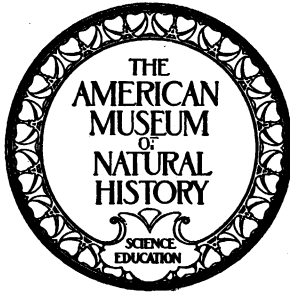


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NOTES ON SOME LITTLE COLORADO RUINS.

BY  
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## INTRODUCTION.

In the suggested chronology for ruins in the Zuñi region, outlined in the preceding pages of this volume, it developed that aside from certain undoubtedly early sites, the ruins of this region fall into two groups. One group, including such ruins as Hallonawa and Hecota'utlla, has decorated pottery sufficiently characteristic to define a local type. The other group includes the historic pueblos, Hawwikku, Mattsakya, etc. It was suggested that there had been a continuous development on the soil within each group: a development which was further probably continuous from one group to the other.

To summarize: this development consisted of a decrease in black-on-white painted ware from 76 percent to about 30 percent with a corresponding increase in corrugated ware. Following this, redware makes its appearance, increasing to 43 percent. From zero to 14 percent it consists of black painted decoration; at the latter point black and white painted decoration appears as well. At about 20 to 25 percent glaze decoration appears; the additional decorations on redware introduced being black glaze, black glaze and white paint, black glaze and white paint on a red ground with black glaze on a white ground. Meanwhile corrugated decreases from 50 or 55 percent to 30 percent, and whiteware decreases from 45 or 50 percent to about 20 percent, then rises somewhat to 27 percent. With the rise in whiteware, black glaze appears as a decorative technique as well as black paint.

In the second group, which includes the historic pueblos, corrugated decreases from 14 percent to 0 or 6 percent on the surface of historic ruins and blackware makes its appearance at 33 percent, increasing to about 50 percent. Redware reappears as the dominant type of painted ware, with identical decorative techniques, at 37 percent, but decreases rapidly to 4 percent, after which it remains stationary. Whiteware, including decorations in black paint, black glaze, and in addition, black paint or glaze with red paint, reappears at 14 percent and increases to 23 percent. Buffware increases at the same time from 2 percent to 22 percent; decorations only in brown paint at first, then in brown and red paint, black glaze, and black glaze with red paint.

As these data stand, a hiatus is left between the two groups which cannot be filled by any data from the vicinity of Zuñi.

Suggestive indications referable to the hiatus were discovered in discussing the distribution of the pueblos (p. 300 *et seq.*). During the period

corresponding to the first group of data there was evidently a shift of population from the lower half of the Zuñi Valley eastward to the continental divide. But the second group, that of historic sites, centers again down the valley where we find the Zuñi today. The available information suggested that had our survey been carried further westward down the Little Colorado Valley, we would have found ruins immediately antedating the historic ruins.

This lack of data would not permit an answer to the question whether there was a genetic relationship between these two groups of ruins. The data which follow give a negative answer: there is no close historical connection between the two groups.<sup>1</sup>

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March, 1918.

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<sup>1</sup> This material was collected on a brief survey of the Little Colorado Valley, in November, 1917. Since my time was limited, an attempt was made to reach only certain ruins which published descriptions, etc., indicated might contain data bearing on this problem; other ruins were seen incidentally. The area visited includes ruins south to the Mogollon Rim and from Zuñi west to Winslow.



## LITTLE COLORADO POTTERY.

The distinctive pottery wares from Mattsakya, an historic pueblo, and Pinnawa, occupied immediately preceding, are black, buff, and black and red-on-white wares (pp. 317-320). The second and third wares are most distinctive, particularly the third.

Buffware is distributed in the following ruins: in the Zuñi Valley, at the historic ruins, Mattsakya and Kyakkima, Hawwikku and Kettcippawa (Sites, 48, 45, 25, and 13) and at Pinnawa (Site 33); on the headwaters of the Little Colorado near Springerville (Site 180) and at two ruins at St. Johns (Site 175 and 176); in the Petrified Forest at "Stone Axe" ruin and Wallace Tank (Site 203); along Silver Creek at Forestdale (?),<sup>1</sup> Pinedale (Site 221), Stott Ranch ruin (?),<sup>2</sup> Shumway (Site 216),<sup>3</sup> at the junction of Showlow and Silver creeks (Site 214), and at "Four Mile" ruin near Taylor (Site 213); on the upper Little Colorado near the railroad at the Cheylon ruin and at the Homolobi ruins, Nos. 1, 2, and 3 (?),<sup>4</sup> near Winslow; on the Mogollon Rim at Chaves Pass and, to judge by the Mearns collection in the American Museum, at some ruins in the valley of the upper Verde River and its tributaries as far south as East Fork.<sup>5</sup> I am informed that buffware does not occur around Flagstaff. North of the Little Colorado, it occurs in several ruins in the Leroux Wash near Biddahoochee,<sup>6</sup> in several in the Jettyto Valley near Awatobi,<sup>7</sup> at Sityatki and about the Hopi mesas,<sup>8</sup> and to the north at Red Lake.<sup>9</sup> Elsewhere it has a sporadic occurrence appearing at a pueblo ruin in the Puerco Valley about five miles below Rio Puerco station (Sherds 29.0-6588), at Gigantes ruin (Site 146) near Inscription Rock, in the Galisteo Basin at Pueblo Colorado (29.0-2628) and Pueblo

<sup>1</sup> Hough, Walter, "Archaeological Field Work in Northeastern Arizona. The Museum-Gates Expedition of 1901" (*Annual Report for 1901, Smithsonian Institution*, pp. 279-358, Washington, 1903), 294.

<sup>2</sup> Fewkes, J. Walter, "Two Summers' Work in Pueblo Ruins" (*Twenty-second Annual Report, Bureau of American Ethnology*, part 1, pp. 1-195, Washington, 1904), 167.

<sup>3</sup> Hough, *ibid.*, 302.

<sup>4</sup> Fewkes, *ibid.*, 29, 30.

<sup>5</sup> Mearns, Edgar A., "Ancient Dwellings of the Rio Verde Valley" (*Popular Science Monthly*, vol. 37, pp. 745-763, 1890).

<sup>6</sup> Hough, *ibid.*, 326.

<sup>7</sup> *Ibid.*, 322; Fewkes, *ibid.*, 621.

<sup>8</sup> Fewkes, *ibid.*, 650.

<sup>9</sup> Fewkes, J. W., "Preliminary Report on a Visit to the Navajo National Monument, Arizona" (*Bulletin 50, Bureau of American Ethnology*, Washington, 1911) 27.

