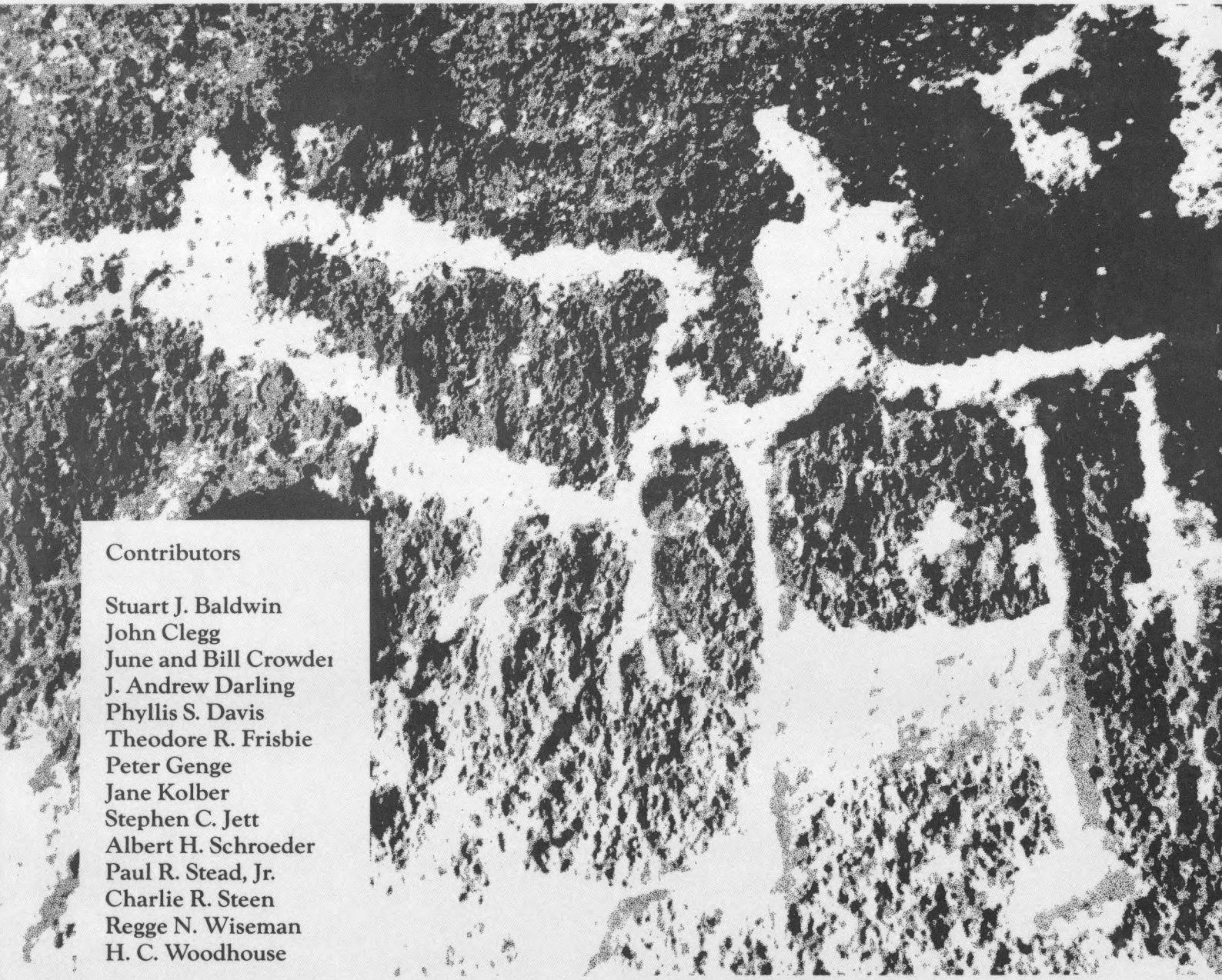
BY HANDS UNKNOWN:

PAPERS ON ROCK ART AND ARCHAEOLOGY

In Honor of James G. Bain



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THE ARCHAEOLOGICAL SOCIETY OF NEW MEXICO: 12

Edited by Anne Poore

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IN HONOR OF
JAMES G. BAIN

Anne V. Poore
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Awanyu Newsletter

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Fig. 1. Jim and Nan Bain photograph by Crowder.

