Tumacacori possible, Tucson has its tradition and its background. The alien can come as a friend, adding his own store of tradition and beauty and adapting himself to the place as he finds it. Or he can come as a foe, scorning and attempting to destroy what is here, only to find in the end that he himself has become a part of what he scorns.

"How much better if the friendship can be maintained. By all means let Tumacacori stand as something which will tell us in walls more lasting and potent than words what such friendship can mean."

I recently received four carved rest room signs from Mr. H. B. Chase which were made at the CCC Camp at Bandelier. I must say the boys certainly make attractive signs. They harmonize very well with the wood of the entrance gates.

Birds banded during the month include the following:

Pyrrhuloxia	5
Arizona Cardinal	4
Cowbird	1
Inca Dove	1
Palmer Thrasher	1
Canyon Towhee	4
House Finch	1
Mockingbird	2
Lazuli Bunting	1
Total	<u>20</u>

Bird banding will be suspended until winter because the native food supply of grasshoppers, worms, seeds, etc., is too plentiful. The birds refuse the most tempting of baits set out for them at present.

TONTO

By Woodrow Spires, Ranger-in-Charge

This report brings to a close a typical summer month, with nothing out of the ordinary happening (not even a towel inspection).

Old man weather has been behaving very nicely. No really hot days this month which was probably due to the numerous showers and two hard rains which made the entrance road all but impassable.

The visitor count for the month shows an increase of 12% over last month but a decrease of 12% over the same period last year. The following figures were derived from SWM Stencil No. 16:

Total visitors to the monument -----	324
Total time guiding -----	5,055 Minutes
Total visitors taking field or ruins trip---	203
Total number of field or ruins trips-----	72.90 "
Average group field or ruins trip -----	4.06
Total visitors museum trips -----	273
Total museum trips -----	65
Total time museum trips -----	1,410 Minutes
Average group museum trip -----	4.20
Average time museum trips -----	21.53 "

This month 62% of the total visitors climbed to the ruins against 59% for the corresponding period last year.

I saw Earl Jackson in the early part of the month and thought how well he is displaying that courage it has taken and takes to build up the Southwestern Monuments. Earl was smiling and said he would be back at the best monument in the Southwest in six months even though the doctors say at least a year. He is a good example of how the boys can take that unexpected blow on the chin, then come back and win their fight.

Three times on the days I have been away from the monument some one has entered the ruins and things have disappeared including three manes and three signs.

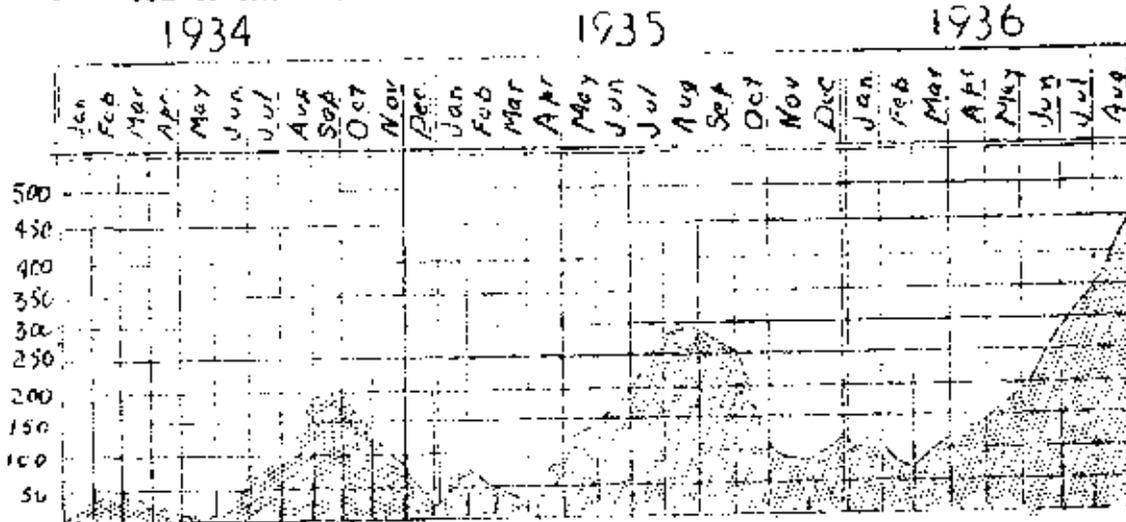
Since bringing home the boxes to ship snakes in there has been a noticeable shortage of snakes only three having been seen, two escaping and one being killed before I could come to his rescue.

Most of my spare time has been devoted to some mesquite stumps which I have been converting into stove wood.

WUPATKI

By James W. Brewer, Ranger-in-Charge

500 USE OF MONUMENT FACILITIES BY THE PUBLIC



205 guests registered at Wupatki Pueblo; 279 at the Citadel Group; 48 names are duplicated, leaving an all-time high of 436 registered visitors to this Monument in August, 1936; 1935, 290; 1934, 190.

A single overnight camping party (from the Rainbow Bridge-Monument Valley Expedition). I believe the reduced number of campers to Wupatki can be explained by the increased popularity of house trailers, drivers of which do not attempt to reach the Pueblo. In the past three years I have seen only one house trailer come to the Pueblo and that a collapsible one.

Of the 41 parties to the Pueblo 38 were "contacted".

530 NEWSWORTHY VISITORS

On the first, 51 members of the Southwest Indian Bible Conference held a meeting in the amphitheatre, where, to the accompaniment of a portable organ and a trombone songs were sung and blessing asked. (Maybe it's a kiva) The group then adjourned to the exhibition grounds and enjoyed a picnic supper under the ramadas.

On the second six students from the Iowa State School of Forestry.

On the 9th a unit of the Rainbow Bridge-Monument Valley Expeditioners camped overnight; Dr. Charles del Norte Winning and Ben Wetherill were in charge.

On the 21st Dr. H. S. Colton brought Miss Bartlett, Mrs. Theodore de Laguna, and her daughter, Dr. Frederica de Laguna to the Pueblo.

WUPATKI (CONT.)

020 WEATHER

Days partly cloudy	3
Days cloudy	24
Days clear	4
Maximum temperature	100 (July 24)
Minimum temperature	57 (Aug. 22)
Precipitation	2.061 inches
Anemometer reading	4429.3 total miles
Maximum 24-hour reading	418.1 miles (July 24)
Minimum 24-hour reading	85.1 miles (Aug. 15)

200 MAINTENANCE, IMPROVEMENTS, NEW CONSTRUCTION

201 UNUSUAL

A heavy rain at the Citadel Group on the 11th washed a hole through the roof of Room 1 in Malakihu. I hauled a load of red dirt on the 12th and replaced that which had washed out. For several days the floor of this room was puddled.

I think a two or three inch fill should be made on this floor to raise it enough to see the ventilator in the south wall and graded so that it will drain.

In Room 7 at the Pueblo I opened a channel to the ventilator to drain off standing water in this partially excavated and unroofed room.

The area below Room 49 has been badly cut by water. I constructed a ramp trail that eliminates the CWA stairway down which the damaging water gained force. The material used to construct the ramp was part of the unsightly back dirt southeast of the Pueblo. This pile has been considerably reduced. The balance should be spread and landscaped.

A new application of roofing was also put on Room 63.

400 FLORA FAUNA NATURAL PHENOMENA

430 ARCHEOLOGY

Observing fresh automobile tracks turning off the entrance road Sallie and I followed them to see where they led.

The tracks ended in a post-cut clearing which probably explained their presence; but to our surprise the "road" passed within 25 feet of a previously unrecorded "ball-court" less than three miles from the Citadel.

WUPATKI (CONT.)

GENERAL

When the last report was mailed the Monument was burned brown and looked very dead. Today it's a "meadow"--as if by magic everything has come to life. The brush and grass are green and feed looks really good. Arrowhead Tank lacks only 18 inches of being full, and is holding more water now than at any time in its five year existence. Clyde's tanks near Wukoki are both full.

On the 27th we had just under an inch of rain at the Pueblo. Roads and trails, and roofs gave way to running water. We were kept so darn busy we wished we had a sea sea sea camp.

The Navajcs have all left the basin and gone to Cameron for a dip (their sheep). This breather will give the range a good comeback.

SUNSET CRATER

By James W. Brewer, In Charge

1,231 folks registered at Sunset Crater this month, 1935, 1,216; 1934, no record.

The register was also signed by "Three jack-asses for trying to climb the mountain."

Paul says three elderly women told him they wrote the above line.

CAPULIN MT.

By Homer J. Farr, Custodian

In reporting activities of Capulin Mountain National Monument for August, 1936, the following is noted:

We have had 7,500 visitors during the last 30 days. This is based on the following: On last Wednesday, August 19, I was working where I could count every visitor and I counted 221 for the eight hours that I was there. I am confident that we are having as many as 250 average daily. I found people well pleased with their visits to the monument.

Weather has been very nice with three showers this month and only four days of real hot weather. All visitors speak in no uncertain tone praising the nice cool breezes we have here at the monument.

Road and trail repair has been active for about six weeks and the road and trails are in excellent condition. Many tourists tell me that they did not think it possible to get a mountain road so smooth as we have it now.

CAPULIN MOUNTAIN (CONT.)

As an experiment to get the real thoughts from some of our visitors to Capulin Mountain National Monument, one day this week I tore some slips of paper from a notebook I happened to have in the car and handed eight of them out to drivers of cars as they would pass where we were working on the road.

To each one I said exactly this: "If you care to, please take this slip of paper and write a few lines giving your impressions of the Monument and hand it back to me as you pass by."

All eight came back, and here they are:

Third trip up Capulin; better every time; roads best yet; glad trail has been put to bottom; made trip in high.

H. P. Vaughan,
Amarillo, Texas.

We found the roads excellent and workmanship of fine quality. The view from the Mountain gives a good view of the surrounding country and we think it is very educational.

Evelyn Patrick,
Woodward, Okla.

The scenic drive to top of Mt. Capulin is beautiful. The road is smooth and in good condition. Tho it seemed a little narrow to one not experienced in mountain travel, the view from the top is wonderful and the air extremely invigorating. The turn at the top is fine.

Alice Moyer,
Ponca City, Okla.

My impressions of the drive up Mt Capulin was first the well kept road and the neat and orderly arrangements of camp grounds which combined with the wonderful view gives you the feeling of being on top of the world.

Mr. & Mrs. R. D. Stewart
Ponca City, Okla.

We enjoyed the drive to the top of Mt Capulin very much and the road is in excellent condition.

Mr. and Mrs. L. E. Hollingsworth,
Tulsa, Okla.

Second trip here; very beautiful view; great road improvement over 1933.

H. E. Rodol,
Enid, Okla.

We enjoyed the trip very much. The view is great and the road is wonderfully fine.

Mr. and Mrs. L. E. Lillor & Sons,
Enid, Okla.

CAPULIN MOUNTAIN (CONT.)

Mt Capulin, a worth while trip and every school child should visit this place.

Mrs. Geo. P. Williams,
Elcetra, Texas.

NATURAL BRIDGES

By Zeko Johnson, Custodian

I believe that this is the best report I have ever made. 197 visitors registered during August; in addition several parties arrived while I was out hiking or in Blanding after mail. Twenty-five states and Cuba are represented on the registration sheets.

The weather has been ideal except for two or three days of rain. Last Thursday night, the 20th, the most severe thunderstorm I have ever experienced blew up at two a.m. and lasted until four. We thought our tent would certainly be torn to pieces. Mrs. Johnson was very frightened and I'll admit that I was nervous too. The lightning struck several times within a few rods of our tent, and the thunder was so loud and severe that it made our heads ache. The floods in the canyon soon began to roar and next morning we saw that the water had run 22 feet deep down Armstrong Canyon by Edwin Bridge and in coming up the same canyon yesterday evening I saw that the head had increased as it went down for the heaviest rain was about one mile east of camp, then west for three miles. Talk about a torn up canyon!

There is hardly any trail between Edwin and Caroline Bridges. Several large trees have fallen across the trail and it will take several days before I can get it fixed so that people can travel it again. Water backed up under Caroline Bridge and left from two to ten feet of quicksand, it was hard for us to get through yesterday but a few days of sun will fix things up again. Due to the rains the flowers, grass and other vegetation have never been as beautiful at this time of year as they are at present.

There has been only one bunch of campers in the canyon this season; they camped under Caroline two nights with twenty-five head of horses. I had them take their horses down White Canyon so that the stock did not graze on the monument.

I must mention the damage done to the road, or trail, or the 'tumbling in' road to the monument. I had to shovel a lot of dirt on the two steep grades as they were badly washed. I cut a lot of limbs and stripped some cedar bark for a foundation to the road so that folks can get in and out again. I'll have to make up a list of the questions asked me about that road and the answers I give. Several parties have returned for a second or third trip this year, and of course, when they were here first I told them that the road would soon be fixed and in good shape, now they call

NATURAL BRIDGES (CONT.)

it the 'Tumble In'. I still believe that some day I will have a good road coming into the monument.

I am still happy and trying to put over the job.

WALNUT CANYON

By Paul Beaubien, Ranger-in-Charge

There were 2,034 visitors to Walnut Canyon National Monument this month, or 13 fewer visitors than for August last year. 1,662 visitors were contacted while 372 had to shift for themselves.

The two Park Service visitors of the month were "Doug" Harritt and Dale King. Doug came to Flagstaff to take a Civil Service examination, but if he didn't know more about Mound Builders than I, he was wasting his time.

Have had lots of rain since reporting last time, and there were several bad holes in the entrance roads. On approaching these holes, some visitors decided to drive around them instead of staying on the packed road. Several parties had to be extricated before I placed enough logs along the roads to keep the traffic where it should be.

Due to the rains, there were only nine overnight camping parties this month. Also, the rain destroyed the attractiveness of the water-baited bird trap, so no birds were banded.

Representatives of the Soil Conservation Service came to Walnut Canyon with a truck to get walnuts for seed. However, they only found six nuts in the canyon.

When looking at last year's report for travel figures, I noted a paragraph that could be repeated:

"While speaking of signs, I wish the monument boundary was properly marked. Deer season will soon be here and there are a few bucks left. Have had reports of turkeys on the south side of canyon. About the only protection that could be given them would be boundary signs."

CHIRICAHUA

By Frank L. Fish, Custodian

Weather

Dry conditions prevailed until the 18th and 19th when heavy rains occurred over the entire monument, amounting to 3 inches of precipitation

CHIRICAHUA (CONT.)

(measurement by Faraway Ranch), this made it possible to close Sugarloaf Lookout. The nearby Forest Service district had the benefit of more rain earlier and had removed their lookout men sometime ago. The exceptional dry season has retarded forage plants in nearby areas and has probably kept many of our monument flowers from maturing.

Roads:

Monument roads have been kept in their usual excellent condition. There has been some improvement in approach roads and the outlook is good for future improvements. The maintenance crew of State 181 has done more than just maintain that road. Ten miles is being surfaced near El Frida. It is planned to start surfacing the stretch from El Frida to the Douglas-Bisbee Highway soon. The county had difficulties with the arroyos washing out sections of road near Dos Cabezas a few times during the month.

Visitor Statistics

<u>States</u>	<u>Cars</u>	<u>Visitors</u>	<u>Hikers</u>	<u>Guide Minutes</u>	<u>Foreign</u>	
Arizona	155	664 (69%)			Bolivia	
Others	50	242 (31%)			Canada	
					Mexico	
Totals	25	205	906	223	4,185	Panama

Park Service Officials

W. H. Wirt, H. B. McDougall and W. Ward Yaeger arrived on the 20th. Made a trip including Sugarloaf Lookout, Echo Canyon Trail and Massai Canyon Trail. These technical men became quite interested in what appears to be a tree infestation starting in the monument. Due to their limited itinerary it was suggested that I send Lawrence Cook and Dr. Deleon specimens for classification so Mr. Yaeger will have knowledge of the correct procedure to follow in the disposal of the infected trees and shrubs upon his return September 15. Custodian and Mrs. Caywood were here July 28. It was a pleasure to renew acquaintances with our nearest colleagues.

Newsworthy Visitors

Charles Cochran and Martin Buzan, agents of the Shrub Invasion Survey used the monument as a base for work nearby.

E. L. Springer, Bisbee, Arizona, collects moths and gladly gave me some interesting pointers on the moths of this region.

Chas. B. Conrad, Sierra Linda Ranch. Mr. Conrad will be remembered as a director of one Casa Grande Pageant.

CHIRICAHUA (CONT.)

John Ball, photographer, Wenderland of Rocks enthusiast, Bisbe, Arizona. Mr. Ball stayed at the Faraway Ranch. I was fortunate in paying a visit there and hearing some of his most interesting experiences while taking pictures of former Mexican troubles. Incidentally, during the evening, Mrs. Riggs brought up what I think a novel idea, consisting of transporting visitors to Massai Point in a horse drawn open vehicle. I consider this practical as it is slow enough speed to view the many formations, will revive earlier modes of travel and give young Americans a chance to experience the thrill of riding behind a set of fours. It even might recall a few cherished memories of the older people.

Cooperation with Other Agencies

The evening of the 21st a fire reported south of the monument in the Coronado National Forest was controlled with the assistance of 25 enrollees from the monument camp. Bill Stevenson, Ollie Nelson and I acted as leaders. It might be claimed we were the best dressed men attending. Bill wore nice clothes with oxfords and I tried to hold up the standard for our side by wearing a pair of the new elastic breeches.

Five rattlesnakes were sent to Dr. Frank M. Blanchard, University of Michigan. A report received in return on the first few sent showed two varieties: *Crotalus molossus molossus* - Black-tailed Rattlesnake; *Crotalus lepidus klauberi* - Green Rock Rattlesnake. Three snakes are awaiting the return of boxes to be shipped. Most of these snakes were brought in by the enrollees working with me on the trails.

Near the utility area in a brushy place a name painted in white lead on a large rock (RUTHIE JONES) was discovered. Ruthiri Jones, age 22, schooling 4 grades, Bisbee, Arizona, was a former enrollee in the Bonita Camp (M-2A0.) He worked on the pipe line in that vicinity. The Sheriff has gladly offered to locate the above Jones and try to impress the necessity to return and remove the defacement. This incident recalls a popular saying of Betty Jackson's father, "Education is like money, it can be used or abused."

Topographic Map:

Andy Clark and Carl Schmidt have completed the map of the monument. They can be proud of doing a nice piece of work in a very difficult country.

It is desired for education purposes to have a map made as soon as possible showing roads, trails and main points of interest from their masterpiece. Andy suggests someone draw small sketches of the outstanding formations in place. This probably could be done from photographs he sent in.

CHIRICAHUA (CONT.)

Donations

A loose-leaf binder for our register sheets was received from the Douglas Chamber of Commerce and Mines.

General

Homer Bennett has replaced Orvel Olinger as CCC guide during the month. Orvel has left the camp to accept work near Mesa. Bennett and Harris are doing nice work in taking care of the visitors and can be congratulated. Both are on the job around seven and one stays until five and longer if needed. This service is gladly given as they only have to put in around forty hours a week. In closing I might add that I find the surroundings delightful and the people a pleasure to work with.

CHIRICAHUA ECW

By Wm. Stevenson, Project Superintendent

During the month 1,764 feet of trail have been completed between Massai Point and Echo Point, leaving 600 feet unfinished on the Massai Point-Echo Canyon loop.