San Cristobal (29.0–2425), and perhaps at other points in the upper Rio Grande, and possibly on the San Francisco River near Luna.<sup>1</sup>

The buffware area may be bounded by a line drawn from Zuñi south to Springerville, west along the Mogollon Rim to the east fork of the Rio Verde, northwest to Jerome, northeast skirting Flagstaff and the Black Falls to Red Lake, southeast to Adamana, and thence east to Zuñi. (Fig. 1).<sup>2</sup>

Black and red-on-white ware is more difficult to trace in published

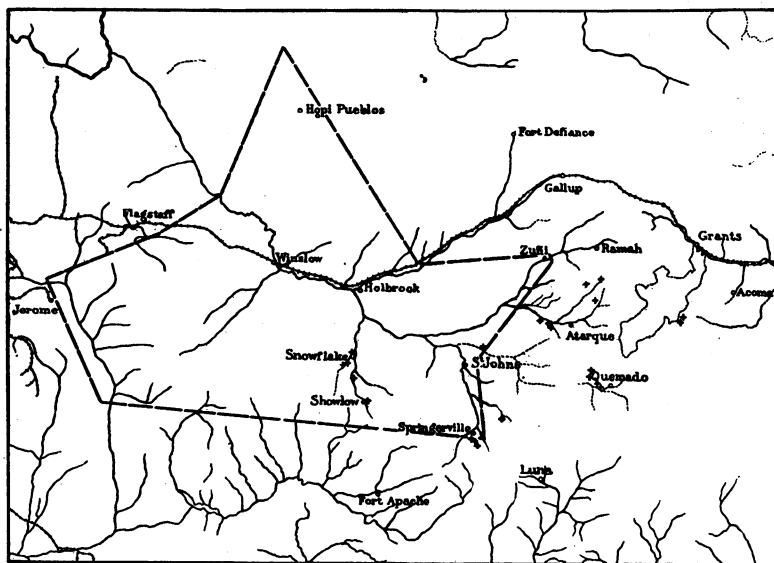


Fig. 1. Map of Buffware Area in the Little Colorado Valley.

descriptions. It lacks the distinctness of buffware, occurs nowhere in large quantity, and therefore has undoubtedly often escaped description. It occurs in the Zuñi Valley at Mattsakya, Kyakkima, Hawwikku, and Kettcippawa (?) (Sites 48, 45, 25 and 13), Pinnawa (Site 33) and at two ruins at Ojos Bonitos (Sites 168 and 170); on the Little Colorado at St. Johns (Sites 175 and 176) and Springerville (Site 180); in the Petrified Forest at Wallace Tank (Site 203) and the "Stone Axe" ruin (?)<sup>3</sup>; on Silver

<sup>1</sup> Hough, *ibid.*, 59 and 63: "Cream-color" ware is mentioned, but if this was like the buffware under discussion, Dr. Hough would probably have said so.

<sup>2</sup> The relation of buffware to the red-and-yellow Kayenta type is not clear; see Kidder, A. V., "Prehistoric Cultures of the San Juan Drainage" (*Proceedings, Nineteenth International Congress of Americanists*, pp. 108–113, Washington, 1917.)

<sup>3</sup> Hough, *ibid.*, 323.

Creek at "Four Mile" ruin and at the junction with Showlow Creek (Sites 213 and 214); on the Little Colorado at Homolobi No. 1; and it also occurs in the Mearns sherd collection from the upper Verde Valley. It probably occurs elsewhere sporadically, as for example, at a pueblo ruin one mile north of Cubero, New Mexico, where glazed ware sherds are mixed with those of the Chaco type (29.0-5800).

That is, so far as the available data show, this ware seems to have a distribution similar to that of buffware except that it does not occur north of the Little Colorado. This ware has a suggestive resemblance to the polychrome ware in black and red on a white ground of the Gila Valley and Casas Grandes. While it seldom bears a decoration in broad areas like most of the Gila ware, nevertheless, the fine line decorations are quite similar. In the present stage of our knowledge, it is not possible to interpret this resemblance as proof of historic contact, for it is equally reasonable to suppose that the type has been independently developed. For example, the red vessels with large white areas bearing designs in black may have suggested the same color combination in the form of black and red lines on white.

Blackware is even more difficult to trace because it has no distinctive characteristics. It is found in modern Zuñi and the historic sites nearby, in Pinnawa (Site 33), at Ojos Bonitos (Site 168), St. Johns and Springerville (Sites 175, 176, and 181), Wallace Tank (Site 203), on Silver Creek at Pine-dale and Showlow (Sites 221 and 217), at the junction with Showlow Creek (Site 214) and at "Four Mile" ruin (Site 213). In addition it appears in a few ruins east of Ramah (Sites 140, 146, 152, and 161). Except in the case of the ware at the historic Zuñi pueblos this type lacks definition. At the other ruins it is probable that we are not dealing with a new type but rather with a variant of corrugated ware. It is extremely difficult to distinguish the corrugated ware of the late sites, usually carelessly made, with coils partly obliterated and roughly indented or incised, from the smooth blackware. Nevertheless, it is suggestive that this ware does not appear at the western ruins, Cheylon, Homolobi, and Chavez Pass, nor among the Verde sherds. I would suggest that blackware is a relatively recent type, an outgrowth of corrugated ware which it finally displaced entirely. The process was somewhat similar to that at Pecos Pueblo, but may be a more recent and more rapid development.<sup>1</sup>

So far as the data go, they show that the historic Zuñi sites are to be classed with those of the western half of the Pueblo area. It is evident

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<sup>1</sup> Kidder, M. A. and A. V. "Notes on the Pottery of Pecos" (*American Anthropologist*, n. s., vol. 19, July-September, 1917), 338.

that the Zuñi have had a cultural growth in common with other peoples in this western area. During this period buffware and black and red-on-white ware were developed. Given the fact that there is no great historical relief to these Zuñi ruins — we found Pinnawa to be the only related older site in the vicinity — the only inference possible is that there was actually a movement of Zuñi from some point in the western area into their present location.

It is not possible to do more than suggest which of the ruins in the buff area are most like the Zuñi ruins. The pueblo ruins at St. Johns and Springerville (Sites 175, 176, and 180) are most like Pinnawa in pottery type, the Ojos Bonitos ruins (Sites 168 and 170), although nearer to Zuñi, are less similar since no buffware appears there. This would bring the Zuñi center about fifty miles down the Little Colorado, but beyond this we cannot go. The pottery in ruins further west in the buff area bears a more general resemblance, but it also bears a similar resemblance to Hopi wares. In the present state of our knowledge, it is not possible to assign any particular ruin to the Hopi or Zuñi; we merely know that they had a common culture growth on the Little Colorado. It is true that some ruins suggest closer relations with one modern group or the other, but the evidence does not warrant any specific statements.

The available data on the proportions of the several wares in these ruins are presented in Table I, but are more readily compared with the pottery of Mattsakya and Pinnawa when classified by ground colors (Table II).

There is no very great disparity between these values yet there is not sufficient evidence for ranking the sites.

Smaller and older ruins in the area visited are equally scarce. On the whole, the pottery in these ruins presents no novelties but must be connected with the older group of sites in the Zuñi Valley.

Tables III and IV give the specific characteristics.

Some of the ruins have pottery showing the influence of Tularosa wares, either the inhabitants were of Tularosa culture, made vessels after Tularosa patterns, or the sherds found are from trade pieces. These sherds are principally from corrugated vessels showing variously thin coils of low relief with close regular indentations, polished black interior, filet edge, etc. The percentages of these wares are shown in Table IV.

In addition, sherd collections made by Mr. Nelson and myself in the

Fig. 2. Brown-on-Buff: upper left, Chavez Pass (29.0-6560); upper right, Site 203 — Wallace Tank (29.0-6453). Black and Red-on-White: Site 203 — Wallace Tank (lower left, 29.0-6438; lower right, 29.0-6436). Bowl 29.0-6438 is decorated with black (or green) glaze on the inside and with black bordered red figures outside. Bowl 29.0-6436 has on the inside triangular red areas filling the angles of the black figures, with angular hooks in red running from the apexes, outside are black bordered red figures.