JIM AND NAN BAIN
PICTOGRAPH/PETROGLYPH PATRONS

JUNE AND BILL CROWDER

Some years ago, an opportunity for volunteers to participate in a program to record the vanishing rock art of Chaco Canyon was the subject of an article in "New Mexico Magazine." A discussion of the activities and objectives stimulated our curiosity. It sounded exciting, and certainly different from previous vacations, so we wrote for additional information, sent in the application, and were accepted.

When we arrived at the Chaco Canyon campground, we were met by two very friendly, helpful and enthusiastic people - Jim and Nan Bain. It did not take us long to realize that the Bains have a special talent for interacting with people, making them feel welcome and forming immediate, deep friendships. The week at the field school was one of accomplishment, fun and camaraderie.

We have attended several rock art field schools now, at various locations. They have all been fun and rewarding, but the greatest benefits are in maintaining the relationship with Nan and Jim and in sharing their interest in rock art. As we grew closer to them, important milestones in their lives became known to us. We would like to share a few of them with you here.

Jim was born in San Francisco in 1907, one year after the big earthquake. He attended high school in Washington, D.C. where he met Nan, a Washington native. He entered the U.S. Military Academy at West Point in 1924 and graduated as a 2nd Lieutenant, U.S. Army in 1928. He and Nan were married a year later. They have had three children, two of whom are still living. Their son, Paul, is a radio disc jockey in Shreveport, Louisiana, and their daughter, Edith, raises horses and dogs in the South Valley of Albuquerque. They are also quite proud of their three grandchildren and two great-grandsons.

Until the end of World War II, Jim was an antiaircraft artillery officer. After the war he transferred to the Ordnance Corps and received assignments involving research and development of guided missiles and nuclear weapons. He also assisted in the establishment of White Sands Missile Range. From 1950-53, he was stationed at Sandia Base, followed by three years back in Washington, D.C. In 1956, he was reassigned to Sandia at which time the Bains purchased their current home. Two years later, Jim retired from the service with the rank of colonel.

Jim and Nan were always interested in archaeology, visiting sites, monuments and parks whenever possible as the Army shifted them around the country. They joined the Archaeological Society of New Mexico in 1963, and are charter members of the Albuquerque Archaeological Society, where Jim spent 2 years as vice-president and program chairman and then a like time as president. Jim has been on the state board of trustees since 1971, and has been treasurer, vice-president and then president of the state society. For some time he has been executive secretary. Jim and Nan are also members of the El Paso Archaeological Society, and more recently, the South African Archaeological Society.

For several years during the 1970s, Jim attended the archaeological seminars at Ghost Ranch working with Dr. Florence Hawley Ellis as a crew member and crew chief in her Gallina Culture Project. Jim has also conducted field trips to rock art sites

for members of the Archaeological Society of New Mexico, the Albuquerque Archaeological Society, the Historical Society of New Mexico and numerous other organizations in Albuquerque and Santa Fe.

Jim has presented papers on rock art at meetings of the American Rock Art Research Association, the Speleological Society of America, the Southwest Federation of Archaeological Societies, and the South African Archaeological Society. Less technical talks, stressing the need for preservation of rock art, have been given to public groups such as senior citizens, various service organizations and students of the public schools, including one group from the San Felipe Pueblo Elementary School.

In 1967, Al Schroeder, the state society president at that time, proposed a rock art recording program for New Mexico to be performed by local people in their home areas. Under this program, the Bains recorded much of the rock art of the Albuquerque area. At about the same time, Ruth Armstrong, Tourist Director for the Albuquerque Chamber of Commerce, asked Jim to establish a program for tourists who had shown an interest in New Mexico archaeology. Jim felt that a digging program would not be practical because the time-scale associated with a normal dig would not give the average tourist a feel for overall archaeological problems and would not provide many opportunities for exciting finds. Jim proposed using interested tourists to aid in rock art recording in Albuquerque's West Mesa area, developed the program mechanics, and got it going. With more than 400 publications across the country carrying notices, people came from all over the nation, and the Tourist Field Schools were very successful.