July 27 work was begun on a connection between Echo Point and Rhyolite Trail which will be approximately 4,000 feet in length. 800 feet have been completed to date.

Foundations were poured for the headquarters ranger station this month, sewer and water connections made, and walls constructed to a height of 3 feet. Doors and cabinets are being made up in the shop and are 90% complete.

Excavation for Equipment shed foundations was begun August 20.

Maintenance of the Bonita highway has continued through the month.

A new rock quarry was located this month one half mile from headquarters area. It is estimated that this quarry will furnish enough rock for all of the proposed Monument buildings.

George Keller, Master Mechanic from Oklahoma City, inspected our equipment August 10-12 and recommended condemning two 1933 Chevrolet dump trucks to be replaced by new Fords held here in storage.

Twenty-five man-days were spent this month fighting fire on the Coronado National Forest.

CASA GRANDE

By J. Donald Erskine, Park Ranger

With travel beginning to increase toward the Fall months, the count for August shows an increase of 345 over that of July, the total visitors for August numbering 1,487, which is an increase over that of August, 1935, by 58 visitors. The general type of visitors remains the same with cotton-choppers very prominent. 32 states, District of Columbia, Scotland, Canada, and Mexico were represented among our visitors which is about the same distribution that occurred last month. We had no official Park Service visitors during the month.

The weather for the month has been generally a little cooler than usual with a maximum temperature of 110 on August 13 and 14, and a minimum of 65 on July 26. As to precipitation, the month started off with a bang on the night of July 26 when two inches of rain fell in a few hours accompanied by a wind approaching 50 miles per hour from the East. This storm resulted in several large chunks of mud falling from some of the smaller ruins, but no actual serious damage to the Casa Grande itself, although with the high wind the roof was of no value whatsoever as a protection, and the "Big House" got thoroughly soaked. Rain also fell on August 2, 8, 10, 17, and 20, bringing the total precipitation for the month to 2.54 inches.

Our sewer situation still remains a problem as we hopefully wait some real action from the powers that be. The storm mentioned for July 26 caved in the sewer and required the work of two men a day and a half to dig it back to normal. No one seems to know anything about when we may expect actual work on the new system to begin. We are hoping it won't be many more weeks.

One bit of very excellent news I am privileged to include is the fact that we finally received our new electric fans for AC current, and we are now joined with the Indian Service power line which provides us with reliable and steady electricity at all times. In this same connection a few days after the electricity was turned on, our new refrigerators arrived, so now we have all the modern conveniences one could desire.

Custodian Jack Winter and Virginia are still in Chicago on leave without pay, but we are expecting them back about September 16 and will be very glad to see them both. Jack's place is still being filled very capably by Frank Horne, who was mentioned in last month's report.

Nothing exciting has happened in the Nature line during the month, except that Charlie Steen captured a rattlesnake alive and shipped it to the University of Michigan for identification. It was identified as a Mohave Rattlesnake, *Crotalus scutulatus*. The blacksnake mentioned in last month's report is still startling visitors in the Casa Grande. The young owls have finally left for parts unknown, and we miss them, as they were of great interest to the visitors. The parent birds are still with us, but they are of a more retiring nature, so not so

CASA GRANDE (CONT.)

conspicuous.

The individual guide trip times that we started recording last month are as follows:

Averages:

<u>Guide</u>	<u>Average Time Museum Trips</u>	<u>Average Time Ruins Trips</u>
Erskine -----	23.7 minutes -----	30.9 minutes
Horne -----	25.6 minutes -----	31.6 minutes
Cole -----	29.5 minutes -----	30.5 minutes
Boss -----	26.0 minutes -----	37.8 minutes
Steen -----	14.0 minutes -----	27.3 minutes

PIPE SPRING

By Leonard Heaton, Acting Custodian

I have stepped up the report one day this month on account of the mail service schedule. If this report doesn't get in the mail today it will lay over til August 24, which will make it late in getting in to your office. Our travel and visitors show a decrease in the number of people visiting the monument, but an increase in the local travel. The decrease in visitors, I think, is due to the fact that we have no sign at the junction of highway 89 and the road leading to Pipe Spring, one that people can read from their cars as they approach the junction. I would like to get this sign, and this statement will serve as a request for it.

The weather has been pleasant this month, for the most part, as almost every day there have been some storms around us, either in the mountains or desert. But with all this stormy weather, we here at the monument have not received any great amount. We have had several light rains, just enough to say that it sprinkled.

August 6 Al Kuehl again made me a visit and found things in a better condition and suggested that we get busy on the filling on the wash which we are doing now with the use of a stake truck. We have most of the other projects completed as much as can be till we get some good rains that will soak up the ground to pack it down some. To do anything other than haul dirt, we will need some material for the pipe line, fireplaces, and tables.

I haven't done any bird banding this month as I haven't any feed that they want. I set some of the traps two weeks ago and I have only seen four birds at the traps, rats and squirrels having eaten the rest of the feed.

PIPE SPRING (CONT.)

Made several purchases this month of materials and equipment which I have needed for some time.

Your last few pages of the Supplement were of great interest to me and I have been wondering who thought up that bright idea of moving you and the headquarters into some town away from the place that has produced this great Southwestern organization, known as the Southwestern National Monuments? I wonder if they think men can do better work away from the environment which produces the work. I don't think so. Keep it at Casa Grande Ruins, and we shall grow better than try to transfer it to a different location.

I almost forgot that I cleaned out the two ponds the other week and of the 7000 and 5000 trout that I placed in them eight or nine years ago I only got three out. I still have two old Carp in the ponds and they are so lazy and fat that they won't move unless forced to.

The Broadcast came yesterday and I have enjoyed it as far as I have read it, but I have to get out this report and some other letters and you know how I use time in getting out mail, so it will be this afternoon before I get to finish reading and re-reading the Broadcast.

Will say as the old Paiyte Indians say when they are agreed to anything: "Noonie Tu-Caubin Iwoee Iwoee".

EL MORRO

By Evon Z. Vogt, Jr.

August has been the busiest, rainiest, and most interesting month at El Morro so far.

Weather and Roads

This summer's rains have come in a peculiar manner. We will have a dry spell for a week or more and then a little cloud will suddenly appear. It will thunder twice and begin to pour. Rain will continue to fall off and on for a couple of days and then another dry spell will come. The usual August rains come nearly every afternoon, but this summer the dry spells between rains have been so long that the vegetation in most parts of the country is badly stunted.

The approach roads are getting in worse shape after each rain. Heavy prop trucks en route to Gallup cut deep ruts and often get stuck. The truck drivers then dig deep holes in the middle of the road which are usually graveyards for the next traveler who struggles along.

However, this being election year I believe that all the roads will soon receive special attention.

EL MORRO (CONT.)

Travel

Travel along the El Morro Scenic Highway was good until the first heavy rains came, and for several days afterwards nobody passed El Morro except transcontinental airplanes, sheepherders on burros, and the mail carrier.

This has, however, been the best month so far. Visitors totaled 470 and represented 20 states, Washington, D. C., Peru, Germany, and Russia.

Newsworthy visitors include Jo Lloyd, Assistant Superintendent of Grand Canyon National Park; Richard D. Sias, Park Service ECW Inspector; and Milo Christiansen of the Oklahoma office; Dendrochronologist Florence M. Hawley, assistant professor of anthropology at the University of New Mexico, who has just recently become Mrs. Donovan Senter, and Donovan Senter, both at the Chaco Research Station this summer; Dr. Julio C. Tello of Lima, Peru, one of South America's foremost anthropologists; Dr. Donald D. Brand, professor of anthropology at the University of New Mexico; Dr. Malcolm H. Bissell of the University of Southern California; and Stanley Milford of the School of American Research in Santa Fe; Eleanore Gardner from Alexandrofsk, Russia; and one of the tours sponsored by the Experiment in International Living made up of five German youths and their leader, Dr. F. Ventz, Friedrichshafen, Germany, eminent German geologist and principal of a high school in south Germany, and five American youths and their leader, F. M. Brown of the Colorado Biological Survey.

The Experiment in International Living is a new movement and its purpose is to promote world peace. The idea being that if the youth of different nations travel around together, live together, and get well acquainted, they will not feel like shooting each other.

A rare thing at El Morro in the way of travel was the first house trailer to enter the monument. It came from Fort Worth, Texas, and camped here a week before moving on.

Flora and Fauna

El Morro and the immediate vicinity has by far the best grass in this region. Here at the monument the grama grass has grown to six inches and over and is all heading out. One can travel two miles away in any direction and find that the grass has not yet grown two inches. We seem to have been blessed with more rain.

The piñon crop is general and looks to be the most promising in years. But the piñon jays are squawking across the mesas in larger flocks than ever before and are consuming piñons in enormous quantities. It is believed by some that the Biological Survey will have to kill these

EL MORRO (CONT.)

like they do coyotes and porcupines, if we expect to have any piñons in future years.

Last week while I was conducting the German party over the Rock, I was frightened by a loud disturbance on one of the ruins. Everybody began to shout in German and run about like a herd of goats. I hurried back to investigate and found no mountain lion but a horned lizard which Dr. Vantz had cornered in a pile of rocks! "A very rare animal in Germany," explained Dr. Vantz. I told him that he might take it back to Germany with him as a scientific specimen. The lizard was carefully carried back to camp and caged in a small box. I understand that horned lizards will live for some time without nourishment. Next month I hope that German students of zoology will be examining a horned lizard from New Mexico.

The following birds were observed at El Morro during August, 1936:

Golden Eagle	Louisiana Tanager
Chestnut-backed Bluebird	Rufous Hummingbird
Canyon Wren	House Finch
Cliff Swallow	Lewis Woodpecker
Northern Violet-green Swallow	Cooper Hawk
Western Mourning Dove	Arkansas Kingbird
Woodhouse Jay	Cassin Kingbird
Western Nighthawk	Pinyon Jay
Western Mockingbird	Western Meadowlark
Pigmy Nuthatch	Desert Sparrow Hawk
White-throated swifts	Red-shafted Flickers

Monument Improvements

I am glad to report that although the recent heavy rains washed the south trail in some places and washed out the road leading from the cabin down to the point of the Rock, the north trail held and carried all the run-off in fine shape. By digging out the drainage ditches after each rain I believe the trail will stay in good shape for some time.

The erosion control dams washed badly and at least five will need attention before winter.

The pool in the water cove has been full for three weeks, and I found it necessary to siphon water day and night for several days to keep the water from pouring over the top of the concrete dam.

CANYON DE CHELLY

By Robert R. Budlong, Custodian

At this writing the time of the Hopi Snake Dances is just about upon us, and roads in this vicinity are small seas of mud. In spite of the rains this month, however, visitor travel has been most satisfactory.

Total visitors for the month of August, 169. During the month of August, 1935, we had 135 visitors. Our visitors this month took trips as follows:

Rim trips, 31; persons, 127. Trail trip, 1; persons, 4. Horseback trips within the canyons, 6; persons, 23. Car trips within the canyons (wide-tired cars only) 6; persons, 16. Office visits, 7; persons, 36.

Time spent on these trips was as follows: Rim trips averaged 145 minutes each; trail trip, 270 minutes; horseback trips 365 minutes; car trips 135 minutes; office visits 133 minutes. There were seven "overlaps" -- that is, seven groups took more than one kind of trip. These were not counted twice, and our visitor count is based upon the actual number of visitors only, regardless of how many different trips they took while here.

Weather has been wet. Total rainfall during the month, 1.02 inches. Maximum temperature, 94, on the 14th, 15th, and 16th. Minimum temperature, 52, on the 10th. The canyons were totally impassable for cars equipped with ordinary tires during the entire month.

The custodian took a trip to Headquarters on official business the end of last month, leaving his official station here the afternoon of July 22, and returning here on the 27th.

Funds for the completion of water and sewer systems have been exhausted. The sewer system has had no work done on it since last month. The pumphouse, however, is now roofed over, the windows and doors put in place, and stonework carried to the roof level. The concrete roof slab has not been poured, but the forms are in place and covered with building paper, making the structure watertight. Minor repairs have been made to plumbing and water pipes on the outside of the custodian's residence.

Work on the White House Trail has commenced. Mr. Underhill, Park Service Road Oiling Expert, arrived here the night of August 12, in the middle of the first good rain we have had on the trail since its construction two years ago. While we have had minor rains on the trail, and hard rains near it, this was our first heavy rain on the trail itself. Water, draining a large area above the upper tunnel, poured down the tunnel onto the trail, and, the drainage on the trail being down its center, the dirt fills completely washed out in several places to depths of over three feet.

CANYON DE CHELLY (CONT.)

Now, however, under the able direction of Mr. Underhill and Mr. Gipe and his crew, much of this damage has been repaired. Drainage has been changed to be carried to the side of the trail, rather than down its center, some turn-outs have been put in, and some bitumuls surfacing has been done to stabilize the soft earth fills. This new work promises to withstand rains properly. The large area that formerly drained into the upper tunnel has been taken care of by the construction of dams and ditches, so that drainage from this area will now be diverted, and will not promptly dive through the tunnel onto the trail, as it formerly did.

And the rains are really with us. This, of course, is said to be due to the Hopi Snake Dances, now commencing. The canyons have received so much water that now even horses flounder in the quicksands, and all travel in the canyons has now ceased until the sands become more firm.

The ditches dug around the custodian's residence earlier in the year were judged to be inadequate to take care of cloudbursts, and since this possibility must be taken into consideration, a Navajo Indian with a 2-horse team, plow, and scraper, scraped a wide trench from eight to ten feet in width around the north, west, and south sides of the residence. The earth from the trench was piled up on the side next the residence to a height of over three feet. This should furnish adequate protection.

Minor repairs to the roof were made during the month, to stop a few leaks developing around the caprock. Some flagstones were laid in the patio, but much work yet remains to be done there. Drainage from the roof discharges through one of the canales into the patio, and since there is no adequate provision for conducting this water out of the patio, it is turned into a shallow swimming pool during heavy rains. Flagstones laid over part of this area will enable us to get to and from the garage during rains, but the work is slow, and other things constantly come up to hinder the work.

Ned Burns and Dale King visited us at the end of last month, departing the morning of the day the custodian left on his trip to Headquarters. Mrs. Denman, of San Francisco, was one of our noteworthy visitors during the month. Mr. Ted Sales and Mr. Ballin of Gila Pueblo paid us an all-too-brief visit. Mr. F. M. Brown, of the Colorado Biological Survey, led a party of eleven persons in here on the 18th, but finding the canyons impassable, and with the promise of rain any minute, they left shortly after their arrival. Six of these people were from Germany. Mr. Hamilton paid us a short visit early in the month.

But the Hopis must be meaning business, for now the sky has become heavily overcast once more, and it looks as though rain may start falling at any moment. I shall bring this to a close and drive to Chin Lee to mail it while the roads are still passable.

WHITE SANDS

By Tom Charles, Custodian

If taking care of visitors is the second biggest job in the Park Service, I'm wondering what the big job is. It seems to me that visitors overshadow everything else at the Great White Sands.

I've got that visitor business figured out to my own satisfaction. Not that I have acquired 100% efficiency but I've got the stride and am ready to train.

Some years ago when I was working my way through school, I built up paper routes and sold them, for a living. If I could get 40 to 50 satisfied subscribers on a route I could sell it for \$200 to \$300. I soon found that my mental attitude toward the subscriber had to be 100% in his favor. I believe that I held many a subscriber, not because the paper was what he wanted, but because I was kind to him and he responded and we built up a mutual feeling of friendliness.

I still have a little hangover of that feeling in my contacts with visitors at White Sands. I feel that every visitor to the Sands pays this particular unit for the Park Service a compliment, by the mere act of coming, and therefore pays a compliment to me. I start on the basis that he is a friend of mine, and with that start I have the right mental attitude. You may remember that in the good old days when called guards back, played 7 men behind the line and almost stripped them instead of a rousing them with 18 pounds of sole leather, they taught us that "mental attitude" is 25% of the game.

I'm old-fashioned enough to believe that it still is. If I start on my visitor with a feeling that he is a friend, that he has already paid me a high compliment, I am likely to smooth out many of the little wrinkles which we have to smooth out the first minute of the contact. If I haven't the visitor pretty well "in tow" the first minute, then it may be a long struggle. But it is my job, whether he is driving a Model T or a Packard, whether he is a college professor or full of fool questions. I have something to sell him. If I cannot sell it, when it doesn't cost him a cent, then I feel sure that there is something wrong with me. I am not satisfied with myself when a contacted visitor leaves the Sands dissatisfied.

It is not my job to convince him that the White Sands excels the Carlsbad Caverns or any other park or monument, but it is my job to present enough things of interest to convince him that it was worth his while to have come this way. There is something, somewhere between the buried mastodon, the giant tracks, the poppy field where the Apache Indians slaughtered a company of colored soldiers, the white mice and the white lizards, the formation of the Sands, themselves, the struggle of the living plants against the encroaching death from the drifting sand, that will interest every visitor.

WHITE SANDS (CONT.)

I am not a visitor specialist but I believe that this is sound and if it is not, then I want to know it.

Our outstanding event this month was the meeting at the Sands for the dedication of the completed highway between El Paso and Alamogordo, which is a part of the loop road from El Paso to the Sands and home by way of Las Cruces.

The meeting was sponsored by the Chambers of Commerce of the two towns and the civic organizations from Las Cruces, Tularosa, Mesalero, Ruidoso and Cloudcroft joining in. There were 210 cars at the picnic ground at 9 p.m; it is said that fully 300 cars had been there during the evening.

Among the distinguished visitors were Governor Tingley and wife, United States Senator Hatch and family, United States Senator Chaves and family, all of New Mexico; Congressman Thomason of Texas; Judge Joseph McGill; Adrian Pool, Collector of Customs; Captain Simons, manager of the Chamber of Commerce; H. S. Hunter, editor of the El Paso Times and 395 other El Pasoans.

As Senator Hatch stood in front of 1,000 people seated in the Crystal Bowl and under the soft light of the full moon, he said, "No place else in the world is there a scene like this"; United States Senator Chaves spoke in the highest praise of officers of the National Park Service from our Director down to the ranks and proclaimed them, "One of the finest groups in the employ of the Government." Governor Tingley said, "We have finished the road to El Paso, now the road past the White Sands comes next."

Besides the speaking in the Crystal Bowl there was music by a 36-piece, El Paso band; community singing, "Oh, Fair New Mexico", "The Eyes of Texas", "At Home on the Range"; Spanish dancing by an El Paso maiden; war dances by a group of the Old Geronimo Indians and \$100 worth of fireworks presented from the distant hills by the Alamogordo Chamber of Commerce.

There was nothing left to be desired from the custodian's viewpoint.

Our Sunday crowds have been as follows:

July 26 -----	840
August -----	2,621
" -----	1,155
" -----	742
Total	<u>5,358</u>

The registration has been nearly double any other month, so far. The total for the month has been 2,785 registered; from 39 states.

WHITE SANDS (CONT.)

Washington, D. C., and 5 foreign countries. Texas leads with 1,095, with less than 20% of the Texas cars being from El Paso, New Mexico had 424, Oklahoma 165, Kansas 55, California 53, Illinois 42, Louisiana 30, New York 22, Florida 12. On the basis of 14% registration we had 19,893 visitors from July 21 to August 20, inclusive.