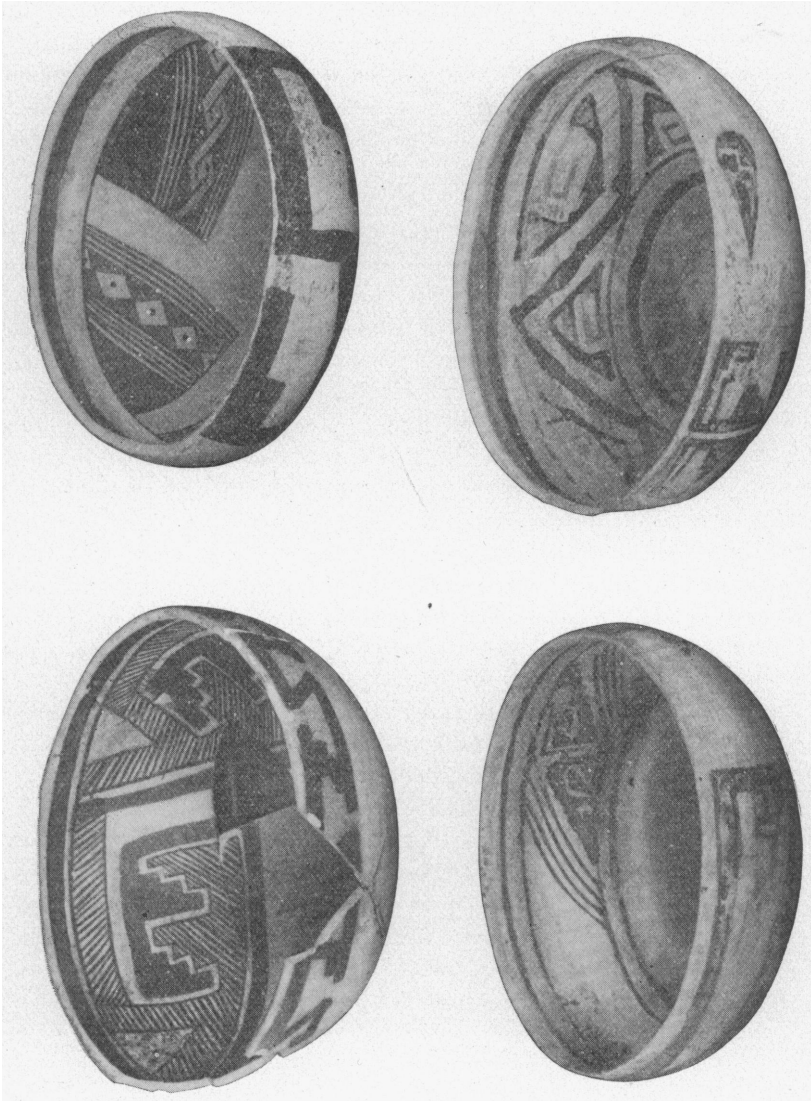


Fig. 2. Bowls of Brown-on-Buff and Black and Red-on-White Types. (See footnote on opposite page).



region between Acoma and Holbrook from the railroad to the Mogollon Rim show the same influence at the following sites: Showlow (Site 217), three ruins south of Springerville (Sites 183-189 ?) and one east (Site 190), Ojo Hallado, Ojo Pueblo (Sites 157 and 153), and to the south at the Delfin Chavez ranch, at two ruins nine miles west of Jaralosa and another fourteen miles west, at several small ruins four miles west of Rito Quemado and at two six miles northwest, and finally several among a group of about twenty-five small ruins in the Cebolla basin west of Acoma. The distribution of the sites is shown by crosses on the accompanying map (Fig. 1).

We now have an answer to our primary problem, the chronology of ruins in the Zuñi region. So far as our data go it appears that there are two fairly distinct groups of ruins in the region. The older group, of which Hallonawa and Hecota'utlla are best known, center around Pescado and Ramah. The recent group of ruins and pueblos belonging to the Zuñi center further west. There seems to be no close historic connection between the two groups, since the Zuñi ruins have cultural connections with an older group on the Little Colorado considerably to the west and these western ruins are not intermediate between the Zuñi ruins and the Hecota'utlla group.

The reader will naturally ask what bearing this result has on the outline chronology presented in the earlier pages of this volume. Did not that chronology assume that all ruins in the region belonged to one culture sequence and then proceed to rank them serially according to an arbitrarily selected standard? It will be recalled, however, that while the Mattsakya-Pinnawa refuse heap sections supplied a suggestion for ranking the ruins in the Hecota'utlla group, which I now believe are not historically related to Mattsakya and Pinnawa, nevertheless both the sequence of the Zuñi group and that of the Hecota'utlla group stand independently proved. The sequence of the Zuñi group was demonstrated by stratigraphic evidence from the Mattsakya and Pinnawa refuse heaps. The sequence of the Hecota'utlla group depended for proof on the variations in other pottery wares which we found accompanying that of corrugated ware. That is, the untenable assumption that Zuñi and Hecota'utlla ruins were part of one culture sequence was not a necessary part of the proof of either of the two sequences. Of course, the final result renders the suggestions regarding the "missing" data belonging in the supposed hiatus unnecessary (pp. 299 and 305.)

The answer to our general problem has a wider interest. The Zuñi region is located almost exactly in the geographical center of the Pueblo area, but our results show on the contrary that this was not the cultural center. In this region are two disparate groups; the earlier group undoubtedly had cultural affiliations outside of the region; the Zuñi group participated in a cultural growth on the Little Colorado in which the Hopi also shared.

TABLE I.  
PERCENTAGES OF POTTERY WARES IN RUINS OF THE BUFFWARE AREA.

Site	Corrugated	Black	Two Color Painted Ware			Three Color Painted Ware			Two Color Glazed Ware			Three Color Glazed and Painted Ware			Size of Sample
			White	Red	Buff	White	Red	Buff	White	Red	Buff	White	Red	Buff	
175 — St. Johns	26	9	11	21	2		8		3	8			12		254
168 — Ojos Bonitos	25	8	13	4			6		4	12			28		191
213 — Four Mile	16	19	11	18	6		11		1	4			14		398
214 — Showlow and Silver Creeks	26	27	12	10	2		13		5	2			3		178
203 — Wallace Tank	23	15	8	12	8		1		1	3			11		421
221 — Pinedale	29	19	15	14	1		5		3	6	1	1	6		315
217 — Showlow	31	7	22	10			16		2				12		137



TABLE II.

## POTTERY IN RUINS OF BUFFWARE AREA BY GROUND COLORS.

Site		Corru- gated	Black	White	Red	Buff	Size of Sample
48 — Mattsakya	Upper	3	49	23	4	22	— <sup>1</sup>
	Lower	9	50	22	4	16	—
33 — Pinnawa	Upper	11	50	16	19	6	—
	Lower	14	33	14	37	2	—
175 — St. Johns		26	9	14	49	2	254
168 — Ojos Bonitos		25	8	17	50		191
213 — Four Mile		16	19	12	47	6	398
214 — Showlow and Silver Creeks		26	27	17	28	2	178
203 — Wallace Tank		23	15	10	44	8	421
221 — Pinedale		29	19	19	31	2	315
217 — Showlow		31	7	24	38		137

<sup>1</sup> Averages, see p. 279.