The Archaeological Society of New Mexico then requested that Jim set up a field school with a broader charter and more expansive goals than the Tourist Field School, which Jim did. The first year of the Rock Art Field School was on property near Farmington owned by Harry Hadlock, followed by schools at Largo Canyon, La Cienega, Chaco Canyon (6 years), Reserve (4 years) and in the Mimbres area in 1985.

Through the schools, a large number of rock art sites have been located, photographed, and scientifically recorded, and the information placed in the files of the Laboratory of Anthropology in Santa Fe. Industrial and urban development, vandalism and the natural forces of erosion are taking their toll on New Mexico's, and Southwestern, rock art. It is vital that as much information as possible be quickly gathered and properly saved - the Bains' field schools have proven to be a valuable contribution to the process of scientifically collecting and saving large quantities of information.

Establishing and running a successful field school is no picnic. The general area for the survey must be selected, with both archaeological potential and overall site suitability carefully considered. Once an area has been selected for the school, much advance planning is required to be certain that participants are in a safe and relatively comfortable environment. The mechanics of caring for the needs of 30 to 40 people for 2 weeks each year is not simple. Fresh water, toilet facilities, emergency plans, and a suitable campground located close to the survey area are among the many factors that must be considered. Extensive coordination efforts are required with landowners, both private and government. The Bains spend many hours and travel many miles each year in the site selection and coordination process. Recently, Jim asked Jay Crotty to act as Field Supervisor for the school, and Jay has

begun to assist Nan and Jim in the planning, logistics, and management of the school.

Interest in rock art has provided the impetus for many personal trips. To view rock art, Nan and Jim have visited the caves of France and Spain as well as Australia, South America, Easter Island, the Scandinavian countries, Canada, Mexico and South Africa.

Jim took an active part in making Petroglyph Park on Albuquerque's West Mesa an actuality. Working with Ruth Armstrong of the Chamber of Commerce, he spent weeks trying to get suitable land in the area donated for the park, and finally received such a bequest from Mr. D. W. Falls. Simultaneously, Ruth Armstrong worked with the state legislature and got a commitment from that body to foot the bill for park improvements if the land were donated. With the park assured, Jim participated in planning and development, such as laying out roads, picnic areas, and other facilties necessary to operate the park.

It is very obvious that Jim and Nan are not merely interested in rock art - they are actively engaged in its preservation and have contributed greatly to knowledge in the field. Their contributions have been recognized: In Santa Fe, they received the Governor's Award of Honor for Historic Preservation as a result of their developing and running the rock art field school; last year in Silver City, they were given a certificate of appreciation from the New Mexico State Legislature for their contributions to the establishment of Petroglyph Park and the rock art field school. A proud moment for Jim was when he received the Amateur Achievement Award from the Archaeological Society of New Mexico in 1970 for recording rock art in the Albuquerque area.

Jim's contributions to the preservation of archaeological resources of the state are widely known. "The woman behind the man" is frequently used to describe the wives of famous men. In the Bains' case, however, Nan is "the woman beside the man." She is an equal team member and is instrumental in keeping the field school flowing smoothly. She assists Jim in selecting compatible team members, making on-site inspections, providing much of the logistics planning and support, making a group of strangers with varying backgrounds immediately feel at home, and handling the myriad of unexpected crises that always occur when people are brought together for an extended time period. Her contributions to "The Bain Team" are vital. Nan downplays her role, but Jim is quick to state, as are the field school participants, that Nan is an equal partner.

Those of you who know the Bains know how much they have done for archaeology and how successfully they have done it. The honor of having this volume dedicated to Jim, only the third such volume dedicated to an amateur, is richly deserved. Those of you who don't know them should make every effort to meet Jim and Nan. You will never know two more wonderful people.