NAVAJO

By John Wetherill, Custodian

People are coming in flocks. Only a small number are trail broken and the rest have not enough nerve to try the goat trail to the ruins. We would have had more than a thousand visitors this season if they could have gotten over what some people call a road. I do not care to take our car over it again.

I am sending with this some questions which have been asked by visitors to the ruins.

There have been quite a few Clogists of various kinds in lately, among them Dr. Loomis and Dr. Antevs. James Swinnerton and his wife are here now and expect to visit the ruins as soon as some of their friends arrive.

This is written in a hurry as we are all busy and cannot settle down to write. With best wishes to all.

GRAN QUIVIRA

By George L. Boundey, Custodian

Visitors for August total 729.

Our roads have been in excellent shape which I think accounts for our increased number of visitors.

We have had many visitors who were in Government employ during the month, several were with the Land Bank Division, several from the Department of Investigation, Department of the Interior. Two were WPA investigators checking up on care of public records. Mr. Borell of the Wildlife Division called in company with a gentleman from the Forestry Department. I took up the matter of tree diseases in some of the trees on the monument. Quite a number of both large and small trees seem to be dying. They start with a single limb turning yellow and this later seems to spread over the whole tree.

The principal crop of this locality is beans. Up to about a month ago we had every indication of a bumper crop, but lack of rain during the past two weeks has already cut the crop in half and everybody is

(GRAN QUIVIRA (CONT.))

praying for rain.

We cannot get a daily paper here and to keep in touch with the rest of the world, we purchased a Radio. It uses a battery which is kept charged by a wind charger and at our altitude wind is a plenty. The first night we got good contact with France, Italy, Germany, Mexico and several South American countries. Now when the Park Service has something on the air we intend to listen in.

Our trouble at the present time is rattlesnakes. Am going to ask the Boss to allow me to put a cement floor in the room we call the museum; it is the one covered room among the ruins and owing to its coolness the snakes have completely appropriated it.

A pine sliver gave our youngest boy a bad case of blood poisoning. I took him to the hospital in Albuquerque and it was during my absence that Mr. W. H. Wirt and H. B. McDougall of the Oklahoma City office, and Mr. W. Ward Yaeger of the Santa Fe office called at the Monument. We were very sorry to have missed them. The present condition of roads makes Albuquerque only three hours away and we have had many visitors from there during the month.

I neglected to say that Dr. Chas. W. Gould of Oklahoma City and Mr. Vincent W. Vandiver of the Santa Fe office, geologists, paid us a visit on July 21. They were much interested in a Porphyry Dike running across this country. One of the kivas in the plaza was dug out of the center of this dike. They wished me to trace it for them. So far have traced it about ten miles and it is heading for El Capitan in the Sacramento Mountains.

HEADQUARTERS STUFF

By Charlie R. Steen, Jr. Park Nat'l list

The Educational Staff of the Southwestern Monuments for July, 1936, was composed of Assistant Park Naturalist Robert H. Rose; Junior Naturalists Dale S. King and Charlie R. Steen; and ECW Student Technician Clarence R. Cole.

Rose was stationed at Berkeley, California, during the entire month. He is trying to dig some information regarding the early Spanish missions in New Mexico and Arizona from the publications in the Bancroft Library.

Junior Naturalist King was at Bandelier National Monument, with the exception of ten days sick leave, preparing museum exhibits until the 21st. On that date he started annual leave. King will enter Yale University in September for a year's study with the Park Service Fellowship.

BRANCH OF EDUCATION (CONT.)

Report of Student Technician Clarence R. Cole, BCW

Office Duty:

Completed re-covering Chiricahua informational leaflets.
Completed re-covering Tonto informational leaflets.
Mimeographed 2,000 Bandelier informational leaflets.
Washed glass on library bookcases.
Painted gathering rack.
Mimeographed 170 Monthly Reports.
Mimeographed 4,000 White Sands informational leaflets.
Unpacked and waxed two swivel office chairs.
Mimeographed covers for August Monthly Report.
Prepared "El Palacio" library list.
Prepared "Masterkey" library list.

Guide Duty:

Ruins trips: 21
Museum " : 20
Total Minutes: 641 (Ruins)
Total Minutes: 589 (Museum)
Average time Ruins Trips: 30.5 minutes.
Average time Museum Trips: 29.5 minutes.

Bird Banding

Due to the large amount of natural feed available to birds, banding operations were carried on at only one monument, Tumacacori. New birds banded by Caywood were:

Pyrrohuloxia -----	5	Canyon Towhee -----	4
Arizona Cardinal ---	4	House Finch -----	1
Cowbird -----	1	Mockingbird -----	2
Inca Dove -----	1	Lazuli Bunting -----	1
Palmer Thrasher ---	1	Total	20

Accessions and Gifts

Mr. Cecil Rodgers of Mesa has loaned a group of photographic plates exposed by his uncle between 1896 and 1901. These pictures are: of several missions, San Xavier, Tumacacori, San Ignacio and one other which hasn't been identified yet; the Casa Grande; photos of a Pima village north of Mesa.

Through the Pueblo Grande Museum two small archeological collections were donated to the monuments.

1. From Gingrey's Ranch in Black Canyon and donated by Mr. Witaker of Phoenix;
-fragment of a large basket

BRANCH OF EDUCATION (CONT.)

- Several small fragments of a coiled basket
- Sandal
- Wooden slab
- Piece of yucca fibre cord wrapped with sinew.

2. From a rock shelter in Arivaipa Canyon, donated by Mr. Hicks of Mesa:
- Two fragments of coiled baskets
 - One carved stick.

These artifacts will be stored at headquarters until facilities for storage or display are available at monuments to which they are pertinent.

The following books have been received and are now in the headquarters library,

- 531 - 47th Annual Report BAE 1932
- The Acoma Indians, by Leslie White
 - Isleta New Mexico, by Elsie Clews Parsons
 - Zuni Ceremonialism, by Ruth Bunzel
 - Zuni Origin Myths, by Ruth Bunzel
 - Zuni Ritual Poetry, by Ruth Bunzel
 - Zuni Katchinas, by Ruth Bunzel
- 532 - Experimental Studies of the Education of Children in a Museum of Science, Arthur W. Melton - Nita G. Feldman - Charles W. Mason
Publications of the American Association of Museums - New series
No. 15, Washington, D. C., 1936.
- 533 - The Material Culture of Pueblo II in the San Francisco Mountains, Arizona, by Katherine Bartlett - Museum of Northern Arizona, Bulletin 7, 1934.
- 534 - Ninth Annual Report of the Smithsonian Institution, 1855.
- American Explorations in 1853 and 1854.
 - The camel, by George P. Marsh.
 - On the nature and Cure of the Bite of Serpents, and the Wounds of Poisoned arrows, Dr. D. Brainard.
 - Diary of an Excursion to the Ruins of Abo, Quarra and Gran Quivira in New Mexico under the Command of Major J. H. Carlton, U.S.A.
 - Catalogue of the Berlandier Collection of Manuscripts.
- 535- Agriculture of the American Indians, a classified list of Annotated Historical References with an Introduction. Edition 2, by Everett E. Edwards - U. S. Department of Agriculture.

BRANCH OF EDUCATION (CONT.)

- 536 - Geology of the Monument Valley - Navajo Mountain Region, San Juan County, Utah. Geological Survey Bulletin 865.
- 537 - Correlation of the Jurassic Formations of Parts of Utah, Arizona, New Mexico and Colorado. Geological Survey Professional Paper 193.
- 538 - The Corner Tang Flint Artifacts of Texas, by J. T. Patterson, University of Texas, Anthropological Papers Vol. I No. 4.

Visitor Statistics

We had 40,942 visitors last month as nearly as we could count them and when you get to thinking about it, that is quite a crowd. It was an orderly crowd and we had practically no police difficulties.

It was also an eagerly interested crowd, taken as a whole, and there we fell down - we didn't have enough men to answer questions and give information. We made 51.2% contacts on the 40,942. Since, to make our figures compare with those of the Educational Division in the parks, we count a visitor who goes through the ruins and then goes through the museum as two contacts, these figures mean that we have actually met considerably less than the 51.2% of the 40,942 visitors we had. We regret this greatly for our ideal is to greet every visitor.

This month, with its 40,942 visitors shows a considerable increase over last month with its 30,110 visitors, and with it we have reached the high peak of the year; we will now drop back until we are handling between ten and fifteen thousand per month during the winter.

Fortunately for us, the peak of this monthly load fell heaviest on two monuments where it could do us the least harm; White Sands and Capulin. The visitor at these two places can do but little permanent damage, whereas such a visitor load simply walking through some of our areas would do some unavoidable damage. While these two monuments present rather minor police problems, it is greatly to be regretted that we cannot keep men in charge of them so the visitors might gain some much wanted information. About sixteen thousand visitors wondered how the white sands were formed and why and went away without being told any of the very interesting story. About four and a half thousand visitors did the same thing at Capulin in connection with that interesting volcanic cone. Don't you think these twenty thousand visitors last month, (nearly as many as will go to Mesa Verde this season) were entitled to the services of about three temporary rangers? I don't think that is asking for too much.

We ran 2,410 guided field trips last month as against 2,100 the previous month and we handled 13,737 visitors as against 11,011 the previous month. There were 1,173 museum trips with 7,049 visitors

BRANCH OF EDUCATION (CONT.)

compared with 1, 129 trips with 6,008 visitors the previous month. We had no extra men on duty so this means that the force carried just that much more load. The adjustment was made by a slight increase in the average party, from 5.2 to 5.7 on field trips and from 5.3 to 5.9 in the museum, and a slight decrease in the average time per party, from 41 to 39.1 minutes in the field trip and from 21.3 to 20.8 in the museum trips. In other words, the figures tell us that if you load more visitors on us without giving us more personnel, we will have to speed up the machine and put the visitors through in faster time and larger batches. This is all right up to a certain point and then your machine will begin to break down and you will be giving poor service.

Our ideal is to meet every visitor. If we could do this we would show 100% contact on the total travel at the monument if we handled the visitor once. If we take him on a field trip and a museum trip, we would show a 200% contact if we met every visitor.

Aztec, for instance, should show two contacts per visitor if our ideal could be obtained, or 200% contacts on the total travel for the month. It really shows 197.2% contact which is coming pretty close to the ideal.

Casa Grande shows 198.4% which is probably about as high as we can expect to attain at that monument.

Aztec and Casa Grande make a nice comparison in this regard because both are on level ground, have about the same distance of walking through ruins and museums of about the same size.

If we want to study visitors under more difficult conditions of contacts, let us take Montezuma Castle and Tonto, where visitors must put forth considerable effort to see the ruins but can easily enter the museum..

We find Montezuma has 159.2% contact and Tonto has 146.9%. Neither of these monuments could be expected to run as high as the two above mentioned, because many of the visitors will be physically unable to make the ruins trip. Comparing the museum contacts, on which the ideal would be 100%, we find Aztec stands 97.2%, Casa Grande stands 99.7%, Montezuma Castle, 91.8% and Tonto, 84.2%.

Incidentally, we might say that Casa Grande has not consistently run such a high percentage of visitor contacts nor can we hardly expect it to do so well in the winter months when it is at its peak and the place is undermanned. For instance, beginning last October, which is the beginning of the visitor year, and on the basis of 200% being the ideal, we have the following percentages, month by month; October, 139%; November, 136%; December, 81%; January, 142%; February, 179%; March, 174%; April, 157%; May, 133%; June, 183%; July 191%, and Aug., 198%.

STATISTICAL SUMMARY ON EDUCATIONAL CONTACTS FOR AUGUST, 1936

Southwestern National Monuments

Monuments	No. Employ		Guided Trips					Museum Lectures				Museum Unattend		Outside Lecture		Total Contact	Total Travel	Percent of Contacts	
	Per	Tem	No.	Att.	Time	Av. Att.	Av. Tm.	No.	Att.	Tm.	Av. Att.	Av. Tm.	No.	Att.	No.				Att.
Arches-----	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aztec-----	1	1	323	2658	12690	8.2	39.2	2585	4785	9.7	16.2	4	36	-	-	5243	3058	197.2	
Bandelier---		4	236	1928	16832	8.1	11.5	-	-	-	-	-	-	-	-	1928	3180	60.6	
De Chelly---	1		18	89	4560	3.8	25.3	-	-	-	-	-	-	-	-	69	169	40.8	
Capulin---	P		2	36	120	18	60	-	-	-	-	-	-	-	-	36	4500	1.5	
Casa Grande	1	1	270	1468	8558	5.4	11.7	239	1483	5959	6.2	24.9	-	-	-	2951	1487	198.4	
Chaco-----	1	1	105	619	6930	5.9	66.80	487	1685	6.8	21.	-	-	-	-	1108	1272	86.9	
Chiricahua -	1	2	34	223	4185	6.5	105	-	-	-	-	-	-	-	-	223	908	24.6	
El Moro-----		1	78	408	5094	5.2	65	-	-	-	-	-	-	-	-	408	470	86.8	
Gila Cliff--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gran Quivir-	1		141	730	8305	5.1	58.9	-	-	-	-	-	-	-	-	730	730	100	
Hovenweep---	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Montezuma---	1	1	175	1064	8405	6	48	239	1449	5355	6	22.4	-	-	-	2513	1578	159.2	
Nat. Bridges		1	12	72	1280	1	106	-	-	-	-	-	-	-	2	212	284	72	
Navajo-----	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pipe Spring-	1		22	85	585	3.9	26	-	-	-	-	-	-	-	-	85	105	80.9	
Rainbow-----	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sequoia-----	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sunset-----	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1231	-	
Tonto-----		1	50	203	3645	4.0	72.6	5	273	1410	2	21.5	-	-	-	476	324	1469	
Tumacacori--	1	1	177	912	5005	5.1	28.2	-	-	-	-	-	-	-	-	912	1037	87.9	
Walnut-----		1	186	890	4005	4.7	21.5	261	772	5310	2.9	20.3	-	-	-	1662	2034	81.7	
White Sands-	P		543	2181	2183	3.9	3.9	-	-	-	-	-	-	-	-	2181	18,753	11.6	
Wupatki-----		1	38	189	1904	5	50min.	-	-	-	-	-	-	-	-	-	-	-	
Yucca House-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Headquarter-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total-this mo			2410	13735	94286	5.7	39.2	178	7049	24504	59	20.8		2	212	20996	40942	51.2	
Total-last mo			2100	11011	86236	5.2	41	1199	6008	24136	53	21.3	10			17019	30,110	56.5	

Note: Bandelier and Chiricahua each has 2 CCC men, included in no. of temporaries.

VISITOR STATISTICS CHART

August

No. Service

July

30110

June

25938

May

22833

April 19830

March 15379

Feb. 13859

Jan. 14044

Oct. 12608

Nov. 11309

Dec. 8525

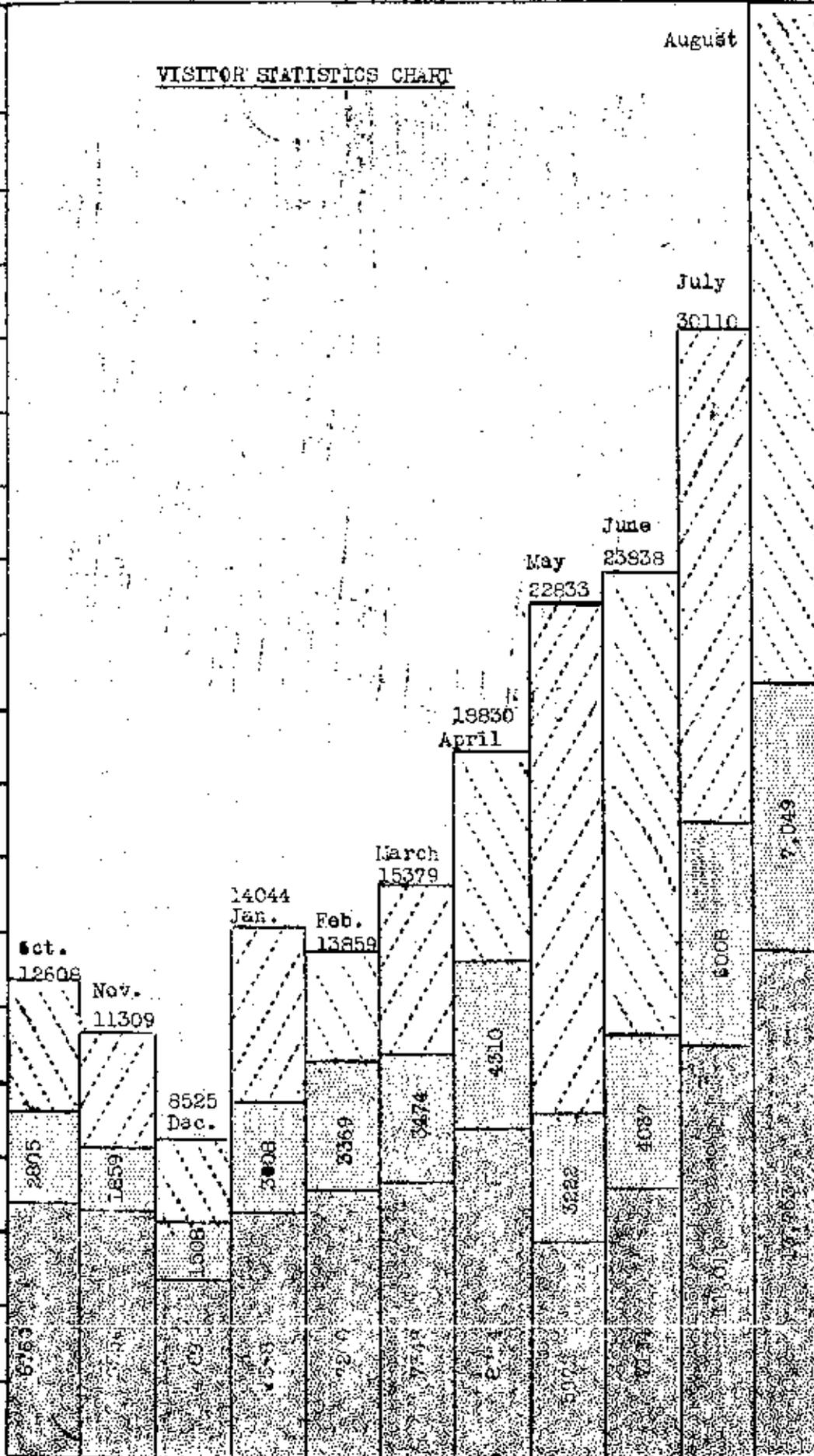
MUS.

Field

30,000

20,000

10,000



BRANCH OF EDUCATION (CONT.)

Casa Grande, being the laboratory monument where we try out funny ideas, is the first one at which we have made this visitor contact percentage study, but we expect to look over the others one at a time, since this one has proved so interesting. There may be some argument about whether we should strive to hold visitors a little longer in our field and museum trips - at least there has been quite a lot of argument on that point among members of the Staff - but I have yet to hear anyone argue that we ought not to meet every visitor if that were possible, or, if that is impossible, the more we meet, the better we are fulfilling our duties toward the visitor.