TABLE III.

PERCENTAGES OF POTTERY WARES IN SMALL RUINS.

Site	Corru- gated	Black	Two Color Painted Ware			Three Color Painted Ware			Two Color Glazed Ware			Three Color Glazed and Painted Ware			Size of Sample
			White	Red	Buff	White	Red	Buff	White	Red	Buff	White	Red	Buff	
169	35	4	55	10											69
171	41		35	14			4		4	2					92
181	47		20	15			8		1	3		1	1		215
192	46		46	2					6						140
195	49		42	9											71
196	53		13	23			8		1	2					182
197	40		44	16											136
198	2		96	2											436
202	54		23	19					2	2					87
218	17		73	10											58

TABLE IV.

PERCENTAGES OF POTTERY WARES IN RUINS WITH TULAROSA TYPES.

Site	Corru- gated Tularosa type	Black	Two Color Painted Ware			Three Color Painted Ware			Two Color Glazed Ware			Three Color Glazed and Painted Ware			Size of Sample
			White	Red	Buff	White	Red	Buff	White	Red	Buff	White	Red	Buff	
173	51 [ 8]		40	9											79
209	54 [10]		25	19					2						133
211	61 [34]		30						9						87
212	51 [15]		21	28											110
215	52 [15]		29	10			2		7						218

## NOTES ON THE RUINS.

The following notes roughly indicate the character and distribution of some of the ruins in the Little Colorado drainage. For the sake of completeness, ruins visited by Fewkes, Hough, and Nelson, but not by myself, are enumerated: Drs. Fewkes and Hough have published descriptions, Mr. Nelson has placed his field notes at my disposal. The list represents a fair survey of the area: it is possible that a few ruins have been overlooked. The small number of pueblos in this area is striking in comparison with the Zuñi Valley.

Sites are listed in order from east to west down the Little Colorado Valley.<sup>1</sup>

## OJOS BONITOS TO ST. JOHNS.

*Site 168.* The Atarque wash runs northwest from Atarque to the Zuñi River at a point about eight miles below where the latter crosses the New Mexico state line. Ojos Bonitos is situated on the wash a mile or two east of the state line and about eight miles southwest of Ojo Caliente.<sup>2</sup> The pueblo ruin<sup>3</sup> at this point is rambling; the main portion about 325 by 125 feet, with several more or less isolated extensions (Fig. 3a). Where cut into for the Mexican ranch houses, now occupying the site, ordinary walls of medium-sized sandstone blocks, roughly squared, laid in mud are to be seen. Basalt manos, obsidian chips, and fragments of selenite were seen. There are no ash heaps here, so a random collection of sherds was taken from the surface of the ruin.

*Site 169.* A mile and a half southeast of Ojos Bonitos the road to Jaralosa passes three or four small ruins and potsherd sites.<sup>4</sup> One of the latter contains pottery of the Chaco Canyon type (29.0-5761). The

<sup>1</sup> To avoid confusion, these sites are listed serially after those described in Part III of this volume. Locations are sometimes given in latitude and longitude scaled from the U. S. Geological Survey maps.

<sup>2</sup> Ojos Bonitos, or Ojo Bonito, is incorrectly placed on the map of the Zuñi Valley and plateau (Fig. 2, Part III, this volume). The Atarque wash flows across the state line where the more northerly wash is shown. This northern wash may join the Atarque wash near Ojos Bonitos or may not have any outlet.

<sup>3</sup> Bandelier, A. F., "Final Report of Investigations among the Indians of the South-western United States, Carried on Mainly in the Years from 1880 to 1885" (*Papers, Archaeological Institute of America, American Series*, vol. 4, part 2, Cambridge, 1892), 339.

<sup>4</sup> These ruins may be referred to by Bandelier, *ibid.*, 339, as a "small-house village." He counted eight structures.

southernmost ruin measures 30 by 60 feet: the others are similar. A surface sample of sherds was taken from this southernmost ruin.

*Site 170.* A rectangular pueblo five or seven miles southeast of Ojos Bonitos on the road to Jaralosa, seen by Mr. Nelson, could not be located. According to his notes, it lies one half mile south of the road. It is nearly square, 135 by 125 feet, quite low and appears old. It is built of fairly regular blocks of sandstone, but set in considerable mud. The outer wall was evidently strongest. The rooms are for the most part small. (Sherds 29.0-5760).

*Site 171.* A straggling pueblo ruin lies on the road from Jaralosa to St. Johns, about twenty miles from the latter (N.  $34^{\circ}-40'-30''$ : W.  $109^{\circ}-6'-45''$ ). The two largest house blocks are each 150 feet long (Fig. 4a). The sandstone walls are fairly distinct. Refuse heaps, two or three feet high, occur to south and east, but excavation would have necessitated making dry camps. Manos appear and sherds are plentiful.

*Site 172.* Mr. Nelson found a potsherd site, but no ruins, on the direct Ojos Bonitos-St. Johns road, about ten or twelve miles from the former. At this point, the road comes over a ridge and gives an outlook over the Little Colorado Valley: it must be near Site 171. (Sherds 29.0-5763).

*Site 173a.* A small ruin is located about ten miles northeast of St. Johns on this road and a mile or two north of Carrizo Creek. It is about 150 feet long, is fairly low and built of lava. (Sherds 29.0-5764).

*Site 173b.* A small house ruin lies a mile north of the Carrizo Creek crossing on the road to Ojos Bonitos via Pine Springs. A surface collection of sherds was made at random.

*Site 174.* There is a potsherd site six miles northeast of St. Johns and one and a half miles south of Carrizo Creek on the Ojos Bonitos road. Sherds are black-on-white and corrugated.

#### ST. JOHNS TO SPRINGVILLE.

*Site 175.* Two pueblo ruins are situated at the south end of St. Johns. The first is 300 yards above the bridge across the Little Colorado on the west bank. The ruin stands elevated twenty feet on the end of a ridge. It is rectangular, about 200 by 75 feet, with a short face at the river bank. The rectangular central depression is divided into two unequal parts, evidently courts. An indefinite structure seems to extend westward for 100 feet. The ruin appears to stand five to eight feet high. The masonry, which shows in one or two opened rooms, is of friable sandstone and is fair. Basalt manos, a grooved maul of basalt, obsidian, etc., were seen. Refuse