Santa Fe, New Mexico

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THE BIRDS OF LA CIENEGA MESA

PAUL P. STEED, JR.

In June 1974, the Archaeological Society of New Mexico Rock Art Field School was conducted by Jim Bain at La Cienega Mesa some 15 miles southwest of Santa Fe, New Mexico. Site reports and photographs were filed with the Laboratory of Anthropology, as are all reports of the Rock Art Field School. Some 1,083 petroglyphs were recorded.

Cienega means marshland and is the name of a creek flowing on the east side of the mesa. The USGS map does not name the mesa, but we have called it La Cienega, after the creek and the small settlement adjacent to it. The Santa Fe River is on the west side of the mesa, and their confluence marks the west side of the mesa. About 10 miles to the west, the Santa Fe river flows into the Rio Grande.

The Mesa is of igneous origin, and for statistical purposes, I divided it into several sections, as shown by the sketch map. These are the Butte, Saddle, Areas 1, 2 and 3, West Mesa, Trail and Base of Mesa. The great majority of the petroglyphs were on the cliffs of the Butte, and areas 1, 2 and 3, with only a few on the trail and at the Base of the Mesa. There were also a large number on the west side of the mesa, which is not shown in the sketch.

In a previous paper (Steed 1977) I called attention to the distribution and intersite variation of the anthropomorphs, zoomorphs, and abstract designs.

One of the most unusual things about this rock art site is the large number of bird petroglyphs. Of the total petroglpyhs 33 percent were zoomorphs, and of these 42 percent were birds, for a total of 156 bird petroglyphs. In most rock art sites such petroglyphs are nonexistent. The Chaco Canyon Survey, by the society's Rock Art Field School (a 7 year project) recorded only a handful. At La Bajada Site some 5 miles to the southwest, there are one or two possible bird petroglyphs. But at the Volcano Cliffs Site, near Albuquerque, some 18 bird petroglyphs were recorded, for a percentage of 39 of the zoomorphs, somewhat similar to this site.

Bird petroglyphs were fairly evenly distributed throughout the site.

	Number of Bird Petroglphys	Percentage of Bird Petrolyphs
Butte	14	44
Saddle	2	25
Area 1	36	60
Area 2	49	72
Area 3	11	65
West Mesa	36	59
Trail	5	80
Base	3	38
Total	156	

If we eliminate the Saddle, Trail and Base, where only 10 bird petroglyphs were found in total, we find all areas fairly close to the average of 60 percent of the zoomorphs. Only on the Butte was there much of a variation, or 44 percent of the total.

After 20 years of recording southwestern rock art, I know of no other site with as many bird petroglyphs. Volcano Cliffs has only 39 and those on La Cienega are of a far greater variety and better execution. Bird petroglyphs seem to be found in number only along the Rio Grande, and are unknown in many areas of the Southwest. The reasons for this are impossible to determine at the present state of the art, but obviously birds were important to the artists of La