CLOSING

It has been a pretty good month, Chief, as you will have seen from the reports from the men in the field. The weather has been seasonable, the roads have been fair, except those up in the Indian Country which have been bad part of the time and not very good the remainder of the month.

From the visitor standpoint it was the peak month of the year with forty thousand of them coming in on us. It is too bad we could give them almost no service where they struck us hardest, White Sands and Capulin, and at some of the other places the service was pretty badly stretched. Aztec is a case in point, where two men handled 2,658 visitors through the ruins and museum and made 197.2% contact out of a possible 200%. In some places handling that many visitors would not be much of a chore because they would be handled by the hundred, or, as Tom Bies has them, a thousand at a time. But at Aztec the average party was made up of 8.2 people for the ruins and 8.7 people for the museum. That means almost individual service because every visitor can get his every question answered and the guide can adapt his talk to the particular interests of the persons in his party and not have to give a short of "shot gun" talk and hope that every one got a little of it. These visitors at Aztec last month spent 39.2 minutes in the ruins and 16.2 minutes in the museum, so they were with us long enough to really get some good out of the trip. Next year the figures are telling us we will need a peak load temporary at Aztec if the good times keep growing and more visitors take to the road.

The heaviest job of the month seems to have again fallen at Walnut Canyon. One has to go a little behind the figures to see this. Paul made 1,662 contacts while Tom, over at White Sands made 2,181. The difference is that Tom had a lot of parties but talked less than four minutes per party while Paul averaged 21.5 minutes per party on his field trips and 20.3 minutes per party in what we call his museum. You might think that since Aztec had 5,243 contacts with two men whereas Walnut with one man had 1,662 contacts with one man, the Aztec

CLOSING (CONT.)

boys would win the prize. The difference comes in the size of the parties. The two men at Aztec really put in 17,475 minutes at guiding, or an average of 8,737 minutes each. The Walnut Canyon man put in 9,315 minutes; he therefore wins by a nice margin.

The figures at Walnut Canyon are simply crying out the need of one permanent man and a temporary man through the heavy season. The argument is sometimes raised that the Walnut Canyon ruins are not very important, at least from the archeological standpoint, why, therefore, do we need two men? My theory is that if the people go there, as they do, and want to know who? and when? and why?, as they do, it is our duty to have enough men there to tell them. One of the gentlemen of the Budget once agreed to that conclusion by saying about one of our reservations: "I grant your argument as being sound. Personally I wouldn't cross the road to see the place but if a hundred thousand blundering fools want to go there to see it, we will have to furnish them some accommodations."

These visitor statistics we are getting together, faulty as they are, and no one claims perfection for them, are proving mighty interesting and are not so easily laughed off when they prove the need of more personnel as in the case just pointed out.

It is very strange to me that, with all these specialists we have going hither and thither and yon, no one has thought of putting on a specialist who can come around and study these problems and show the Washington Office by the tabulated results of such investigations where, under the laws of mathematics, the personnel and the funds are being stretched to the breaking point and where they are being wasted. We note in our ECW camps, for instance that if we have a couple of caterpillars standing idle for thirty or sixty days a specialist spots them and takes them away from us and puts them to work in another camp where they are needed. Of course it would not be quite as easy to shift personnel and funds as it is to shift equipment, but the principle is sound and a technique could be worked out to attain somewhat the same results. We are really doing that within our own unit, but there seems to be no specialist who can do it between the different units of the Service.

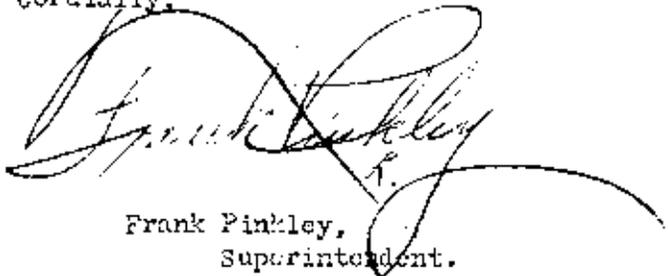
Out of the forty thousand visitors last month we have thus far had one complaint. That isn't a very high percentage but we are going into it thoroughly and will render a special report on it. The complaint runs to the effect that a visitor reached one of our one-man monuments after five o'clock and was refused service on the basis, apparently, that the eight-hour shift was over and the man was off duty for the day. I thought all our men on the one-man jobs understood that they were there to deliver service and that there would be plenty of times when they would be overworked but that was a part of the job they were taking and they were to take it on the chin with a smile. Custodians, rangers and

CLOSING (CONT.)

guides on one-man posts have no eight-hour shifts. On the two-man posts we try to arrange an eight-hour shift, but, as the late Mr. Hamlet once observed: "It is more honored in the breach than in the observance."

The office force has done about the usual amount of overtime work this month. We have been trying our best, in our feeble way, to fill the vacant Chief Clerk position since July 1; thus far the papers have not come through. When we have a vacant job we need the man so badly that such delays get us in quite a dither. All office work is, by the grace of God, current.

Cordially,

A large, elegant handwritten signature in cursive script, reading "Frank Pinkley". The signature is written in dark ink and features a prominent, sweeping flourish that extends to the right and then loops back under the name.

Frank Pinkley,
Superintendent.

THE Supplement

S.M. MONTHLY REPORT

TUMACACORI ALCOVES OR TRANSEPTS

By J. H. Towrea
and Frank Pinkley.

For many years we puzzled over certain non-bonded wall joints in the nave of the Tumacacori church. It might be well to put the problem down here and let others see if they can add to our information or develop any new theories.

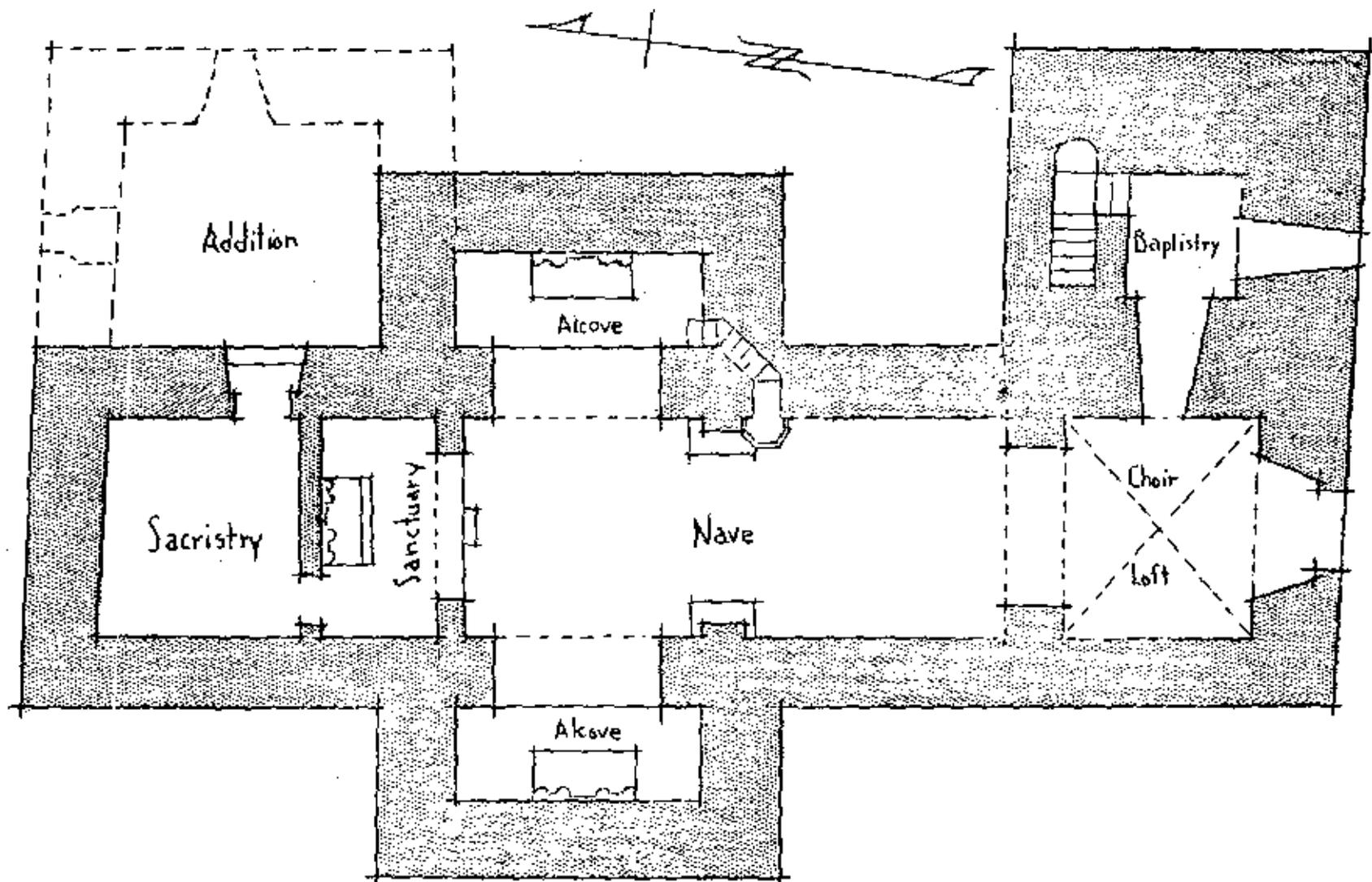
Tumacacori was abandoned about a century ago. The beamed roof of the nave fell into ruin, partly due to vandalism and partly due to weathering. The interior walls of the nave were thus left open to the elements for several generations and the interior plaster broke away in large patches revealing the construction of the wall.

Not quite half way down the length of the nave from the entrance doorway are two pilasters, one against each wall, running the full height of the nave. Just in front of these pilasters some three feet the plaster being broken away exposes an unbonded joint in the wall which runs up about seven feet from the floor before the adobe bricks begin to bond across. About twelve feet farther along the walls we find another of these unbonded joints in each wall running to the same height before the adobes begin to bond across.

As we walk up the nave from the entrance doorway, just before we come to the pilaster on the right, the broken plaster shows, at a point several feet above the floor of the church, what appears to have been an entrance, window, or opening of some kind into the wall, which has afterward been filled with adobe bricks. Only the bottom of this supposed entrance or opening is visible, the plaster just above still clinging to the wall and preventing one from seeing whether or not the top of the opening might have had a wooden header or adobe arch.

The above were all the facts we had for some years and upon them we built many theories. One of the best of these theories was that the Padres had designed this church to have a cruciform plan; that the unbonded lines in the adobe walls marked the width of the openings into the transepts and that the opening or entrance in front of and near the east pilaster was the opening into the pulpit. We presumed that something had happened to make a change in the plan; that after the walls had been built some six or eight feet high the idea of constructing transepts was abandoned; that the workmen were ordered to fill up the transept openings and brick up the entry way which they had partly constructed leading from the east transept up through the wall into the pulpit which would have stood in the nave of the church.

This theory, given above, would account for the non-bonded joints in the walls of the nave and for the making of the so-called "pulpit entrance" which was then filled up and plastered over. It would also account for



To v

POSSIBLE PLAN-EARLY TUMACACORI

the bonding over of the adobes above the joints in the walls. The whole thing was just a change of plan while the church walls were under construction.

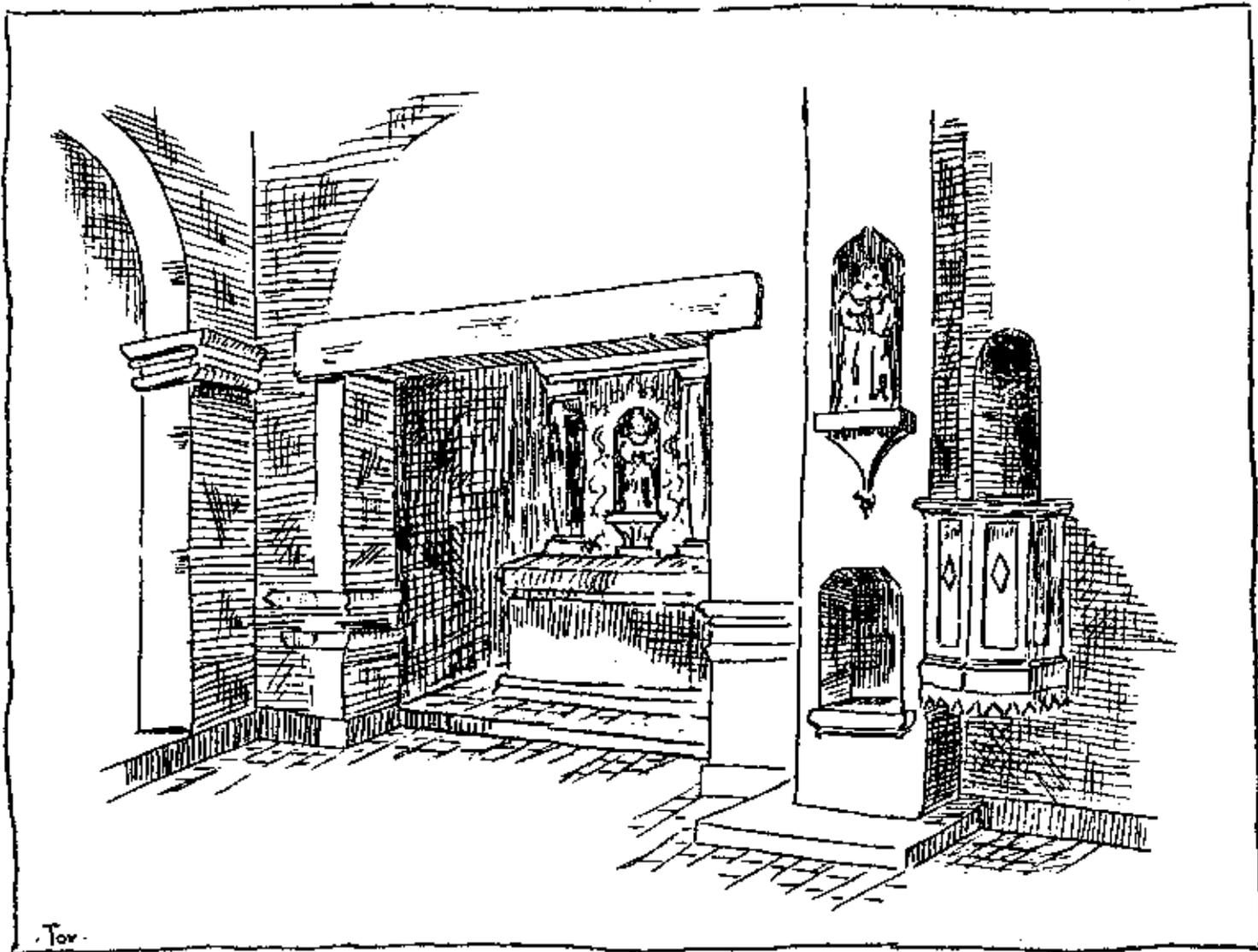
One time when Mr. George L. Bounzey was Custodian of the Tumacacori National Monument, in doing some clean-up work and re-grading along the west side of the mission, he exposed the foundation of the supposed west transept. He opened it up and we looked it over and he then closed it up again.

One startling thing about this foundation, which developed in this examination, was that there were a few inches of the original wall still standing above the rock foundation and these few inches of the adobe wall CARRIED THE ORIGINAL STUCCO PLASTER WITH THE CHARACTERISTIC RED AND BLACK DECORATION SUCH AS THE WHOLE LOWER SECTION OF THE CHURCH ONCE CARRIED.

It does not appear reasonable to us that they would put the plaster on the inside or the stucco on the outside of a partly built wall. As we view it, then, the importance of this bit of stucco on the outside of this wall was to prove beyond reasonable doubt that this transept or alcove had once been completed; in other words our theory of a change of plan during construction and an abandonment of this part of the structure before it was completed would not fit this fact of the stuccoed exterior face of the wall.

The study of a sister mission across the border, San Ignacio de Caberica, shows a plan somewhat similar to Tumacacori with two alcoves opening off the nave. The walls of these alcoves do not extend as high as the church walls and the alcoves have flat roofs. The east alcove has a pulpit entrance starting upward from the floor of the alcove, turning to the right and coming up through the wall of the nave, opening into the pulpit several feet above the floor of the church. Here we have in actual use precisely the same arrangement which we thought had been in effect at Tumacacori. The alcoves at San Ignacio each have an altar at the back and we think the same arrangement would have been effected at Tumacacori.

We are now of the opinion that these two alcoves or transepts at Tumacacori were at one time completed and in use; that in a later reconstruction period the walls of the nave at these points were torn down to a point some eight feet above the ground, the alcove or transept walls were removed down to ground level, the former entrance opening into the alcoves or transepts were bricked up and the walls of the nave were then carried back up to roof height. This would also entail closing up the pulpit entrance and the present pulpit entrance was then cut through farther along toward the rear of the church. It is also possible that the present sacristy was constructed at the time of this reconstruction and the present arch erected between the nave and the sanctuary, but these are problems which are outside the scope of this paper and will be treated later.



· TUMACACORI · ALCOVE ·

As the facts now stand it seems probable to us that the nave walls of the present church might have been built before 1760. At that time these alcoves or transepts were complete and were in use. We have some reports of the church being attacked and at least partially destroyed by the Apaches in the 1760's and at this time the roofs of the nave and these transepts or alcoves were probably destroyed by fire and the walls left open to the elements. Nothing seems to have been done until 1781 when we have a notation that the church had been rebuilt or restored and was again in use. We think it is entirely probable that it was in this reconstruction of 1781 the decision was made to abandon these side structures, because of their ruinous condition, possibly because the fire had destroyed the lintel beams which may have carried the walls across the openings, or because they had been too badly desecrated to be used again, and so the present arrangement of the interior of the church dates from about 1781.

Attention should be called, at this point, to the fact that the four large altars in the nave of the present church are not bonded into the nave walls. The plaster of the nave walls runs unbroken behind the altars. Now, since the extensive reconstruction as set out above would probably entail a replastering of the interior walls of the nave, we might suppose the present altars in the nave to date from 1781 or later.

This would fit well into our theory for with the high altar in the sanctuary and the two side altars in the alcoves or transepts, no others would be needed, whereas, upon the abandonment of the alcoves or transepts the Padre might decide to relieve the plainness of the nave by introducing the present altars.

We present this study of the problem of the alcoves at Tumacacori for better heads than ours to puzzle over and to point out to the research men who are now working over the ancient records the need of looking carefully through all the reports around 1781 to see if any documentary evidence can be found which will corroborate these guesses of ours as to a reconstruction and if there was one just how extensive it was.