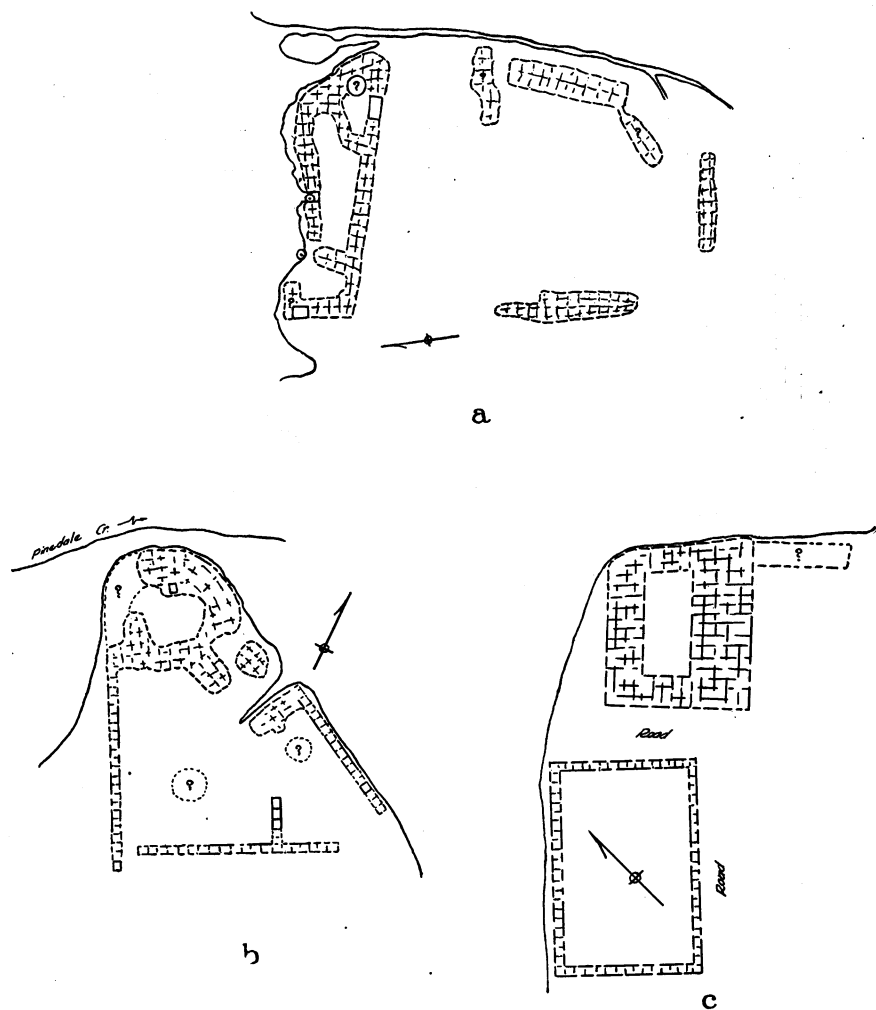


Fig. 3. Plans of Ruins: a, Ruin 168; b, Ruin 213; c, Ruin 221. Scale: 1 in. = 242 ft.

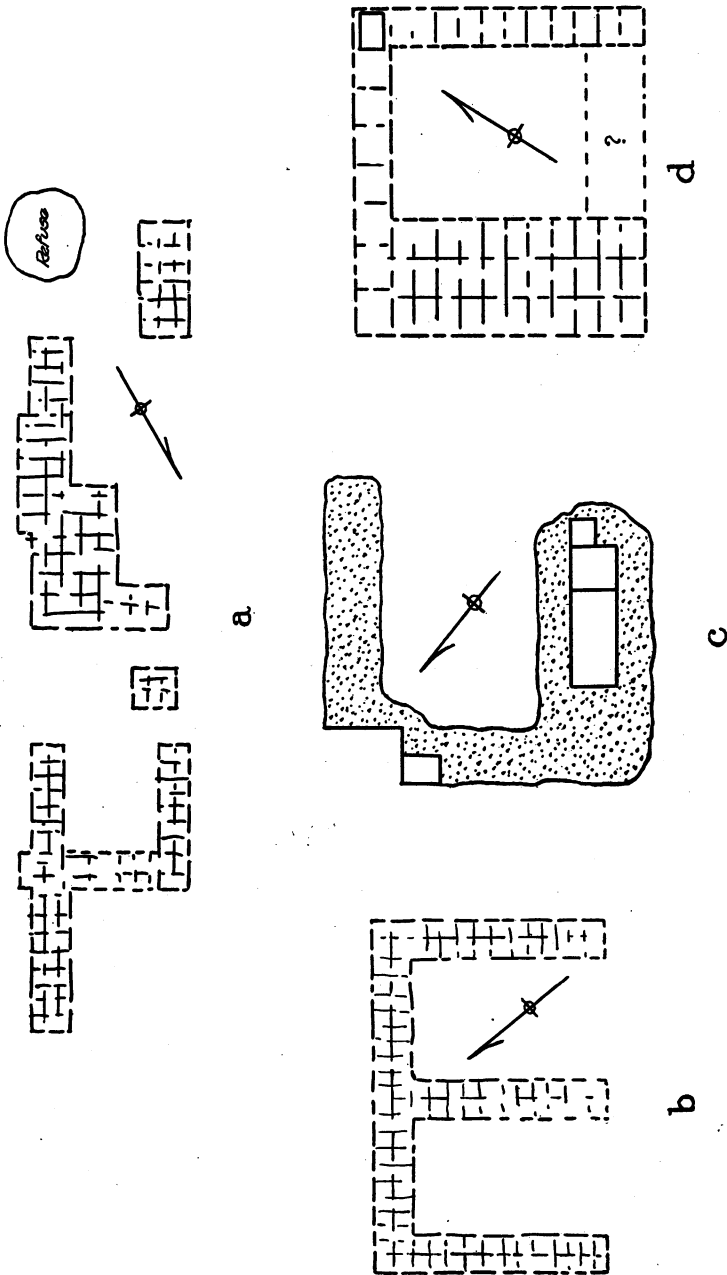


Fig. 4. Plans of Ruins: a, Ruin 171; b, Ruin 196; c, Ruin 209; d, Ruin 212. Scale: 1 in. = 100 ft.

on the sides toward the river has been swept away in recent floods. A random surface collection of sherds was made.

*Site 176.* The second ruin is 200 yards above this on a similar knoll on the same bank of the river. It is quite undefinable and low, but the mound suggests a rough L with arms about 200 feet long. There may possibly be two circular kivas. Some pottery shows on the surface, but it is scarce.

*Site 177.* Immediately west of these ruins an extensive burial ground has been repeatedly dug into and much pottery removed. It extends along the gravel hills for half a mile south of St. Johns. To judge by the pottery, the burials date from several periods.<sup>1</sup> Some building stone was found here. On one knoll 400 yards from Site 176 there are circular depressions and pottery of the slab-house type of Site 14. (Sherds 29.0-5768).

There are said to be ruins in the plain a mile or so south of east of St. Johns.

*Site 178.* Ruins are said to lie at Tule, Tusas, and San Cosme ten miles above St. Johns in the gorge of the Little Colorado. These include pueblo ruins and caves. Bandelier says that the pottery from one of these is like that at the Showlow ruin.<sup>2</sup>

*Site 179.* A ruin at Walnut Grove, eighteen miles south of St. Johns, is reported by Mr. Nelson.

*Site 180.* Four or five miles below Springerville the deep gorge through which the Little Colorado flows suddenly opens out into a round valley. Two sites lie on the east bank of the river just below the gorge. According to Mr. Nelson's notes, the northernmost stands on a small sandstone peak, about one hundred feet above the adjacent river. The ruin is small, compact, and conforming to the peak roughly triangular, 75 by 75 feet. The masonry is very ordinary; sandstone in mud. A small door with a stone lintel is partly exposed, as well as a small loop-hole, eight inches square. (Sherds 29.0-5769).