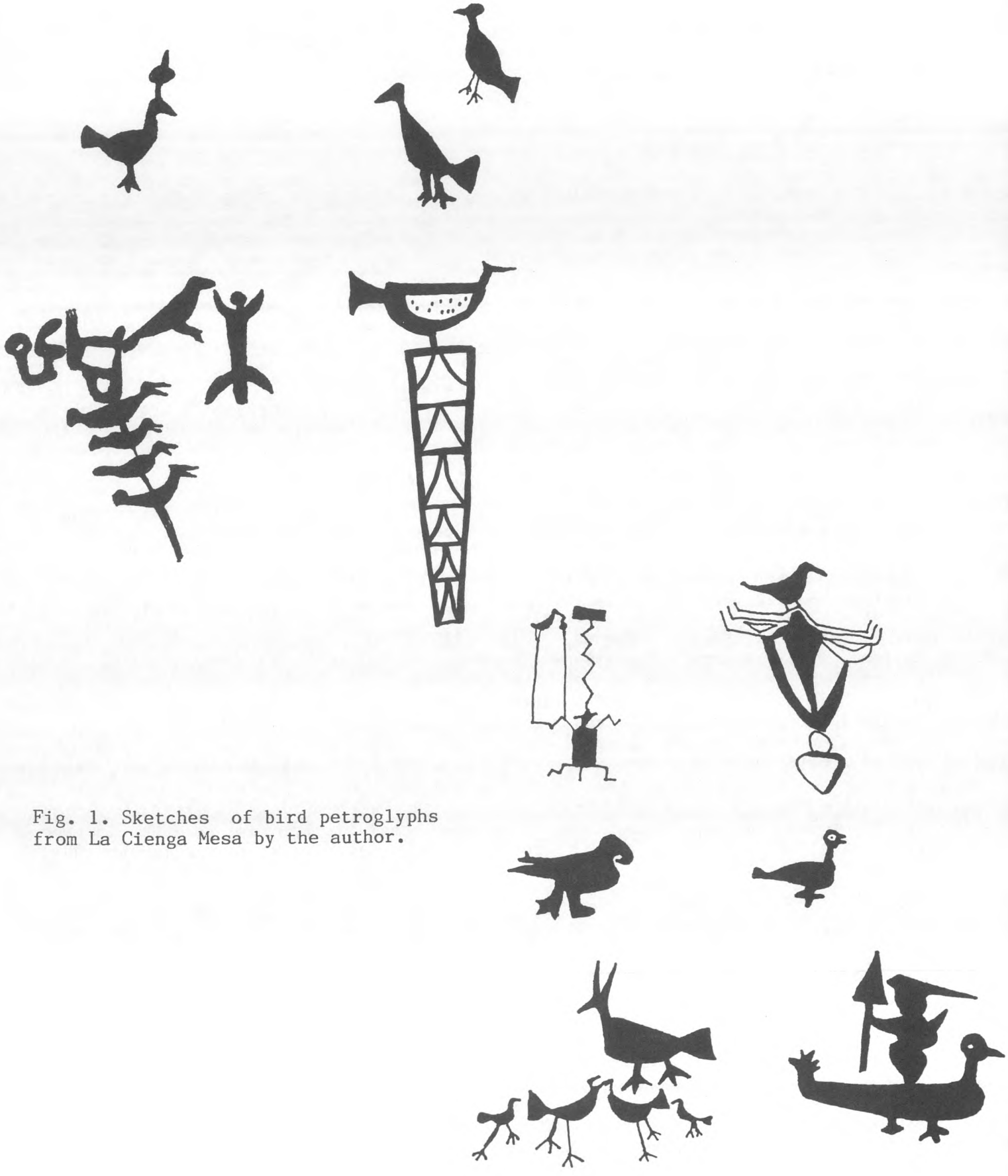

Fig. 1. Sketches of bird petroglyphs from La Cienga Mesa by the author.

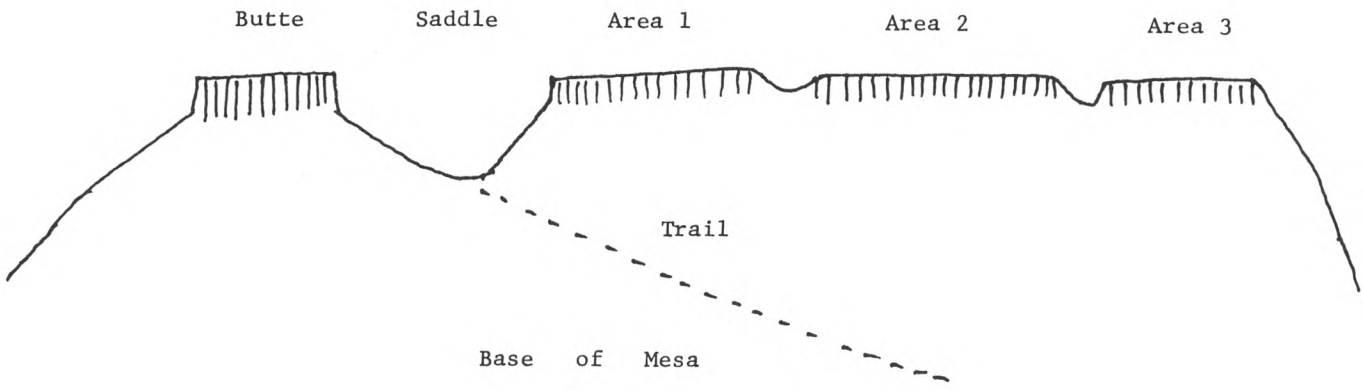

Fig. 2. Author's sketch of La Cienga Mesa.