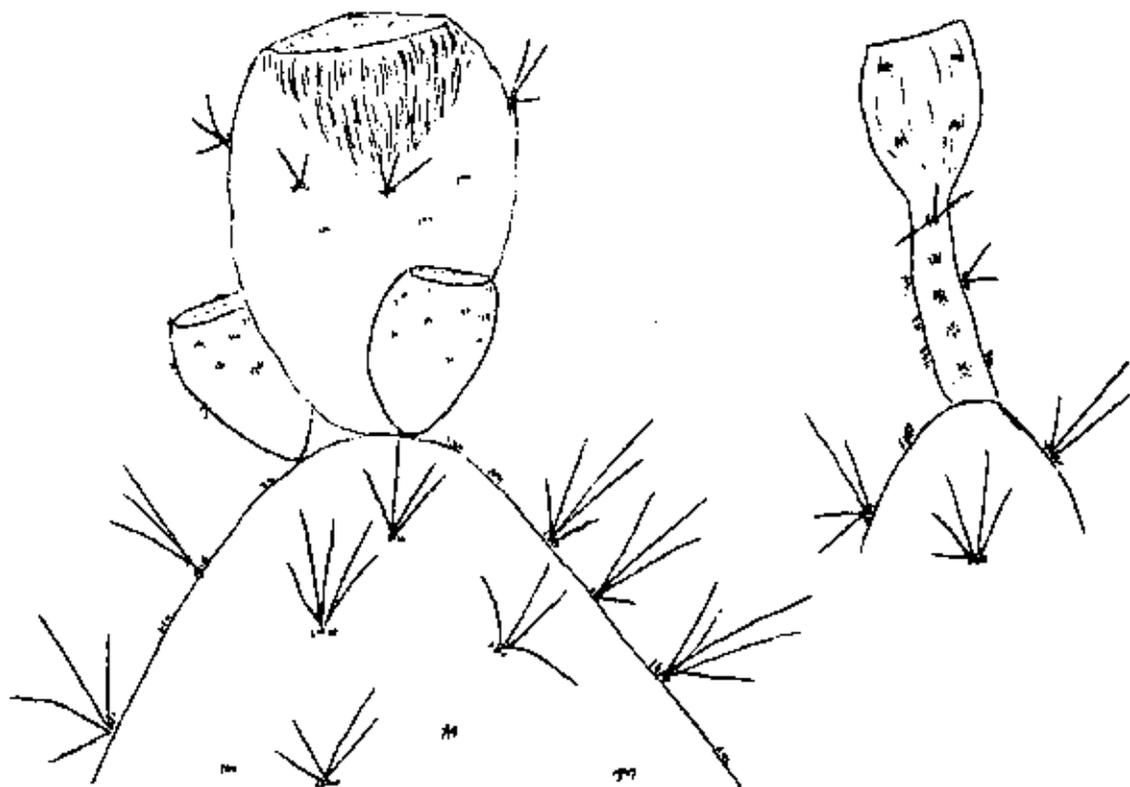
PECULIAR GROWTH OF CACTUS

by Charlie R. Steen

A large prickly pear, *Opuntia engelmanni*, which grows just in front of the Casa Grande Museum has offered two peculiar growths during the current growing season.

In May, while the plant was putting forth new pads, a flower budded and blossomed from one of the new appendages. At the time the flower appeared the joint was no more than two inches and a half in length. The blossom apparently had no ovary and after it had wilted and fallen only a scar was left on top of the joint to indicate what had happened, and the incident was almost forgotten.

The joint continued to grow until it's length had increased to four inches and a quarter. In July, at the time the normal ovaries were showing signs of ripening, a swelling at the top of the new pad was noticed; this swelling began to take on a purplish tint, just as the fruits of the plant. At present this peculiar looking 'fruit' has a color almost as deep as that of it's more conservative brethren, and



FULL FACE AND PROFILE DRAWINGS OF JOINT

Peculiar Growth of Cactus, Cont'd.

has split to expose a very dry interior. The seeds are white, in contrast to the brown seeds of a normal fruit. The production of such an anomaly has proved too much of a strain for the young pad. It's strength has been sapped and since about August 15th it has started to wither and fade.

The other peculiar growth noted on this cactus was an exact opposite of the one just described. A small joint started growing from the flat upper surface of an immature ovary. The pad never reached the stage where it's leaves were formed into spines. During June both ovary and new joint gave up the ghost and fell from the plant.

CARLETON'S DIARY - 1853

DIARY

Of an excursion to the ruins of Abo, Quarra, and Gran Quivira, in New Mexico, under the command of

MAJOR JAMES HENRY CARLETON, U. S. A.

Wednesday, December 14, 1853.

A squadron of cavalry, formed of company "H", first dragoons, commanded by First Lieutenant Samuel D. Sturgis, and company "K", first dragoons, commanded by Brevet Major James Henry Carleton, in all one hundred strong, with one 12-pounder mountain howitzer, left Albuquerque, at eleven o'clock this morning, as an expedition to explore the country around the ruins of Gran Quivira, New Mexico, and for other objects connected with the bands of Apache Indians who often infest that portion of the territory.

Our route, for the forty miles, lies down the left bank of the Rio Grande. This part of the country has often been described. Its principal features are easily named. The Rio Grande, at this point, averages about one hundred yards in width, and not more than eighteen inches in depth. Its waters are turbid, like those of the Kansas. Its bottom and banks are composed of sand. The valley along the river is very level, and usually not over two feet higher than the surface of the water. In some places it is more than two solid miles broad. It has a great deal of sand mixed with the soil; but it is remarkably fertile. From this valley a second bottom, or table-land extends, by a gradual ascent, back to the mountains on either hand. This table-land is destitute of water and uncommonly sterile. The lower level, which skirts the river, and which is irrigated from it, is the source of nearly all the agricultural wealth of New Mexico.

DIARY OF MAJOR CARLETON

A storm of rain which came on yesterday continued, almost without intermission, for the whole of last night and until late this forenoon; the roads are, therefore, very muddy. In consequence of the heaviness of the travelling, the squadron was encamped near the residence of an American gentleman, named Baird, seven miles 694 yards below Albuquerque. Here we are able to obtain wood and hay; but we are obliged to send across the Rio Grande to purchase corn.

Thursday, December 15, 1853.

About four o'clock this morning it commenced snowing, with a piercing wind from the north. Our poor horses, exposed to the inclemency of the storm, were soon chilled and trembling with the cold. By eight o'clock the weather began to moderate; but we had snow-squalls, from different points of the compass, for the whole forenoon. Before we reached a little hamlet, called Valencia, fourteen miles 265 yards from our camp of yesterday, we encountered a shower of rain and sleet. As in this place we could get two corrals, wherein our horses could be partially sheltered, it was decided that we should encamp here for the night. The weather seems singularly unpropitious for an expedition. It is said to be quite unusual to have these storms in New Mexico at this season of the year. Tonight, however, at nine o'clock, the clouds have all left the heavens, and we have promise of a fair day tomorrow.

Three Mexican citizens of respectability, a Mr. Chavis and two of his sons-in-law, came to our camp this evening, and informed Major Carleton that it was their intention to establish a colony of settlers at a point east of a range of mountains known as the Sierra Blanca, and along some streams affluent to the Pecos, called the Seven Rivers; that they proposed going with this command as far as Gran Quivira; and that from that point to the Seven Rivers they desired to be furnished with an escort of dragoons. They were informed that Brevet Lieutenant Colonel Chandler, of the army, was about to proceed from near Doña Ana, with three companies, directly to the country in the neighborhood of the Seven Rivers, and, if they wished to do so, they could have the advantage of his protection. Mr. Chavis concluded to go by the way of Gran Quivira, at all hazards; and to proceed across the country, from that point, even without an escort. The truth doubtless is, the old gentleman fancies that the purpose for which this squadron is going into that country is to search for a great amount of treasures which are said to be buried beneath the ruins there, and he hopes he may be able to obtain a share of them.

Friday, December 16, 1853.

The weather became very cold last night; all the ponds of water extending up and down the valley are frozen over, and the ground is hard and resounds loudly at the tread of the column. The sand-bars along the river seem to be covered with geese, ducks, and brant, which

DIARY OF MAJOR CARLETON (CONT.)

have been driven by the ice from the lagoons and sloughs. They are so tame they hardly fly at our approach.

We arrived at a little town, called Casa Colorado, about four o'clock this afternoon. This place is thirty-nine 537 yards from Albuquerque. Here our road leaves the river for the mountains toward the point east. As it will take two days to march to Manzana, the next and last point where we can procure any corn, we are encamped for the night; and shall here buy, and haul in our wagons tomorrow, the forage our animals will require to that town.

The citizens of Casa Colorado gave a ball this evening in honor of our coming. The sudden arrival amongst them of so many armed men is a matter of great astonishment.

The result of our observations, as regards the general appearance of the inhabitants of the country, made during these first forty miles of our march, may be stated in a few words. The dirty little villages through which we have passed, as well as those we have seen in the distance, have generally turned out their inhabitants en masse to get a sight at us. This gave us a sight at them. Had we been painters it would doubtless have been an interesting one; for men, women, children-motley assemblages-exhibited themselves to us in groups picturesque, as well as in crowds grotesque. Some blanketed, with sombreros and cigaritos; some with whitewashed and some with scarlet-dyed faces, some with rebosos, some nearly naked, some on house-tops shading their eyes with their hands, and some peering through chinks and crannies in the mud walls of their dwellings; but all curious as to whence we came and whither we were going. The national expression of *Quien sabe* appeared deeply written on every face. In no rancho or village have we seen a solitary indication of industry, cleanliness, or thrift since we left Albuquerque; and it may be remarked, parenthetically, that we have yet to see, in that town, the first evidence of these cardinal virtues. Indolence, squalid poverty, filth, and utter ignorance of everything beyond their corn-fields and acequias, seem to particularly characterize the inhabitants who are settled along the east bank of the river. We have seen nothing denoting energy on the part of any one, save that shown by the old man Chavis and his two sons-in-law. On the contrary, we could but observe amongst them what seemed to be a universal proclivity for rags, dirt, and filthiness, in all things; with sheer laziness and listlessness marking their every movement and all that they do. It may be said that the people whom we saw were of the lower order; but we were justified in coming to that conclusion from not seeing any of the better class.

Saturday, December 17, 1853.

We started this morning at eight o'clock. For about two miles our road lay up a gradually inclined plane, where we found ourselves on an almost level mesa that stretched uninterruptedly, eastward to the base

MAJOR CARLETON'S DIARY (CONT.)

of these mountains which commence at the Sandia Peak and extend towards the south below El Paso del Norte.

This plain is sandy and entirely destitute of water. We saw several herds of cattle grazing upon it; but, so far as we could observe, there was very scanty pasture. Our guide, a Mexican, informed us that these herds are driven to the Rio Grande for water only once in two days. We saw but a solitary flock of antelopes, numbering some ten or twelve. This was midway between the river and the mountains.

The scenery, viewed from elevated points on this plain, was very beautiful. The Socorro and the Cibola ranges of mountains, and the distant peaks of others toward the north, were covered with snow, and gleaned in the sun with dazzling splendor. The long Sierras towards which we were now moving were also clothed in a winter-robe of white. They bounded the whole eastern horizon. Their tall summits and jagged outline, like a fringed edge, standing sharp and clearly defined against the morning sky, glowed in the light as if burnished with silver. While towards us, along their whole western slope - which descended toward the plain as a coast towards the ocean - the valleys and precipices reposed in cold blue shadows, chilly enough to make the beholder shudder in looking upon them.

Just before arriving at the foot of these mountains, we found a pond of water four hundred yards to the right of the road. Our guide informed us that in the dry season no water can be obtained at this place.

There are here two passes through the mountains; the one on the left hand going eastward, leading through a difficult canyon, is practicable only as a bridle path; the one on the right hand affords every natural facility for making a most excellent road for wagons.

These passes are known, in the language of the country, as Los Puertos de Abo. The summit of the right hand pass is nineteen miles and sixty-three yards from Casa Colorada, and lies east 20° south from that town. The road for this whole distance is by far the finest we had seen in New Mexico, and is not surpassed, in any point of excellence, by the celebrated shellroad at New Orleans.

The first outcropping of stone which we observed as we approached the mountains was of quartz, trap, and greenstone. These are surmounted by numerous strata of fossiliferous limestone, of good quality. These strata in some places are hundreds of feet in thickness. This latter formation prevails exclusively at the summit of the pass.

There is no timber of any kind to be met with until you come near the top of the mountains; the growth there is entirely of dwarfish piñon and stunted cedar.

DIARY OF MAJOR CARLETON (CONT.)

We encountered snow half way up the pass. The scene presented by the column winding its circuitous route to the summit, with parts of it lost to view behind some jutting crag, or just emerging into sight from some deep gorge - the foreground filled with the dragoons moving upon different turns of the road, the sun glancing brightly on their appointments, - the towering snow-clad peaks on either hand the background the valley of the Rio Grande, with the distant mountains in the northwest marking with a serrated line the far off horizon - was a picture whose beauty will not easily be forgotten.

The general direction of the chain of mountains stretching northward of the pass toward Sandia Peak is north 10° west. The first elevated peaks southward of Sandia are called La Tetilla; the next La Sierra de la Manzana; then come Los Puertos de Abo; and then the high range still farther south which is known as La Sierra del Palo Duro.

From the summit of the pass for the first two or three miles the road is very circuitous. It then has an easy gradual descent for about three miles further, when you come to a deep canyon which lies entirely to the left, but in sight of the road, and at a distance from it of six or eight hundred yards. There, in the canyon, good sweet water is always found. This place is called Agua de Juan Lujan. Near this, but a few hundred yards further east, we passed a large spring of salt water. It is known by the Mexicans who travel the road as La Salada. Passing this, we next encountered, for some three or four miles, masses of dark chocolate-colored sandstone, through which we wound our way to a point where the roads forked. We took that which leads to the left hand. In less than half a mile, our road lying up the dry bed of a wet-weather creek, we came to a fine streamlet of fresh water. This was fringed by a beautiful grove of cottonwood. At the distance of four hundred yards, after we struck the water, we came to the Ruins of Abo. Here we are encamped for the night.

At this time, when so many surveys are making from different points along the Mississippi toward the Pacific, with a view of ascertaining the best route for a railroad track, perhaps the suggestion may be of value that the Pass of Abo offers advantages in this respect which may not be found in any of the other passes through these mountains. They are certainly of sufficient consideration to make it an object to have this pass thoroughly explored before others shall be adopted. By directing the route from Anton Chico, on the Pecos river, immediately past the Ruins of Abo, and thence through the canyon by which the bridle-path lies that has already been spoken of, the open plain in the great valley of the Rio Grande can be reached without tunnelling a rod, and with no more difficulty as to the blasting of rocks and grading down to acclivities, than has been encountered on any of the ordinary railroads in the United States. Let the road be directed across the plain so as to pass the Rio Grande at the mouth of the Puerco River, thence up the valley of that river to its west branch, and up the valley of that branch to Laguna;

thence to Zuni, and from that point by the route which the indefatigable Whipple will without a doubt find, to the shores of the Pacific. These suggestions may possibly be of practical utility to those who are engaged in by far the greatest enterprise of modern times.

The Ruins of Abo consist of a large church, and the vestiges of many other buildings, which are now but little else than long heaps of stones, with here and there portions of walls projecting above the surrounding rubbish. There is yet standing enough of the church to give one a knowledge of the form and magnitude of the building when in its prime. The ground plan of this structure is in the form of a cross, its longitudinal direction being within ten degrees of the magnetic meridian. It was, perhaps, situated exactly upon that meridian when the building was erected--the variation of the compass accounting for the present difference. The great entrance was in the southern end. From thence to the head of the cross, where the altar was doubtless situated, it is one hundred and thirty-two feet, inside. This, the nave of the church, is thirty-two feet in width. The short arm of the cross, or what in cathedrals is called the transept is forty-one feet in length and twenty-three in breadth. The transept is sixty-six feet from the doorway. These measurements were made with a tape-line in a very high wind. The round numbers in feet are, therefore, only given, without noting the fractional parts of a foot.

The walls are of a great thickness, and their height is, at this day, in over half the structure, all of fifty feet. The upper edge of these walls is cut into battlements. The church, as well as the neighboring buildings now in ruins about it, was built of a stratified, dark red sandstone, such as crops out along the creek and makes its appearance on the sides of the surrounding hills. The pieces of stone do not average over two and a half inches in thickness, and are not generally over one foot in length. Each piece is of the form it had when it was broken from its native bed. We saw not a single dressed stone about the ruins. These stones are laid in mortar made of the ordinary soil from the ground immediately at hand. The roof of the church was evidently supported by beams and covered with earth, as in the churches still occupied at places of worship throughout New Mexico. We saw no signs of an arch, nor an indication that those who planned and built the church at Abo were at all acquainted with architecture as a science. The walls over the doors and windows, so far as we could observe, had been supported by beams of wood. When these had become destroyed, those stones which were liberated above had dropped down; so that now, over each window there is a rude sort of Gothic arch, owing its form, not to design, but to accident. The wood-work of the church was evidently destroyed by being burnt. Wherever in the walls portions of beams still remain they are found charred and blackened by fire.

The form of the church alone, proves it to have been designed by Christians. Perhaps the workmen employed in its construction were Indians.

DIARY OF MAJOR CARLETON (CONT.)

We saw a distinct mark on an axe in one of the pieces of timber, which is imbedded in the east wall of the church some six feet from the ground. Saws also were doubtless used, but we discovered no marks of them. The stick of timber marked with the axe, and some beams that supported a landing at the head of the stairway which is made in the west wall, were the only pieces of wood about the ruins which were not burned so much over their surface as to obliterate all marks of tools.

The extent of the exterior wall, which, from the appearance of the present heaps of stones, once surrounded the church and the town, was about nine hundred and forty-two feet north and south, with an average width east and west, of say four hundred and fifty feet. A large population must have occupied this town and its neighborhood, if one were to judge of the number of people by the size of the church built to accommodate them at their devotions.

We saw few, if any, unmistakable signs that the ground had been cultivated in the vicinity of these ruins. Nor is there any good arable land, so far as we could observe, at any point nearer the Rio Grande; for uplands to be arable, in the climate of New Mexico, must be so situated as to be capable of irrigation. The stream of water at Abo is in a deep ravine. It is very inconsiderable in point of size, and loses itself in the sand in less than five hundred yards below the springs which feed it. The adjacent country is rolling and broken, and covered with pinon and cedar. The underlying rocks are secondary red sandstone. The summits of the mesas and neighboring eminences are composed of grey limestone filled with marine fossils.

It was nearly night when we reached Abo. There was a keen freezing gale from the northwest, and the whole appearance of the country was cheerless, wintry, and desolate. The tall ruins, standing there in solitude, had an aspect of sadness and gloom. They did not seem to be the remains of an edifice dedicated to peaceful, religious purposes, a place for prayer, but rather as a monument of crime, and ruthlessness, and violence. The cold wind when at its height appeared to roar and howl through the roofless pile like an angry demon. But when at times it died away, a low sigh seemed to breathe along the crumbling battlements; and then it was that the noise of the distant brook rose upon the earlike a wail.

In the mystery that envelopes everything connected with these ruins - as to when, and why, and by whom, they were erected; and how, and when, and why, abandoned - there is much food for very interesting speculation. Until that mystery is penetrated so that all these questions can be answered without leaving a doubt, Abo belongs to the region of romance and fancy; and it will be for the poet and the painter to restore to its original beauty this venerable temple, to rebuild its altars, and to exhibit again unto us its robed priests, its burning censers, its kneeling worshippers.

Sunday, December 18, 1853.

It took us until half past nine o'clock this morning to complete our examination of the ruins. We then marched over a rolling and, in places, broken country twelve miles 750 yards, and in a general direction of N. 12° E. For the whole of this distance the country is covered with groves of cedar and piñon trees. We then came to the Ruins of Quarra. These appear to be similar to those of Abo, whether regarded with a view to their evident antiquity, the skill exhibited in their construction, their preservation at the present time, or the material of which they are built. They too are situated upon a small stream of water that soon disappears in the earth.