*Site 181.* A short distance upstream on the same bank is a small pueblo ruin built on a slight knoll at the edge of the bottom land. It is roughly 125 feet square, with the east corner rounded and a jog in the wall at the opposite corner. A small, low, hollow wing runs out to the southwest. The pueblo is very compact and probably with two stories. A few rooms have been opened: dimensions, 8 and 12 feet. The walls are ordinary; large rough sandstone and lava blocks, with courses of thin slabs. Potsherds are scarce, but a random collection was made. Indications of two structures,

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<sup>1</sup> Bandelier, *ibid.*, 386.

<sup>2</sup> Bandelier, *ibid.*, 386, 392.

one of about three rooms, the other of five or six, were seen one hundred feet east. Large stones set on edge had been used in the foundation.

Sherds were found in caves and a rock-shelter in the gorge of the Little Colorado, two or three miles below Springerville.

*Site 182.* Mr. Nelson found a pueblo ruin under the lava cliff about a mile north of Springerville. It is situated on the first terrace below the mesa and is partly protected by rocks rising in front. Near the rectangular pueblo, 110 by 100 feet, is a square structure 40 by 45 feet, possibly for ceremonial use. Several corrals appear on the terrace below. The pueblo walls, laid in mud, are fairly good. (Sherds 29.0-5772).

*Site 183.* Seven sites are located in Water Canyon about two miles south of Springerville near Eager. Mr. Nelson's notes give the following data. Four ruins are strung along the east side of the canyon. The first, a small compact pueblo about 150 feet square with a possible kiva of 25 feet diameter, is built on a slight rise. It is reduced to a hillock with lava boulders lying over the uneven surface. Débris is mixed with the rock but no refuse heap appears.

*Site 184.* A small house ruin lying a quarter mile south contains six to twelve rooms. It is built like Site 183.

*Site 185.* Another house ruin, 30 by 100 feet, lies further south ranging northeast-southwest across the road. There is possibly a kiva at the west end and possibly two additional small houses to the south. The ruin was apparently built of lava boulders.

*Site 186.* The fourth ruin, about one hundred yards south of Site 185, is a small house or houses built partly in the road and partly to the west of it. Few sherds appear here.

*Site 187.* Some distance south is a ruin measuring about 30 by 50 feet. It is built like the above.

*Site 188.* A small ruin lies somewhat north of Site 183 by a walnut grove on the opposite side of the creek. It has the same construction as the above.

*Site 189.* To the west of Site 188 is a medium-sized ruin. It is of boulder construction and difficult to make out; stands four to eight feet high and is rough and uneven on top. It measures roughly 180 by 150 feet with the main axis apparently northeast-southwest. There may be three circular kivas; one about 45 feet across. The pottery from all of these ruins is similar, with the exception of Site 184 where only corrugated and black-on-white appears. (Sherds 29.0-5773).

*Site 190.* About seven or nine miles east of Springerville the highway reaches Coyote Creek. Here, on the left bank of the creek above a spring, Mr. Nelson found a pueblo about 90 feet square with irregular additions and containing a possible kiva 20 to 25 feet across. It is fairly well built of



sandstone and stands from 2 to 6 feet high. Additional buildings to the south were smaller, one 60 by 50 feet, others had two, four, and six rooms. A burial ground lay to the east of the pueblo, measuring 75 by 150 feet. This had been dug up, showing much ash and a portion of a wall or small house. Basalt manos and sherds were seen. (Sherds 29.0-5775).

*Site 191.* Five small ruins lie from three to six miles below the spring along Coyote Creek. Three of the ruins are quite small, perhaps one or two room houses; the others are larger with ten to fifteen rooms. (Sherds 29.0-5774).

I was told of ruins twelve miles east of Springerville, a mile and a half south of the highway on an old road; the ruins being on a mesa above a spring.

#### CAÑADA DEL VENADO TO HOLBROOK.

*Site 192.* A short distance west of the New Mexico boundary the Zuñi River drops through the gorge called Cañada del Venado. Pictographs cover the fallen rocks for miles along the Cañada. There are, undoubtedly, small house ruins on both sides of the river in the Cañada (Deer Spring looks like a likely spot) as well as those mentioned by Bandelier on the ridges above.<sup>1</sup> I counted eight along the west side of the Zuñi from a mile and three quarters above Cedro (the old Windmill Ranch) to within a mile of that place, where a larger house is located. This is of sandstone, rectangular, 30 feet broad and 125 feet long, with a northern end low for 45 feet and probably only one story high while the remainder stands four to five feet high and was probably two stories. A small refuse heap, two or three feet high, lies to the east. Random collection of sherds was made on the surface.

*Site 193.* A small house ruin lies one half mile north of Cedro on the west bank of the river.

*Site 194.* Another small house ruin lies one quarter mile west of the ranch house at Cedro. Other small house ruins probably lie nearby.

*Site 195.* From Cedro an old road to Hard Scrabble Ranch runs westward onto the mesa. After traveling five miles north and west of Cedro the Hard Scrabble draw is reached. A small house ruin, 10 by 20 feet, lies at the eastern rim of the draw, opposite the ranch house and a half mile from it. A random collection of sherds was made. Three more small ruins lie within one hundred yards east of this one and others may be scattered around the draw.

*Site 196.* The pueblo ruin at Hard Scrabble (N. 34°-49'-20"; W.

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<sup>1</sup> Bandelier, *ibid.*, 339.

109°-15'-30'') lies north of the ranch house and dam. It is E-shaped with the arms extending down a slight slope (Fig. 4b). The main section measures 185 feet; the three arms appear to be of the same length, 120 feet, but their outer ends are indefinite. The whole sandstone structure is low and covered by drifted sand. Sherds are plentiful, but there is no perceptible ash heap.

*Site 197.* Following the road westward (or about 20° south of west) from Hard Scrabble toward the Long H Ranch for about five miles the remains of a tank and ranch house called Prospect are found (N. 34°-48': W. 109°-20'). A road from the St. Johns district along the Navajo Mesa into the country eastward of Jacob's Well passes nearby. A fair sized pueblo is located on a high sand knoll a mile east of Prospect and south of the Hard Scrabble road. It is built of sandstone, now low and buried in sand, roughly rectangular, 100 feet by 20, with long axis north and south and possibly with some additional isolated rooms to the east. A random collection of sherds was made from the surface here.

*Site 198.* Due west of Prospect is the Long H Ranch at the twin Salt Lakes. This is said to be eleven miles from Hard Scrabble. The road from St. Johns to Navajo on the railroad runs through this point. Débris covers a large area on the low sand mounds a half mile west of the ranch house. Potsherds, manos and metates were seen, but practically no building stone is present. Structures here may have been built of adobe, but this seems unlikely, in view of the character of the soil in these sand wastes. The point is not clear, but certainly these were not stone buildings. The potsherds, which lie about in enormous quantities, are of the slab-house type except that a small amount of old redware also occurs. A circular stone slab, 16 inches in diameter, 1¼ inches thick, was seen.

Seven Springs lies eight or ten miles south of west of the Long H Ranch and about the same distance east of south of No. 5 Ranch. A pueblo ruin is said to lie on top of a mesa a quarter mile southeast of Seven Springs. It is described as a long row of rooms in a mound, very indefinite, but perhaps 200 yards long by 25 wide.