Cienega Mesa.

It is impossible to date petroglyphs. However atop the mesa there is a mound marking the site of a Pueblo III ruin. Santa Fe Black-on-White pottery, dating somewhere around AD 1250 was found here. North of the mesa is Cerro Seguro, which means Hill of Safety. We searched the area for a shrine or fortification, but found only a lone petroglyph.

The contributions of Jim Bain to New Mexico Rock Art are considerable. He has organized and supervised many thousands of man (and woman) hours of work in recording rock art. He has trained dozens of people from all over the country in the techniques of recording and reporting rock art. Future researchers will be in his debt for the fine reports and photographs filed over the years with the Laboratory of Anthropology.

Steed, Paul P., Jr.

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THE MOUNTAIN LION IN TOMPIRO STONE ART

STUART J. BALDWIN

It comes alive
It comes alive, alive, alive.
In the north mountain
The lion comes alive...

> Song of the Eagle Man of Acoma in consecrating a new fetish (Stirling 1942: 23).

This is an initial investigation of the mountain lion's place in the culture of the Tompiro Indians of Abo Pass, central New Mexico. Since this segment of the Pueblo Indians is now extinct as an ethnic group, there is no possibility of securing more data through ethnography, and, unfortunately, the Spanish Colonial records make no mention of the mountain lion vis-a-vis the Tompiros.

We are left, then, with two resources: archaeology and ethnographic analogy. The emphasis must be on the primary evidence provided by archaeology, but essential to understanding and interpreting this evidence is a judicious use of ethnographic analogues drawn from the other Pueblo Indians.

The archaeological sequence for Abo Pass in central New Mexico is but sketchily known at present (see Baldwin 1983), and we cannot be sure whether or not the ethno-linguistic group known as the Tompiros lived in Abo Pass prior to ca. A.D. 1300. However, during the Pueblo IV period (ca. A.D. 1300-1675 in Abo Pass), there is clear cultural and occupational continuity at the major pueblo sites of Abo (LA 97) and Tenabo (LA 200), which are historically associated with the Tompiro Indians. All of the archaeological evidence relating to the mountain lion in Abo Pass is from sites and locations clustered around Abo and Tenabo and dated to the Pueblo IV period.

Natural occurence of the mountain lion, Felis concolor, is historically known for the mountains and mesas of New Mexico west of the Pecos and Canadian rivers, including the Manzano Mountains (see Baily 1931: 285-291). This presence may extend back into the Pleistocene (Harris and Findley 1964: 115). Archaeologists have recovered mountain lion bones from Pueblo IV sites immediately east of Abo Pass -- namely, at Pueblo Pardo (Toulouse and Stephenson 1960: 37) and at Gran Quivira (McKusick 1981: 57, 62; Vivian 1964: 137-138) --and a claw was recently recovered from Tenabo in excavations undertaken by the Central New Mexico Research Association.

THE MOUNTAIN LION EFFIGY

A few years ago Mr. R.L. Chilton found a large, broken stone effigy on his ranch in the Abo Pass. The effigy was lying out on the flood plain of Canon Saladito approximately 1.2 km. (0.75 mi.) east of the major site of Tenabo. Although not directly associated with the archaeological site, the effigy was very near fieldhouses and a shrine-cum-petroglyph site of Pueblo IV age which are associated with Tenabo (the effigy was ca. 100 m. distant from the nearest fieldhouse and ca. 150 m. from the shrine-cum-petroglyph site). This proximity to sites of Pueblo IV age, plus the close resemblance between this effigy and others of known Pueblo IV and historic date (see Cushing 1883; Fewkes 1924; Kirk 1943; Hewett 1938: fig. 22; Woodbury 1954: 158-162; Hayes, Young and Warren 1981: 133; White 1962: plates 6 and 7) lead me to the conclusion that the effigy is associated with the Tompiro occupation of Tenabo