The church at Quarra is not so long by thirty feet as that at Abo. We found one room here, probably one of the cloisters attached to the church, which was in a good state of preservation. The beams that supported the roof were blackened by age. They were square and smooth, and supported under each end by shorter pieces of wood carved into regularly curved lines and scrolls, like similar supports which we had seen at the ends of beams in houses of the better class in Old Mexico. The earth upon the roof was sustained by small straight poles, well finished and laid in herring bone fashion upon these beams. In this room there is also a fire-place precisely like those we found in the Mexican houses at the present day.

We had heard that in a stone panel inserted in the front end of the church at Quarra we should find emblazoned the fleur-de-lis, the ancient armorial bearings of France; and many therefore supposed that possibly this church had been erected by French Catholics who had come as missionaries across the country from the direction of New Orleans. But we saw no panel, no fleur-de-lis, and no stone of any kind, that bore marks of a chisel or of a hammer. Every piece in the church, in the cloisters, and in the debris of a neighboring village, was in the same rough form which it had when it was broken from the quarry.

The course from Quarra to the town of Manzana is, W. 35° N.; the distance is four miles 1,145 yards. We now find ourselves at a very great elevation. The whole country is clad in a winter garb. The high Sierra de las Manzanas, and the towering pyramidal peaks called Las Tetillas, gleam with a depth, it is said, of more than two feet of snow.

The town of Manzana is situated at the base of the Sierra of that name, and a small rivulet which, in running eastward to the open plains, soon sinks into the ground. Several dams are constructed along this rivulet, to collect and retain the water for purposes of irrigation. The town is built partly of logs set on end jacal fashion, with the interstices filled with mortar, and with roofs covered with earth, and partly of adobes. It sports a very dilapidated church, erected, it would seem, as a practical antithesis to the morals of the inhabitants; for Manzana

enjoys pre-eminently the wide-spread notoriety of being the resort of more murderers, robbers, common thieves, scoundrels, and vile abandoned women than can be found in any other town of the same size in New Mexico, which is saying a good deal about Manzana. Fortunately it contains but few inhabitants, not more than five or six hundred at most. It is not an old town. When the first settlers came here they found two groves of apple trees, one just above the site now occupied by the town, and one just below. Tradition says these trees were planted at the time Abo and Quarra were inhabited; and yet, tradition has lost all trace of when that time was. It is said the Catholic church has lost all trace of when that time was. It is said the Catholic church of New Mexico claims that they were planted by some priests, but admits that it has no records or authentic traditions about the ruins we have visited. Her claim, however, that some priests did this at some period or other, is good enough to authorize her to farm out these two orchards yearly, as we were informed, to the highest bidder. Two of the largest trees in the lower grove were found to be respectively eight feet and six feet in circumference. The largest was hollow - a mere shell of an inch or two in thickness. These trees have a venerable appearance. They have never been pruned, and have, therefore, grown gnarled and seraggy. Many of them are much smaller than those which were measured. They have grown, doubtless, from seeds which have fallen from the older ones. How long this process of self-planting has been kept up, of course, no one can know. Apple trees are not indigenous to New Mexico. Assuming it to be true, however, that the largest of these trees were planted at the period referred to, then the ruins of Abo and Quarra are more than two centuries old.

These two groves, or rather these two clumps of trees, are not standing regularly in rows and orchard-like; on the contrary, they are crowded together in the most irregular and natural manner.

The name of this town, and of the towering Sierra to the west of it, was adopted from finding these orchards here; Manzana being the Spanish for apple, and Manzano the botanical name in that language for apple tree. The name of the town is spelt indiscriminately in both ways throughout New Mexico.

Immediately about Manzana, and up the slope towards the high mountains west of the town, there is a pine forest many miles in extent, of most excellent timber for boards and for building purposes. Some twenty-five or thirty miles in an easterly direction there is a large salt lake, which has no outlet. This lake supplies nearly the whole of the upper portion of the territory with salt. There are fine roads leading towards it from different directions. We were informed that the bottom of the lake is covered with a sheet of solid salt, which, in the dry season, is some three or four inches in thickness. When the rainy season sets in, filling the lake with fresh water drained from the surrounding prairies, this sheet of salt is said to dissolve down to half this thickness. We were

DIARY OF MAJOR CARLETON (CONT.)

not prepared to examine and visit this lake. It lies directly off our route, and has neither wood nor fresh water within many miles of it. The proper time to go to it would be during the rainy season and when there is grass.

We had procured orders from the vicar general of New Mexico for what corn we should require at Manzana--corn which had been paid in by the peasantry as tithes (diezmos) to the Catholic Church. When we arrived there, we found that the corn belonging to the church was some six or eight miles off, at another village, called Torreon. So we were forced to buy on credit what forage we required.

Here we learned that a small party of Texans had recently been at the ruins of Gran Quivira in search of treasures. Whilst there they sent an Apache Indian in to Manzana for some articles they wanted. An American named Fry, a hunter, who lives at Manzana, went out to the ruins in company with two Mexicans to see these Texans; when he reached there he found them gone. He ascertained while he was gone that there was no water to be found at a pond where our Mexican guide expected we should find it, as it had dried up; and that unless we found another small pond some six or eight miles from that, and which our guide knew nothing about, we should be obliged to go without any, for he said there was probably no snow about the ruins, as about Manzana, which we could melt. So Fry was employed to pilot us to this pond, as failing to find it, we could obtain no water nearer to Gran Quivira than at the little stream at Quarra, which is a distance of thirty-five miles.

Monday, December 19, 1853.

This morning we loaded the wagons with all the corn they would hold; but it did not amount to over two days' feed, as our other supplies had to be taken along besides. In addition to this the dragoons put into their haversacks enough for their horses for one night. We started about ten o'clock in the morning and retraced our steps toward Abo, to a point on the road known as Arroyo de la Cienega - a dry bed of a wet-weather stream. This is nearly two miles below Quarra. Here we left the beaten track and took a course across the country in the direction of E. 40° S. After travelling some six miles we struck an Indian trail which leads from Manzana to the country of the Mesquero Apaches. This we followed in the same general direction to some holes in the rocky bed of another wet-weather stream called Las Aguachas. These often contain water enough for a small party with animals, but we found them quite dry. One, only, had a small cake of ice, but no water. They are 13 miles 1,022 yards from where we left the road. The country for this distance is quite barren. It has but little grass, but is covered with the tall branching cactus, and with scattered clumps of pinon and cedar trees. On our right hand, for the last third of this distance, we have had a mesa covered with timber to its summit, which is called La Mesa de los Turanes. It is improperly laid down upon the maps as a Sierra, or mountain range. It runs

DIARY OF MAJOR CARLETON (CONT.)

from west to east, commencing a few miles south of Abo and ending in a point on the plains about fifteen miles east of Las Aguachas, where we cross over it by ascending gradually through an open prairie, which can easily be seen from the place where we left the road below Quarra.

The stone that crops out at Las Aguachas is a remarkably fine sandstone, suitable for grindstones and wetstones. The best is at the upper end of the ravine where the last pool of water would be found in the wet season.

When we reached this point it was nearly night. A cold piercing wind was blowing, and it was yet some miles to the place where we hoped to find water. The wagons were some two or three miles behind; Major Carleton pushed on with the squadron, having Fry for a guide, to find the pond before dark; leaving Lieutenant Sturgis with twelve men at Las Aguachas, to wait for the wagons, and then follow with them on the trail. The Mexican guide stayed with the Lieutenant, that he might track the squadron after night should set in. After travelling a little over five miles, the squadron arrived at the water. It was found in a deep hollow in the open prairie. The pond is not over eighty or one hundred yards in diameter, and might easily be missed after dark even by one acquainted with its locality. The water is fresh and sweet. This pond is nearly a mile from timber. It lies immediately off against the mouth of a pass through the Mesa de los Tumanes, and is known to the shepherds as La Laguna de la Puerta, the Lake of the Pass. Here we made holes in the ice, and, having watered all the horses, moved up into the pass, where we found wood in abundance, and very good protection from the cold wind. We soon had large fires burning, which served as a beacon to the lieutenant, who was behind bringing up the wagons. Shortly after dark he arrived. One of the wagons was immediately unloaded and sent with the water-kegs to the lake; the men taking lanterns to see to get the water through the ice. By ten o'clock that night our horses were groomed and fed, the men had their suppers, and large piles of pinon wood were blazing the whole length of the camp, giving it a cheerful and picturesque appearance.

This camp is twenty-five miles and 90 yards from Manzana.

Tuesday, December 20, 1853.

As we knew it would be quite impossible to march to Gran Quivira and make the necessary observations there and back to the laguna in one day, it was decided to rest this forenoon, and to fill the kegs and India rubber water-tanks with water, and then to march to the ruins in the afternoon; to encamp near them to-night; to employ the forenoon of tomorrow in their examination; and then to return to-morrow evening to this place. In this way our animals would not be without water more than a day and a half. We accordingly broke up our camp about half-past twelve o'clock. After we had filled our kegs and tanks at the laguna, we ascended a high ridge for a mile or more, when our guide

DIARY OF MAJOR CARLETON (CONT.)

pointed out to us what he said was the great church or cathedral, at Gran Quivira. It was in an air line all of thirteen miles distant, and yet we could see it distinctly with the naked eye. We could have seen it easily when five or six miles further off, had there been no obstruction to the view; a proof of the remarkable clearness of the atmosphere in this elevated region. It lies S. 5° E. by the compass from Laguna de la Puerta, and served for a land-mark towards which to direct our march. Our course was a very straight one; for the country which is an open rolling prairie, offered no impediment to our moving in a right line. The weather changed to be very cold during the afternoon; when near sunset a fierce wind arose from the direction of the snow-clad mountains in the west, and a cold vapor like a cloud came over the country, enveloping everything in a dense fog, and covering men and horses with a hoar frost. It was feared that the gale would change into one of those dreadful winter northers which are sometimes experienced in this country, and which are so fatal to men and animals when exposed to their fury on the open prairie. So the direction of the march was changed, that we might get the shelter of the timber on the slope of the Mesa de los Tumanes, which stretched along our right at a distance of not more than three or four miles. This we struck very opportunely, just as night was setting in. We soon had large fires blazing, and all our horses well blanketed and picketed on the leeward side of them, to get the benefit of the heated air and of the eddy in the wind from the long line of tents. In this way they were kept from suffering, although the night was uncommonly cold and inclement.

So still another day has passed away, and the ruins are not yet reached. Quivira would seem all ways to have been a difficult place to arrive at. We find in Castaneda's history of the expedition into this country made by Francisco Vasques de Coronado, in 1540, '41, and '42, that that general was forty-eight days in hunting for it, starting from some point between the Rio Grande and the Gila River. All the way from Albuquerque we have asked the people of the country where the ruins were situated; How they looked; Who built them; etc. etc., etc. To all these questions we could seldom get a more definite reply than "Quien sabe?" It seemed as if the genii who, in the Eastern tale at least, are said to guard the depositories of great treasures, were determined to make the existence of such a place as Gran Quivira as much of a problem to us as to the Mexicans themselves. We had seen, before the fog set in, an edifice in the distance, which had seemed to move away as we approached it, like the weird lakes of water in a mirage. But to-morrow, at all events, will decide for us whether that edifice be a Fata Morgana or not.

Wednesday, December 21, 1853.

At daybreak this morning every tree and spire of grass, and even the blankets upon our horses, were covered with ice. The trees seemed as if every twig was made of frosted silver. The wind had gone down, and overhead the sky was clear; but a heavy bank of fog extended all along the east,

DIARY OF MAJOR CARLETON (CONT.)

obstructing our view of the Sierra de las Gallinas, which bounds the horizon in the direction. It was long ere the approaching sun waded up through so dense a veil.

Soon after we left camp we again saw the cathedral of Gran Quivira; but in surmounting one eminence after another as we moved along over a rolling country, the ruins, phantom like, seemed to recede before us the same as yesterday. When we first saw them this morning they appeared to be about a mile and a half distant, when in reality they were more than five miles off. The last three of these five miles' travel was over nothing but a succession of sand hills covered with a tall coarse grass, with two or three heads on each stalk, which seemed to be peculiar to this place. The horses sank more than fetlock-deep into the soft yielding sand; while it was with great difficulty that the mules, at a snail's pace, drew the wagon along.

At eleven o'clock in the forenoon we came to the last high ridge on the point of which the ruins are situated. This ridge is composed of dark blue compact limestone, which crops out in several places along its slopes. The ascent is quite abrupt on every hand, except towards the east; the ridge is prolonged in that direction for several miles. We all felt rejoiced that finally we had reached a place about which so much had been written, and yet so little had really been known.

Whatever may have been the grandeur and magnificence of that place in ages long past, its present appearance and condition are easily described.

We found the ruins of Gran Quivira to consist of the remains of a large church, or cathedral, with a monastery attached to it; a smaller church or chapel; and the ruins of a town extending nine hundred feet in a direction east and west, and three hundred feet north and south. All these buildings had been constructed of the dark blue limestone which was found in the vicinity.

The cathedral, which we had seen from Laguna de la Puerta, is one hundred and forty feet long outside, with the walls nearly six feet in thickness. It stands longitudinally W. 15° S., with the great entrance in the eastern end. The altar was in the western end. Like the churches at Abo and Quarra, it is constructed in the form of a cross. From the doorway at the foot of the cross to the transept, it is eighty-four feet seven inches; across the transept it is twenty-one feet six inches; and from thence to the head of the cross it is twenty-two feet seven inches; making the total length, inside, one hundred and twenty-eight feet eight inches. The width of the nave is twenty-seven feet; the length, inside of the short arm of the cross, is thirty-six feet. A gallery extended along the body of the cathedral for the first twenty-four feet. Some of the beams which sustained it, and the remains of two of the pillars that stood along under the end of it which was nearest to the altar, are

still here; the beams in a tolerably good state of preservation--the pillars very much decayed; they are of pine wood, and are very elaborately carved. There is also what, perhaps, might be termed an entablature supporting each side of the gallery, and deeply embedded in the main wall of the church; this is twenty-four feet long by, say, eighteen inches or two feet in width; it is carved very beautifully, indeed, and exhibits not only great skill in the use of various kinds of tools, but exquisite taste on the part of the workmen in the construction of the figures. These beams and entablatures would be an ornament to any edifice even at the present day. We have cut one of the beams into three parts, to take back with us. The entablatures are so deeply set in the walls that we are unable to procure a piece of them. The beams are square, and are carved on three sides; the floor of the gallery rested on the fourth side.

The stone of which the cathedral was built was not hewn, nor even roughly dressed; but the smoothest side of each piece was laid to the surface with great care. We saw no one piece in all the ruins which was over a foot in length. The mortar was made from the ordinary soil found upon the spot; it affords but a poor cement to resist the action of the elements and the ordinary ravages of time.

The walls of the cathedral are now about thirty feet in height. It was estimated, from the great quantity of stones which have fallen down, forming a sort of talus both within the walls and outside of them, that, originally, this building was all of fifty feet in height. There is a small room to the right as you enter the cathedral, and another room, which is very large, and which communicates with the main body of the building by a door at the left of the transept. There was also communication between this large room and the monastery, or system of cloisters, which are attached to the cathedral. The chapel is one hundred and thirty feet from the cathedral. This building is one hundred and eighteen feet long, outside, and thirty-two in width; its walls are three feet eight inches in thickness; it is apparently in a better state of preservation than the cathedral, but yet none of the former wood-work remains in it.

A short distance from the chapel there is an enclosure, which we supposed was the ancient cemetery.

The remains of the town are but heaps of stones, with here and there some evidences of narrow streets running nearly east and west, and north and south. Through these stones pieces of beams and sticks of wood are seen to project; these indicate, by moss and otherwise, that they are of very great antiquity; they are bleached white by the weather, and are deeply gnawed by the tooth of time.

We saw some deep pits, which were circular, and walled around like wells; we believed them to be the remains of cisterns--they were not deep

DIARY OF MAJOR CARLETON (CONT.)

enough for wells; some have concluded that they were estufas. Two hundred and ninety feet north of the cathedral there are evident traces of an estanque; this, as well as the cisterns, was probably made to collect the rain-water which ran from the different buildings.

Toward the east we saw a well defined road, which kept the ridge for a few hundred yards, and then turned off toward the southeast, where all further vestiges of it are lost in the sand. Where it is the most plainly marked along the summit of the ridge some large cedar trees are growing directly in the middle of it; these trees look to be very old indeed.

In every direction about the ruins we found great quantities of broken pottery, many specimens of which we have collected to take to Albuquerque. Some of it is handsomely marked and well glazed. We also found several stones which were evidently once used as matates. These matates are in use to this day, to rub boiled corn upon until it becomes a kind of dough, suitable to be kneaded into cakes called tortillas. We have selected two, which we shall take home with us. These prove to us that the ancient inhabitants of Gran Quivira knew the use of corn as an article of food.

There is no sign that the ground in the vicinity has ever been cultivated, and no mark whatever of irrigating ditches. Indeed, an acequia, or open aqueduct, could not, it is believed, have brought water to the Gran Quivira, for the point occupied by the town appears to be considerably higher than the surrounding country.

We were informed by men at Manzana who had been pastores in their youth, and had herded sheep in this region of country, that there is a fine bold spring of water at the base of the Sierra de las Gallinas, about fifteen miles from the ruins, and that they had heard that water once ran in an aqueduct from that spring to the Gran Quivira. This would hardly have been possible, unless the aqueduct was a closed pipe; because, from appearance, the country intervening between these two points is considerably lower than either of them.

We saw no indications that there had ever been such an aqueduct, nor did we see any sign that wells had been dug in the neighborhood. From every feature of the country, both within and without the surrounding sand-hills, we could but be lost in conjecture as to the method adopted by the inhabitants to obtain even water to drink, let alone for purposes of irrigation, unless they were supplied by some spring or stream that has long since disappeared. The nearest point where water can always be obtained now, is the spring which the pastores spoke of as being at the base of the Sierra de las Gallinas, fifteen miles away. The Laguna de la Puerta is 14 miles 773 yards from Gran Quivira, in nearly a direct line; but this is said to become entirely dry in seasons of great drought.

As at Abo and Quarra, we were surprised at not finding, in the cathedral and chapel, some of the doorways and windows surmounted by an arch. Had they been so, originally, these buildings would be in a better state of preservation. The beams across windows and doors, in giving way to the weight above as they became decayed, made a fair beginning towards letting down the whole superstructure.

Mr. Gregg, in speaking of the ancient ruins of New Mexico, says: "The most remarkable of these are La Gran Quivira. This appears to have been a considerable city, larger and richer by far than the capital of New Mexico has ever been. Many walls, particularly those of churches, still stand erect amid the desolation that surrounds them, as if their sacredness had been a shield against which time dealt his blows in vain. The style of architecture is altogether superior to anything at present to be found in New Mexico. What is more extraordinary still is, that there is no water within less than some ten miles of the ruins; yet we find several stone cisterns, and remains of aqueducts, eight or ten miles in length, leading from the neighboring mountains, from whence water was no doubt conveyed. And as there seem to be no indications whatever of the inhabitants having ever been engaged in agricultural pursuits, what could have induced the rearing of a city in such an arid and worthless plain as this, except the proximity of some valuable mine, it is difficult to imagine. From the peculiar character of the place, and the remains of cisterns still existing, the object of pursuit, in this case, would seem to have been a placer--a name applied to mines of gold--and intermingled with the earth. Other mines have, no doubt, been worked in the adjacent mountains, as many spacious pits are found, such as are usually dug in pursuit of ores of silver; and it is stated that in several places heaps of scoriae are found.