Ten miles southwest of Seven Springs Concho Creek empties into the Little Colorado at Hunt.<sup>1</sup> Bandelier mentions caves and pueblos on the Creek,<sup>2</sup> but evidently did not visit them, and Mr. Nelson was told of a ruin at Concho, but I was assured by several natives that there were no ruins there, although the place looks likely enough.

Eighteen miles west of south of Concho are Vernon and Mineral. Years

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<sup>1</sup> North of Hunt are the two mesas called "Zuñi Mountains," between which the Zuñi River flows. The sacred lake, *KoLuwala*, lies at the southern foot of the southern mesa and on the mesa above is the entrance to the ceremonial cave.

<sup>2</sup> Bandelier, *ibid.*, 386.

ago the Harris brothers took pottery, etc., from a cave, now called after them, a mile or so above Mineral on Mineral Creek.

*Sites 199-200.* About ten miles west of the Long H Ranch across the Navajo Ridge the road comes out on Milky Hollow at No. 5 Ranch. There is said to be a pueblo ruin here somewhere in the vicinity of the ranch house. Continuing south of west through upper Milky Hollow<sup>1</sup> toward Potter's Ranch nine miles away (Township 16, Range 25, Section 12) two small ruins are passed. The easternmost is about three and a half miles from No. 5 Ranch near a tank and abandoned houses. Potsherds, etc., are scattered about the wash and sand hills here. The second, one and a half miles west, is little more than a potsherd site.

*Site 201.* Dr. Hough found a village of small and rudely built houses on the western side of Milky Hollow near its head.<sup>2</sup> This was about nine miles east of the Petrified Forest and should be near the road from Potter's Ranch to Navajo. The scarcity of building stone suggests that this may be a slab-house site.

Small ruins are said to be scattered all around the edge of the upper Milky Hollow, potsherds occur everywhere and I was assured that every little sand knoll all through this country in the Milky Hollow and eastward bore potsherds, alternately uncovered and reburied in the shifting sand.

*Site 202.* Leaving Potter's Ranch, a road runs six miles southwest along Milky Wash to the old Greer Ranch, whence a road leads off out of the hollow to the north toward Adamana. About three miles north from the Greer Ranch is a small house ruin by the road. Sherds were gathered at random here.

Another small house ruin is said to lie a mile and a half to the southwest.

*Site 203.* Four or five miles further north on the Adamana road is a large ruin at Wallace Tank (N. 34°-52': W. 109°-45'-30"). It is about three miles southeast of the Natural Bridge in the Petrified Forest which stands a short distance to the west of the Adamana road. The ruin consists of low mounds scattered over the sand hills by the tank for 650 feet north-west by southeast. It is very indefinite in outline, the sandstone walls being buried by drift sand. The ruin has been partly dug into, while the cemetery to the east has been plundered. The Museum was fortunate in securing a large collection of pottery from the graves. Potsherds cover the ground, so a random collection was made. A stone disk, twelve inches in diameter,

<sup>1</sup> The Milky Hollow is incorrectly marked on the U. S. Geological Survey Sheet, St. Johns Quadrangle. The Milky Wash runs from No. 5 Ranch westward by Potter's Ranch and southwest to the Little Colorado about ten miles above Mexican Crossing. On the topographic sheet the word "Hollow" lies in upper Milky Hollow, the word "Milky" in Seven Springs Hollow.

<sup>2</sup> Hough, *ibid.*, 319.

similar to that of Site 198, was seen here. The tank here probably occupies the position of an aboriginal reservoir. This ruin may be Hough's "Stone Axe Ruin"<sup>1</sup>: its position agrees with his description of the position of "Stone Axe" but does not agree with his map. If not the same ruin, "Stone Axe" must be nearby, yet had there been another large ruin near the Wallace Tank site I would certainly have been told of it.

Dr. Hough notes other small ruin to the west and southwest of "Stone Axe".<sup>2</sup>

*Site 204.* Dr. Hough describes an unusual ruin, the "Metate Ruin",<sup>3</sup> across the wash from the natural bridge in the Petrified Forest and three small ruins on the bluff above.

*Site 205.* A few miles west are the four Canyon Butte ruins described by Dr. Hough. They lie "close to the northern escarpment of the chief basin of the Petrified Forest, at the source of a wash flowing southwest and entering the Little Colorado at Woodruff. The country is high and rolling, sloping west and south from the rim of the Puerco Valley, which stands about two miles north of the ruins."<sup>4</sup> Other ruins in the vicinity are marked on his map.

*Site 206.* A ruin 150 feet square located near Adamana is described by Dr. Hough.<sup>5</sup>

#### SILVER CREEK: HOLBROOK TO PINEDALE.

A survey of ruins along Silver Creek and its tributaries was made some years ago by Mr. Joseph Peterson of Holbrook. His unpublished map is reproduced here (Fig. 5) by courtesy of the University of California to show a number of ruins not visited by other investigators.

*Site 207.* There are remains of terraces and house structures on the south side of Woodruff Butte about ten miles above Holbrook. Other house remains are on the summit.<sup>6</sup>

There is said to be a cliff house seven miles above Holbrook on the south bank of Silver Creek.

*Site 208.* My companion, Mr. Tom Greer, found only one of the four ruins shown by Peterson in Five Mile Draw (five miles below Snowflake). It is a small house ruin, with little masonry showing, about midway between

<sup>1</sup> Hough, *ibid.*, 320-325.

<sup>2</sup> *Ibid.*, 321-325.

<sup>3</sup> *Ibid.*, 318.

<sup>4</sup> *Ibid.*, 309.

<sup>5</sup> *Ibid.*, 317.

<sup>6</sup> Fewkes, *ibid.*, 135, Hough, *ibid.*, 318.