"By some persons these ruins have been supposed to be the remains of an ancient pueblo, or aboriginal city. This is not probable; for, though the relics of aboriginal temples might possibly be mistaken for those of Catholic churches, yet it is not presumed that the Spanish coat of arms would be found sculptured and painted upon their facades, as is the case in more than one instance. The most rational accounts represent this to have been a wealthy Spanish city, before the general massacre of 1680, in which calamity the inhabitants perished--all except one, as the story goes,--and that their immense treasures were buried in the ruins. Some credulous adventurers have lately visited the spot in search of these long-lost coffers, but as yet (1845) none have been found."

There is no indication that the escutcheon of Spain was ever sculptured or painted on any facade about the ruins; and the facts, as regards the style of architecture and the remains of an aqueduct, do not, as is shown by this journal, agree with his statement. Mr. Gregg must have described the appearance of this place from what he heard about it; for on all those subjects of which he wrote from personal observation he is most excellent authority.

DIARY OF MAJOR CARLETON (CONT.)

Pedro de Castaneda accompanied Francisco Vasquez de Coronado in his great expedition to the north in search of gold. He wrote a history of the campaign. General Vasquez de Coronado arrived in a country which was called Quivira, in the month of June, 1542. If the present ruins of Gran Quivira are in a region identical with the Quivira then visited, it may be of interest to state that Castaneda says of it and of its inhabitants:

"Up to that point the whole country is only one plain; at Quivira, mountains begin to be perceived. From what was seen, it appears to be a well peopled country. The plants and fruits greatly resemble those of Spain; plums, grapes, nuts, mulberries, rye, grass, oats, pennyroyal, origanum, and flax, which the natives do not cultivate, because they do not understand the use of it. Their manners and customs are the same as those of the Teyas; and the villages resemble those of New Spain. The houses are round, and have no walls; the stories are like lofts; the roofs are of straw. The inhabitants sleep under the roofs; and there they keep what they possess."

The manners and customs of the Teyas, to which he likens those of the people of Quivira, are described as follows:

"These natives are called Querechos and Teyas. They live under tents of buffalo skins tanned, and subsist by the chase of these animals. These nomadic Indians are braver than those of the villages; they are taller, and more inured to war. They have great troops of dogs, which carry their baggage; they secure it on the backs of these animals by means of a girth and a little pack-saddle. When the load becomes deranged, the dogs begin to bark to warn their master to adjust it. These Indians live on raw meat, and drink blood; but they do not eat human flesh. Far from being evil, they are very gentle, and very faithful in their friendships. They can make themselves very well understood by signs. They cut meat in very thin slices, and dry it in the sun; they reduce it afterwards to a powder, to preserve it. A single handful thrown into a pot answers for a meal, for it swells greatly. They prepare it with the fat which they preserve when they kill a buffalo. They carry around the neck a great intestine filled with blood, which they drink when thirsty. If they open a buffalo, they squeeze the masticated grass which is found in the stomach, and drink the juice which runs out; they say that this is the whole substance of the belly. They open a buffalo at the back, and divide it at the joints, by means of a piece of pebble attached to the end of a stick, with as much facility as if they used a knife of the best steel."

The present ruins are not the remains of the round houses with roofs of straw, which Castaneda describes as the dwellings of the inhabitants of Quivira, three hundred and twelve years ago; and if they had had in those days instruments to shape and carve these beautiful beams and pillars, and entablatures, they would hardly have used pebbles at the ends of sticks in

cutting up the buffaloes which they had killed. Besides, the matates we have found are almost positive proof that the people who once resided here ate as food tortillas made of corn; while, from Castaneda's account one is obliged to believe that the inhabitants of the country which he calls Quivira lived entirely upon the flesh of the buffalo, as the Comanches do at the present day.

Castaneda says likewise that: "The Indians of the country had neither gold or silver, and were not acquainted with the precious metals. The Cacique wore on his breast a plate of copper, which he held in the greatest esteem."

Many have supposed that the ancient Aztecs built the edifices at Gran Quivira, Abo and Quarra, during their migration from Aztlan toward Anahuac; and that the ruins now found in the Navajo country, and the Casa Grandes which are still to be seen along the Gila River, were built by the same people and at about the same period of time. Captain Johnson, of the first dragoons, visited the ruins of the Gila river, in November, 1846; from his description of one of the Casa Grande, the largest and best of any he saw, we can discover no point of resemblance between it and those now before us. Captain Johnson says: "After marching six miles, still passing plains which had once been occupied, we saw to our left the Casa de Montezuma. I rode to it, and found the remains of the walls of four buildings, and the piles of earth showing where many others had been. One of the buildings is still quite complete, as a ruin. The others had all crumbled but a few pieces of low, broken wall. The large Casa was fifty feet by forty, and had been four stories high; but the floors and roof had long since been burnt out. The charred ends of the cedar joists were still in the wall. I examined them, and found that they had not been cut with a steel instrument. The joists were round sticks. There were four entrances, north, south, east, and west; the doors are about four feet by two. The rooms had the same arrangement on each story. There was no sign of a fireplace in the building. The lower story was filled with rubbish; and above, it was open to the sky. The walls were four feet thick at the bottom, and had a curved inclination inwards to the top. The house was built of a sort of white earth with pebbles, probably containing lime, which abounded on the ground adjacent; and the surface still remained firm, although it was evident they (the walls) had been exposed to great heat from the fire. Some of the rooms did not open to all the rest, but had a hole a foot in diameter to look through. In other places were smaller holes." Clavigero, the historian, believes that this great movement of the Aztecs from the north towards the south commenced about the year of our Lord 1160, and that Casa Grandes were built by them at various halts which they made in their circuitous journey towards the valley of Mexico. It has been shown that in 1542 there were no buildings of the size and character of the Casa Grandes, or such as are found here now, in all the country called Quivira, which Castaneda visited and described. So one must conclude that, so far as the Aztecs are concerned, whatever they may have had to do with the building of the

DIARY OF MAJOR CARLETON (CONT.)

edifices either in the Navajo country, or on the Gila, or those found 250 miles northwest of Chihuahua, they never planned or constructed those at Gran Quivira.

History represents that Vasquez de Coronada, finding no gold during his great expedition, returned to Mexico, where he fell into disgrace and died in obscurity.

The Spaniards did not return to colonize the province of New Mexico until the year 1581; and the country could not be considered as conquered until 1595. For eighty-five years after this the colony seems to have prospered and to have grown in power. Towns and villages were built, and valuable mines of gold and silver were found and worked with success. The Catholic clergy were aided in their efforts to convert the Indians to christianity by the government, at whose expense large churches were erected in different parts of the province of New Mexico, corresponding with the missions, which were built for the same purpose and at about the same period in the other provinces of Texas and California. It was during this time, doubtless, that the large edifices at Abo, Quarra, and Gran Quivira were erected. It is more than probable that valuable mines of the precious metals were found in their vicinity, and worked under the direction of the Spaniards by the Indians who had been subjugated; for there is every reason to believe that the mountains east of the Rio Grande are at this day rich in gold and silver.

It appears that during these eighty-five years the Spaniards treated the Indians with the most cruel oppression, until finally the latter revolted against them. The night of the 13th of August, 1680, was the time set throughout all New Mexico, when the Indians should rise and make an indiscriminate massacre of all the Spaniards in the country. This plot was made known to Don Antonio de Otermin, then the governor and military commandant of the province, by two Indians chiefs. Every effort was made for defence and to avert the coming storm, but without success. The Indians rose as agreed upon; after various conflicts, they destroyed great numbers of the inhabitants; and, finally, by the latter end of September of that year, succeeded in driving all the rest, with Governor Otermin included, to El Paso del Norte, entirely beyond the confines of the territory.

We have been informed that there is now a tradition amongst the Indians, that as soon as their forefathers had become successful in expelling the Spaniards, they filled up and concealed all traces of the mines where they had toiled and suffered for so many years; declaring the penalty to be torture and death to any one who should again make known their locality.

Old Mr. Chavis, who overtook us soon after our arrival at Gran Quivira, informed Major Carleton that he had been told, when in his youth, by very old people, that a tribe of Indians once lived here called the Pueblos of

Quivira; that the Spanish priests came and lived amongst them, in peace and security, for twenty years; that during this period these large churches were erected; and that at the time of the great massacre there were seventy priests and monks residing here---all of whom were butchered excepting two, who contrived to make their escape; that, previous to their massacre, the priests had had intimation of the approaching danger, and had not only buried the immense treasures which had been collected, but had concealed likewise the bells of the churches; that many years afterwards the people of Quivira died off until but few remained; that one of these, a descendant of the chief, knew where the treasures were buried; that the remnant of the tribe afterwards emigrated and joined other Pueblos below El Paso; and that many years ago an old man, one of the last of the tribe, had told in what direction from the church these great treasures had been concealed. So far as the building of the churches and the massacre of the monks and priests are concerned in this account, as well as the final decrease and removal of the people who once lived here, there is no doubt but the story told by Mr. Chavis, is, in the main, correct. The account of the depositories of the bells and the treasure is said to have been written down as given from the lips of the last cacique of Quivira, who, at the time he made the disclosure, was living away below Mesilla, on the Mexican side of the river. A copy of this paper has been secured, and is here inserted in the original language, for the benefit of those who may take an interest in such matters.

"En el Semetario de la Parroquia grande en el centro del costado derecho segun la figura numero uno esta una entrana escarbando estan dos campanas tomando la linea de la abertura que dejan las dos companas se bora al oriente para el callejon que deja la eglesia vieja y el pueblo una lomita a distancia de trescientas varas mas o menos que no hay otra que forme linea con las campanas debajo de dicha loma hai un setano de diez o mas varas retacado de piedras el cual tiene el gran tesoro.

"Nombrado por Carlos quinto de la Gran Quivira."

** (Footnote: "In the cemetery of the great parish church, in the centre of the right side, according to figure number one, there is a pit, and by digging will be found two bells. By taking the line of the opening left by the two bells, the line of the opening left by the two bells, there will be seen to the east, along the lane left by the old church and the town, a hill, at the distance of three hundred yards, more or less, which forms precisely a line with the bells. At the foot of said hill is a cellar of ten yards or more, covered with stones, which contains the great treasure. "Mentioned by Charles Fifth of Gran Quivira.")

The grammar of this document is preserved, as in the original. There can be no doubt but the belief that a large amount of gold and silver has

been buried here, has for a great number of years been seriously entertained. We find in the cathedral and in the chapel, in every room in the monastery, in every mound of stones in the neighborhood, and in every direction about the ruins, large holes dug, in many places to the depth of ten feet, by those who have come from time to time to seek for these hidden treasures. Some of these holes look as if they were made more than a century ago, while others appear to be quite recent. Even the ashes of the dead have not been left undisturbed during these explorations. Near the east end of the chapel we saw where the people who had been digging had thrown up a great many human bones, which now lie scattered about. From these we have selected six skulls to send to some one who is skilled in the science of craniology, that he may determine, if possible, to what race of people they once belonged. These skulls are thought to be unusually large.

The ruins of Gran Quivira have hitherto occupied the same position with respect to the boundless prairies which the fabulous island of Atlantis did to the ocean in days of antiquity. No one seemed to know exactly where this city was situated. But the uncertainty of its locality seemed to make no difference in regard to the interest that was felt concerning it; for people would believe in its existence, and receive great pleasure in listening to traditions about its marvellous beauty and magnificence, even when to a reasonable mind those traditions and accounts ran counter to probability.

Men of genius and distinction have taken great pains in following up mazes in the labyrinth of reports concerning it, whether oral or written, and in their glowing descriptions it has appeared almost like a city of enchantment. To them it had paved streets, and fluted columns, and ornate friezes, and sculptured facades; it had the remains of aqueducts and fountains; it had long colonnades, and even barbaric statuary; it had the groined arch, the shouldering buttress, the quaint gargoyle, and everything in outline and in detail that could betoken skill, and taste, and opulence. It was a city, they said, whose inhabitants departed from it so long back in the gloom and mists of the past as to leave in utter obscurity all other records concerning them.

The sphynx, they said, about whose bosom the sands from the Lybian desert had drifted for unknown centuries, was no more of an enigma than this was. Here were palaces and temples, and deserted courts, and long-echoing corridors, and grass-grown streets, and reigning over all a silence so profound as almost to be heard.

Historical societies had taken up these descriptions, and filed them away among their transactions as documents of deep interest. Venerable and learned ethnologists searched in dusty manuscripts and black-lettered volumes of antiquity for some authentic account of that race of men who reared and then abandoned such a city. But to this moment their researches have proved fruitless, and the story they seek is still recorded in an

unsealed book.

Our business is not that which will permit us to clothe with imaginary grandeur these vestiges of a people whose name has been erased from the book of nations, nor that which will allow us time to indulge in abstruse speculations as to their race or their language. These things belong to the poet and philosopher. With all those pleasant reveries and romantic fancies which these ruins away here on a desert are so wonderfully calculated to awaken we can have nothing to do. We came here to note realities; and now the facts we have seen, the theories we have read which were of value, the traditions we have heard deserving of attention, and the conclusions to which we have come concerning this interesting place, are all written down. All else save the things we saw admits of doubt, and is obscured by so dark a cloud of uncertainty as to leave much ground for new theories, and for, perhaps, infinitely more valuable conclusions.

We found that the Mescalero Apaches, with whom we had some business of interest, had all gone far towards the south. Our guide, who was a captive amongst them for eight months, gave us some information as to their strength in warriors, which is worthy of record. He says they live in small bands, or families, in order to distribute themselves over a greater extent of country for purposes of hunting. When they are engaged in war, or upon any other enterprise of importance, these bands become united. When separated, they are each controlled by a sub-chief; when acting in concert, they choose a head-man to direct affairs for the time being. The following list shows the name of each of these sub-chiefs and the strength of his band of fighting men:

Santos has forty men;
Josecito has nine men;
Barranca has nineteen men;
Negrito has twenty men;
Jose Largo has fifteen men;
La Pluma has thirteen men;
Santana has nineteen men.

Two chiefs who live in the Sacramento mountains, whose names are unknown, have fifty men.

Add to these the ten sub-chiefs, and we have in this tribe two hundred and eight men capable of bearing arms.

They are represented as having many good rifles, and as being most excellent shots. Living in the neighborhood of the great thoroughfare that leads from Texas to California, and having mountain fastnesses in which to take refuge when pursued, they are able, and very willing, to do a great deal of mischief.

DIARY OF MAJOR CARLETON (CONT.)

From Gran Quivira, the northern point of the Sierra Blanca bears by the compass S. 30° E., and is distant about fifty miles.

The highest point of the Sierra de las Gillinas bears E. 5° N., and is distant about fifteen miles.

The peaks known as Las Tetillas bear N. 36° W., and are distant about fifty-five miles.

We left the ruins about three o'clock in the afternoon, and retraced our steps to the Laguna de la Puerta, where we arrived an hour after dark.

Thursday, December 22, 1853.

To-day we returned to Manzana, over the same track we had made to the Laguna. Here we encountered a snow-storm. This town is so elevated that hardly a cloud passes the mountains that does not shower upon it either rain, snow, or hail. From what we have observed during our second visit to this place, this Botany Bay of New Mexico, we have concluded that our former estimate of the character of the inhabitants was premature and ill-judged; we now believe that there is not one single redeeming trait of disposition or habits to be found within its borders.

Friday, December 23, 1853.

Our course to-day was about N. 10° W., and lay along the eastern slopes of the Sierra de la Manzana. We faced a snow-storm for nearly the whole forenoon, and were therefore unable to observe much about the features of the country. Six miles 729 yards from Manzana we passed a small mountain stream running towards the east--a mere brook, that is soon lost in the ground. On this there is a little village called Torreon. Two miles, 1,181 yards further north we passed another similar brook, and another small town called Tagique. From this last place, over a rolling, broken, and well timbered country, we marched to a small hamlet called Chilili. This town, like Torreon and Tagique, is situated upon a mere rivulet, running from the mountains to the open plains towards the east. Here we encamped in the snow, and suffered much during the whole night from a cold wind from the north.

Saturday, December 24, 1853.

This morning, before we left camp, an old Mexican brought us some ore, which he said is to be found in great abundance near the Tetilla Peaks, but that it is now covered so deeply in the snow as to be difficult to be procured. We believe the specimen he gave us contains silver. When the snow has melted, it will be worth the trouble, perhaps, to explore these mountains thoroughly, with a view to the discovery of precious metals.

DIARY OF MAJOR CARLETON (CONT.)

After travelling north for about two miles this morning, we turned off toward the west, by a road that leads to Albuquerque by the Cañon del Infierno. As we ascended the eastern slope of the mountain, we passed through extensive groves of large pine-trees, suitable for boards and other building purposes. The snow was a foot in depth, and the air dry and cold, as in midwinter in the extreme north. The Cañon del Infierno is 10 miles 562 yards in length. It is very circuitous. The mountains rise abruptly thousands of feet above it on either hand. This makes it a pass of great ruggedness, as well as of a wild and picturesque beauty. Half-way down through it we came to a fine spring of water. The rocks are the same stratified, fossiliferous limestone, which we saw at Los Puertos de Abo. From the mouth of the Cañon del Infierno to Albuquerque, the road descends through an open prairie, entirely destitute of water for the whole distance, which is 20 miles 492 yards.

We arrived at Albuquerque at 8 o'clock in the evening, having marched today 36 miles 317 yards.

PREHISTORIC VILLAGE AT SAGUARO NAT. MON.
By Charlie R. Steen, Jr. Park Nat.

On August 19th I visited Saguaro National Monument to inspect some prehistoric village sites which had been reported from that reservation. With Mr. Charles MacGuire, project landscape architect, as a guide I visited two sites.

The first site visited was a shallow rock shelter in the NW $\frac{1}{2}$ of Section 33 T 14 S, R 16 E. The shelter is located under an overhanging rock some 30 feet in length and has a SE exposure. A few sherds and flakes of stone are to be seen on the ground surface, together with a great deal of charcoal which has impregnated the ground. This site is located within 100 yards of the loop road now being constructed but as it lacks importance it would be worthless to attempt to develop it as an added attraction along the road.

After leaving the rock shelter we rode along tortuous and rough trails into Section 4 of T 16 S, R 16 E, to a long spur which extends southwest from the Tanque Verde Mountains.

There is a village of approximately fifty houses located along the top of this ridge, six of which and one trash mound have been dug by unauthorized persons. The floor plans of the dwellings are rectangular and average about 12' x 18' feet. Rains have destroyed the floors of the houses which have been dug but if the digging stopped at floor level the house floors were from two to three feet below the present surface of the ground which has apparently changed very little during the time

PREHISTORIC VILLAGE IN SAGUARO NATIONAL MONUMENT (CONT.)

since the village was abandoned.