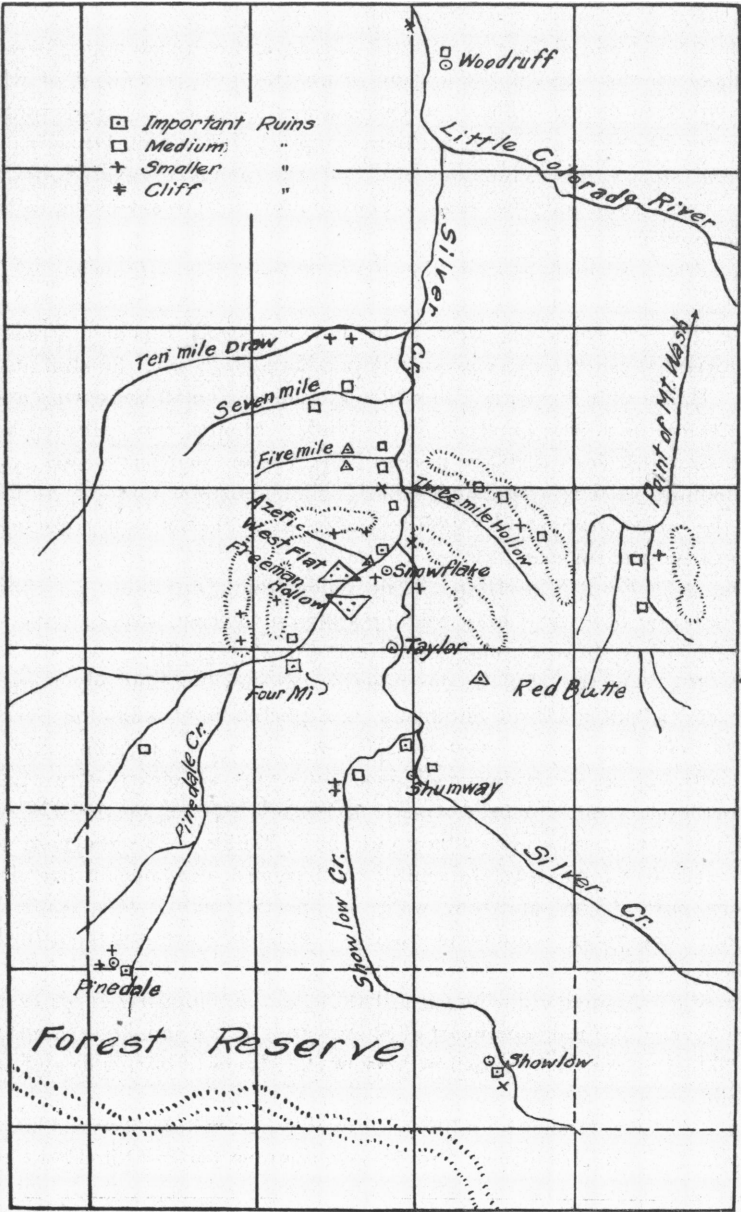


Fig. 5. Sketch Map of Ruins on Silver Creek.

Silver Creek and the Holbrook-Snowflake road. We searched for the other three ruins which must be small.

*Site 209.* Flake's Ruin is situated a mile and a quarter northwest of Snowflake on the edge of the lowland a quarter mile southwest of where Silver Creek boxes up. The ruin lies on a low knoll, is U-shaped, roughly 80 feet by 70 (Fig. 4c). The southern section is fairly high but not more than one story. The sandstone walls of the rooms excavated by Mr. Peterson still stand four feet high. The cemetery to the east seems to have been dug into.

*Site 210.* A small ruin in the town of Snowflake was seen by Mr. Nelson.

*Site 211.* A road due west from Taylor crosses Pinedale Creek or Cottonwood Wash two miles away. A potsherd site lies on the bluff at this point. Half a mile downstream on the east side is a small house ruin about 70 by 20 feet on a little knoll below the bluffs. Sherds were collected here.

*Site 212.* A short distance north of the Taylor road on the west bank is a medium sized rectangular pueblo. The sandstone masonry is fairly clear, the building about 75 by 85 feet (Fig. 4d). Sherds were collected at random from the surface.

*Site 213.* Four Mile Ruin<sup>1</sup> (four miles from Snowflake) is situated half a mile south of the Taylor road crossing on the east bank of the creek. The ruin covers an area roughly 400 feet across (Fig. 3b).

*Site 214.* On the bluff in the junction of Showlow and Silver creeks, a mile and a half north of Shumway, is a pueblo ruin extending over an area 200 feet from east to west by 250 feet. It is very irregular and has been badly cut up by irrigation ditches, but seems to consist of two parts. The northern rectangular part is made up of an L 200 feet on the side, with a building in the hollow side filling out the rectangle. The southern part is an L, 125 feet long, with the end of the long arm near one corner of the northern part. The sandstone walls, in opened rooms, show courses of chinking. One room is nine feet square. Potsherds are not plentiful but a collection was made.

*Site 215.* A small ruin lies on a little ledge one hundred yards east of Silver Creek, a half mile northeast of Shumway. It is a small place, perhaps 50 by 60 feet, of tumbled sandstone masonry: Manos of lava and sandstone lie about.

*Site 216.* Dr. Hough found a small pueblo somewhere near the last.<sup>2</sup>

*Site 217.* A pueblo ruin in Showlow on the west bank of Showlow Creek

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<sup>1</sup> Fewkes, *ibid.*, 136-164

<sup>2</sup> Hough, *ibid.*, 302.

has been described by Bandelier and Hough.<sup>1</sup> Several excavated rooms exhibited fair masonry of good-sized sandstone blocks laid with regular courses of chinking. Manos, metates, axes, a rectangular stone hatchway with an opening two feet square, four painted slabs from shrines bearing animal figures like those in bowls from this ruin, turquoise, and obsidian chips were seen. Sherds are scarce, but a sample was collected.

Bandelier mentions small house ruins a short distance to the south.

*Site 218.* The road from Showlow to Pinedale crosses the Linden Valley. About six miles from Showlow and a mile and a half before reaching the Linden Valley there is a potsherd site alongside the road. No building stone shows but it is undoubtedly buried under the cedars. A random sample of sherds was taken.

*Site 219.* A ruin, called Pottery Hill, is situated near Linden. Small house ruins are located nearby.<sup>2</sup>

*Site 220.* Two miles west of Pottery Hill are two smaller ruins, one rectangular, the other circular.<sup>3</sup>

*Site 221.* A large double pueblo, or perhaps two pueblos, is situated half a mile west of Pinedale on a spur running east to Pinedale Creek (Range 20, Township 11, Section 32). The present schoolhouse stands on the south side of the ruin. The rectangular western pueblo, 270 by 185 feet, is one room wide with a central plaza. The irregularly rectangular eastern pueblo is several rooms wide and high, about 200 feet square, also with a central court (Fig. 3c). The walls are good sandstone blocks laid with courses of chinking; in the western pueblo, rooms can be readily made out. Ash heaps extend along the southeast side of the eastern pueblo, but have been turned over by pottery diggers; one new hole is five feet deep. Sherds were collected here.<sup>4</sup>

*Site 222.* A smaller ruin is said to be three-quarters of a mile west of Pinedale against the mesa and several small house sites within a few miles west.

In addition to the foregoing, we have notes on Homolobi No. 1, and the Cheylon Ruin.

*Homolobi No. 1.* This is about three miles northeast of Winslow on the north bank of the Little Colorado.<sup>5</sup> The river has cut its way through the ash heaps close to the south wall of the pueblo. These are five to seven feet deep but mostly sand. Mr. Nelson, by scratching in the bank, could find

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<sup>1</sup> Bandelier, *ibid.*, 392; Hough, *ibid.*, 301.

<sup>2</sup> Hough, *ibid.*, 297.

<sup>3</sup> *Ibid.*, 298.

<sup>4</sup> Fewkes, *ibid.*, 164.

<sup>5</sup> Fewkes, *ibid.*, 23.

no buff sherds in the lower part although it predominates at the surface. I did not notice such a difference.

*Chevron Ruin.* This ruin is situated on a little hill or spur on the west side of Chevron Creek.<sup>1</sup> The creek empties into the Little Colorado from the south about fifteen miles east of Winslow. The ruin lies near the dam just below the point where the highway crosses the gorge. It consists of a compact section and a hollow rectangle; the whole about 500 by 300 feet. Three potsherd sites with a little masonry but practically destroyed by the creek and buried in sand lie within a half mile north of the highway on the west bank.

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<sup>1</sup> *Ibid.*, 30.