Entrances were made by cutting a ramp from the ground surface to floor level about midway along one of the long sides of the house. The superstructure of the house rested on a foundation of stone slabs set on edge in parallel rows around the excavation with the interstices filled with adobe. Some of the foundations are still standing more than 1.5 feet above the present surface of the ground.

A small stream comes down from the Tanque Verdes and flows along the arroyo north and west of the site. The water sinks into the ground at about the upper limits of the village but at that point the arroyo widens, to form a flood plain with an area of approximately 60 acres. Water is no doubt just under the surface over the entire extent of the flat. The land could be farmed today without the aid of irrigation and it is quite likely that the inhabitants of the village on the ridge above cultivated this patch of land. The arroyo on the opposite side of the spur is dry; a typical desert growth of mesquite and cactus prevails in contrast to the ash and arrow wood of the aforementioned valley.

Located in sections 3, 2, and 1 of the same township, and on similar spurs, are at least four other sites according to Mr. MacGuire. Lack of time prevented a visit to any of these others.

Recommendations:

The village visited, and apparently the others in the string, are just outside the range of the saguaro cactus and there is no particular scenic value to the immediate vicinity. Judging all by the one example, they possess no outstanding characteristics which would call for development so that visitors might see them. All the villages, however, are of a fairly good size and so far only one has been pothunted and it seems very desirable to me to protect the sites from vandals of the Tucson area. The sites are rather difficult of access at the present time, but the Pima County highway department is seriously contemplating the construction of a road which would pass about a mile from the westernmost of the villages. One of the houses in this site was undoubtedly opened last winter and a graded road a short distance away would certainly mean more vandalism. It will be impossible to patrol effectively the area due to the fact that the ranger for this monument is appointed for only eight months and has his headquarters some eight very bad miles away. The persons who have been doing the digging are known and the only feasible method of putting an end to their activities on the monument, I believe, is to take the matter up with them personally.

LETTER FROM THE HENNINGS

(The following good letter was received from our good friends,
the Hennings)

Dear Boss:

A letter seems a weak and ineffective way of showing our appreciation for the fine two months and half we spent mostly among the Southwestern Monuments this year, but a letter it must be, so here it is.

Here at our cabin, so many miles from the desert, where it is always cool and green, and we have a clear mountain river running past our door, our memory of the problems and discomforts you encounter there in the Southwest grows a little vague. But time and distance do not dim our remembrance of the heart-warming friendliness with which we were received, nor of the splendid scenery we have seen, and the way the Indians, both of the past and of the present, have been "brought alive" before our eyes.

Our first experience among the Southwestern Monuments, as you know, was last summer, when we visited Canyon de Chelly, almost reached Be-ta-ta-kin, and stopped at Natural Bridges, Aztec Ruins and Chaco Canyon. We have told you how very impressed and thrilled we were with these first visits, except for our failure to quite reach Be-ta-ta-kin. The latter experience seemed very unfortunate at the time, but as is often the case, it proved a blessing in disguise, as it was indirectly the cause of our coming to know you and the others we have met this year.

Our tour of the Monuments this summer began around the first of May at Chiricahua. There was no Custodian there at that time, but Mr. Olinger and Mr. Harris took care that we saw the sights, and bore patiently with our innumerable questions. We feel that the fine new trails are a real asset at this Monument, as one must really get out among the rock formations to realize their size and variety. The excellent camp ground is also a decided advantage in the eyes of those of us who like to live with the Monuments a day or two.

We see that Mr. Fish, whom we met at Montezuma Castle, has been made Custodian at Chiricahua, and wish him all success in the Monument he has undoubtedly, by now, dubbed "the finest in the Southwest."

Our next stop was Tumacacori, very different from any other Monument we had visited, and very interesting to compare with the California missions we had seen. We were delighted to find that we could camp there, and enjoyed our view of the Mission especially in the late evening and early morning light. Although the next day was Louis Caywood's day off, he and Winnie spent the entire morning in showing us the Mission, which we thought pretty nice of them.

HENNING'S LETTER (CONT.)

A day later we were back, having left our axe at our camp spot, and finding that a good excuse for returning for another chat with the Gaywoods. They took us in as if we were long-lost friends, and we talked Southwest, pictures, Indian baskets and postage stamps till midnight.

In the meantime we had visited Saguaro, and how we wish that everyone could see it at the time of year we did. Flowers everywhere; on the saguaro, though only a few of them were open, of course; in many colors on the cholla; and the palo verde trees in all truth a "shower of gold." Nothing is more miraculous to us than the tremendous vitality of life and beauty in the so-called "desert".

Our visit there at Headquarters came next, and again we wish to express our appreciation for the friendly kindness shown us there. We feel that one reason the list of Southwestern Monuments fans is a growing one, in addition to the inherent interest of the places themselves, is because the members of the personnel are never too busy or too tired to seem to really enjoy talking Southwestern Monuments to anyone who is really interested.

Our visit to Casa Grande and what we learned there of the culture in the Gila and Salt River Valleys opened up to us a whole new chapter in Indian life of ancient times. We had not realized, from our visit in the Four Corners region last year, how extensive and important an Indian population there had been farther south. One of the most valuable aspects of our trip this year is that it correlated a great many things which had been hanging at loose ends in our minds before.

From Casa Grande we went via Phoenix and the Apache Trail to Tonto. There we camped two nights beside a flowering palo verde tree about half way up the entrance road, and two nights, at different times, at the parking area, and we thoroughly enjoyed that lovely view at different times of day.

We visited the lower ruin at Tonto with a party taken up by Woody Spires, and enjoyed that alot, but the trip to the upper ruin, where he took us alone, was even more interesting. It was our first adventure in a ruin that had never been excavated or pot-hunted, and naturally our imaginations worked overtime with ideas of what might lie beneath our very feet.

At Montezuma Castle we were cordially received by Mr. and Mrs. Jackson, and, as usual, we camped and spent several days. We were surprised and pleased to find Charlie Steen there, and it was he who gave us our very interesting trip through the ruin.

While we were camped at Montezuma Castle we made a trip to Tuzigoot, and there we found Charlie, on his day off, taking pictures.

HENNINGS' LETTER (CONT.)

Instead of going out along the Mogollon Rim as we had planned, we surprised Woody down at Tonto by dropping in there again on our way back to Las Cruces for the second part of our trip.

Our next Monument, of course, was White Sands. We found, as everyone docs, we suppose, that no amount of description can prepare one for that unbelievable expanse of whiteness or for the lovely contour of the dunes. After driving in to the turn-around, and hiking on the sands awhile, we spent an hour or more talking to Mr. Dougherty, who showed us the interesting collection of White Sands formations he is making in preparation for the proposed museum.

We would have enjoyed camping at the Sands, as we know it must be especially beautiful in the late evening and early morning light, but we found the glare and heat a little too much without any shelter, so we regretfully traveled on. Stopped at Alamogordo for an hour's chat with Mr. and Mrs. Charles, and while we were there we saw the birds and mammals Mr. Borell had collected and mounted.

The next part of our journey brought us to Gran Quivira. We came upon it unexpectedly, as we thought we were still some distance away. We had seen few pictures of Gran Quivira, and had heard little about it, so we were amazed at its size and dignity as it stood there above us in the late sunlight.

We enjoyed our visits with Mr. and Mrs. Boundey and their boys, and camped within view of the ruin. Mr. Boundey took us on an extended tour, and we walked around the pueblo site quite a bit by ourselves. That is another place where one's imagination can picture all sorts of buried archaeological treasure, even though there has been so much digging for treasure of other sorts.

From Gran Quivira we went to Bandelier. When we arrived there we suddenly discovered that we were tired after two months of nearly steady travel, which had included our rather strenuous trip in the Big Bend. So we set up housekeeping in the fine campground there, and stand ready to recommend the showers and the laundry trays!

It was several days before we visited the ruins, as we wished first to digest some of the information we had received earlier, so we just loafed and enjoyed the beauty of the Canyon. Mr. Hendron loaned us a copy of Bandelier's "Delight Makers", and reading that right on the spot added greatly to our enjoyment. We felt, as Mrs. Richey said, that we could actually pick out the rooms in which the different characters had lived.

We were pleased at being in the first party Mr. Hendron guided all the way to the Ceremonial Cave this year, and we walked around the ruins and up and down the Canyon several times by ourselves. Mr. Peterson

HENNINGS' LETTER (CONT.)

arrived while we were there, and we were glad to meet him, as well as all the others there at Bandelier. When it came time to leave, after almost two weeks, it seemed almost as if we were leaving home.

On our way back through Albuquerque we stopped off for a few minutes to see Earl Jackson and to tell him how much we had enjoyed his Monument. We were very glad to learn that he was improving, and we think that his sense of humor will be one of the things that will help him through the time when he will so want to be back at work. We are counting on hearing reports that he is constantly improving. Betty was not at home, and we were sorry, for we were looking forward to meeting her, also.

A night at Petrified Forest, where we met the Christmans, budding Southwestern Monuments fans just down from Chaco, and we reached Walnut Canyon. The Christmans came in there too, and we spent about a week there together. Paul Beaubien took us for a fine trip around the Canyon, little Heidi Christman and all. We enjoyed the talks with Paul, and the pines, and didn't mind bringing our water out from Flagstaff.

One of the high points of our summer's trip was the Navajo Sing to which Jimmie Brewer took the Christmans and us. We drove over from Walnut Canyon in the morning, and our first couple of hours were devoted to the ruins. Jimmie had told us that the building material was red rock, so we were not as surprised at that as we would otherwise have been, but we were completely unprepared for the fine view of the Painted Desert.

When we all entered the hogan where the sand painting was being made, the Indians looked rather sober for a few minutes, and Jimmie told us they said, "Not good." Jimmie's influence with them seems to be very strong, however, for they let us stay. It was an intensely interesting experience, and surprisingly impressive to those of us who have been educated to think so differently. Doubtless the secret of its impressiveness was the fact that the men themselves seemed so in earnest - not that they didn't laugh and joke among themselves, but that they seemed to really believe in what they were doing. Even little Heidi was overawed, and quiet as a mouse.

Our visit to Wupatki also marked our first "social contact", so to speak, with Indians. Jimmie induced us - we were much more shy than the Indians - to sit down and talk with them. Soon all was going smoothly, with Sarah and Clyde Peshlakai playing very nicely the part of host and hostess. It was the first time we had ever visited any Indians "at home", and we were much interested in the cooking, spinning and weaving. We were also surprised to find that the women were just as interested in Mrs. Christman's knitting of a pink sweater for Heidi as we were in their weaving, and they hung over her quite breathlessly to see how it was done.

HENNINGS' LETTER (CONT.)

Sallie was away when we visited Wupatki, so we didn't meet her, but we hope for better luck on our next trip in that direction.

Sunset Crater we visited on our return trip to Walnut Canyon, and we spent only a short time there, as it was growing late. We hope next time to hike to the top.

From Walnut Canyon we went to the South Rim and thence to the North Rim of the Grand Canyon, there to await the arrival of the Forbes. They and Mrs. Forbes' sister, Miss Renfroe, arrived on June 30, and a day later we were on our way to Be-ta-ta-kin. We went in by way of Shonto, and spent some time sitting on that surprisingly and refreshingly green grass at Mr. Rorick's, under the shade of his mulberry trees.

As you know, we reached Be-ta-ta-kin this time without difficulty, and what an experience it was to spend several hours there. It was Miss Renfroe's first look at a cliff dwelling. Can you imagine seeing Be-ta-ta-kin for your very first cliff ruin?

We were sorry not to meet Milton Wetherill while we were there, but we noted that Mr. Bernheimer's name was just ahead of ours on the register, and concluded that Mr. Wetherill was out with him somewhere. Upon reading the July Report we found that our conjecture was correct.

After camping that night on the slick rock up by the hogans, we headed for Marsh Pass and Kayenta. Much to our surprise, upon following what seemed to be the main traveled road, we got off the road we had traveled both in and out last year. We had gone some distance before we realized it, and as we were going in the right direction we decided to go on and see if it wouldn't come into the Marsh Pass road. We were delighted when it did come out on the highway, right by an abandoned hogan, as we had been dreading that last bad hill and the sand pile at its foot - by far the worst part of the road over which we were directed last year. Is the road we took out a new one, Boss? A little farther on toward Kayenta we found a still different road, with the official Park Service sign for Be-ta-ta-kin, and doubtless would have found a sign directing us onto that road had we not taken the road out we did.

That night we camped in Monument Pass. The Forbes had met the Gouldings two years ago, so they stopped in there to say hello. Mr. and Mrs. Goulding said they'd be up for a chat later, and shortly after dark they arrived. We sat around a small camp fire, and we talked Southwest, and the full moon came up behind those remnants to the east of the Pass, and - well, Boss, you know how 'tis.

The next night we were camped above Arches Canyon on the road in to Natural Bridges. Mrs. Johnson and Zeke came by in the evening on their way to the Bridges, and after talking to Zeke we now have ideas buzzing around in our heads about seeing more of Arches Canyon itself. The next

HENNINGS' LETTER (CONT.)

morning we drove in to the Bridges, and Zeke accompanied us on the hike around the triangle, and could have walked our feet off had he wished. He carried a large water bag, which was a great boon when our small canteen was empty, and whenever we seemed a little tired he talked Navajo to us. We had intended to go only to the Augusta Bridge and back, but Zeke made it so completely plausible that it was much easier to go around by the Caroline that we'd have felt foolish to go any other way.

Thus ended our tour of the Monuments for 1936. We had intended to return to Canyon de Chelly, and to Mesa Verde and thence to Aztec and Chaco, but it was drawing on toward the rainy season, and we had traveled 5,000 miles since the first of May, so we decided we'd have to leave those Monuments, together with the ones we've never seen, for next time.

We wonder, as we think back over this, whether we have stressed too much the joys of camping in the Monuments. That really is part of the fun, though, and we feel that one must see the Monuments in different aspects to really appreciate them. Personally, we'd like to see them at all seasons of the year - yes, even the rainy season, if we didn't have to worry about the roads out.

In conclusion, we wish to assure you, Boss, that we fully realize, and that the fact has been impressed upon us, that we have visited seventeen of "the finest Monuments in the Southwest - or in the country - or in the world". That is, all except one. Paul Beaubien told us to be sure to tell you that Walnut Canyon was the worst Monument - so that no one would try to take it away from him! We feel that you are to be congratulated on being the Superintendent of twenty-five such Monuments, and that it is not alone our privilege but our duty to make our record complete by seeing all the rest.

Best regards to you and all our other Southwestern Monuments friends, and we shall look forward to renewing acquaintance on our next trip in that direction.

Sincerely Yours,

RUTH & MILLARD HENNING

After writing the article on the death of R. H. Kern I read some Utah history and found that I had made a few mistakes. The date of the Gunnison Massacre was 1853 instead of 1854, Gunnison was a captain instead of a lieutenant, and it took place on the Sevier River instead of on the Gunnison. These facts are confirmed by Charles Kelly, so I believe they are surely correct this time.....

RUMINATIONS

I had really thought, since I am to meet you in the north part of my district in a couple of days, that I could rush off at the last minute in a great hurry and leave Charlie to write the Ruminations this month, Chief, but Charlie is pretty sharp about getting out of trouble and I think he suspected my intentions, for he has been pressing me two or three times this morning to "get those Ruminations off your chest because Luis is riding that new Royal high, wide, and handsome on those stencils and he will be calling for your stuff this afternoon."

There isn't much to say about headquarters affairs except that we have cut over to the new electricity this month and are now on a 60 cycle alternating U. S. Indian Service power line. This allowed us to hook up the new electric refrigerators and bid the local ice man a fond farewell. It looks like there is going to be a material saving to the funds by this change and the electric refrigerator has other advantages which the house wives crow over, so everyone but the ice man seems happy over the change. This completes the installation of refrigeration in the quarters of all our permanent employees and by next year we hope to extend it into the most trying of the temporary quarters.

It seems such a short time ago, and as a matter of fact it isn't so many years, since we were so proud of our home made ice boxes and the fact that we could really have ice out here on the desert. Now they are obsolete. Times change! I heard a coyote wail out here in the brush the other night and I felt like going out and kissing him for I imagined he was thinking of the 'good old days' and I was willing to throw in with him and wail a little too, though I expect we would be pretty soft if we were suddenly set back into these good old days. Most of the wailing we here these nights is the static breaking in on KTAR.

It looks like we are really going to get a museum and administration building at Tumacacori out of PWA funds and Gov. and I are going over to Santa Fe from our meeting with you to sit into a discussion with Ansel Hall and Chuck Richey and Art Woodward on any changes to be made in the preliminary plans before the working drawings go on the board. Wish you could come along and enjoy the fireworks. We can't get these boys interested in deep cases with movable backs, and they seem to always want to circulate their visitors to the left and have a lot of other funny ideas. I don't want to play the carping critic too much, but in these times it seems we can't start a museum with less than \$20,000 worth of specialists and cases. Isn't it lucky we didn't know that back in the days when we were running twenty thousand visitors a year through a museum whose cases cost less than fifty dollars and whose labels and maps cost nothing at all? And isn't it good that the visitors didn't know they ought not to enjoy that kind of a museum? Times change! If we weren't getting soft we would have two or three more museums of that old fashioned type working.

Let it be distinctly understood that I am for the specialists and the

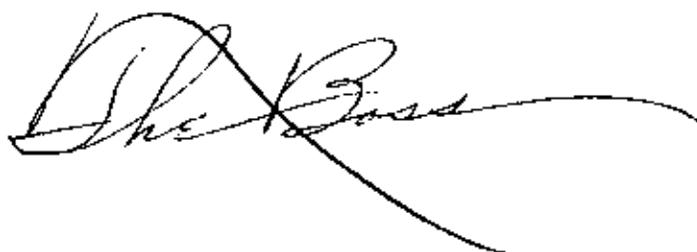
RUMINATIONS (CONT.)

glass cases but don't let us fool ourselves into believing that visitors come to the new type of museum to see either one. If our plans work out we are going to have a lovely building at Tumacacori and the many displays are going to be striking, we think we will be able to build a real impression on the visitor's mind, but I am willing to go on record now with the statement that we can't hold him ten minutes longer in that building than we can at the Casa Grande museum. We will deepen his impression that it is a very wonderful and interesting visit, but I doubt if he can write down any more statements of fact which he has learned than he can after going through the Casa Grande museum. I will be very happy if the visitor statistics prove me wrong in all these statements.

If Tom Charles had a prehistoric ruin under his charge instead of a lovely sand pile, he would have caught what I mean when I said taking care of the visitor was the second most important thing we had to do in the Park Service. Protection was the first duty I had in mind, and then, after we get protection, so future generations can enjoy the monument with as little disintegration, destruction and vandalism as possible, our second duty lies toward the visitor. If you don't believe this let me ask what would happen if one visitor started to cut down a tree in your camp ground or write his name on a prehistoric wall or build a camp fire on top of Tom's beautiful sand dunes, when you were starting to show some other visitors around? Protection would come first and you would show your visitors around later, of course.

and now August passes over into September and we will be able to take the second story off the office thermometer and expect it to stay within the first hundred degrees and we can begin to look forward to the fall and winter work.

Cordially,

A large, stylized handwritten signature in dark ink, appearing to read "D. C. Bass". The signature is written in a cursive style with a long, sweeping underline that extends to the right.