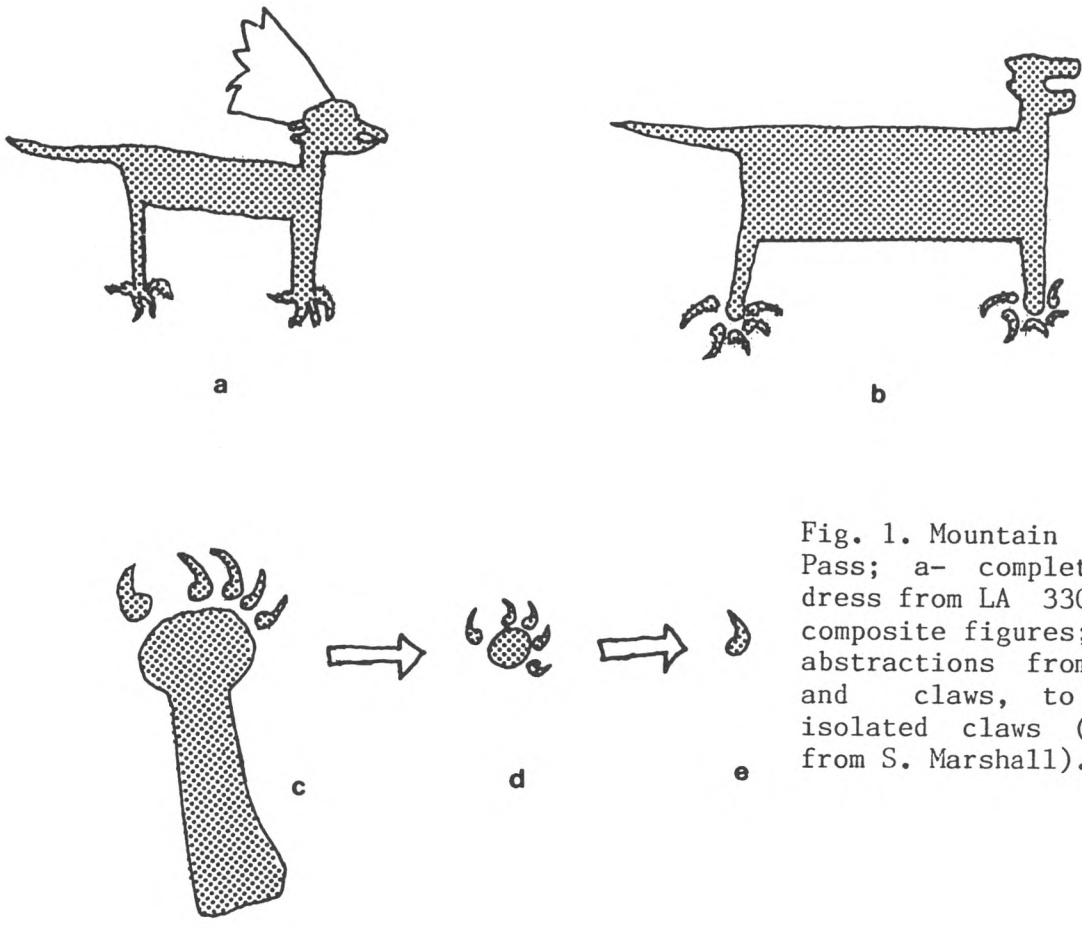

Fig. 1. Mountain lion motifs from Abo Pass; a- complete figure with headdress from LA 33036; b- solidly packed composite figures; c,d,e- progressive abstractions from forelimb with paw and claws, to paw and claws, to isolated claws (author's drawings; la from S. Marshall).

and the Abo Pass.

The effigy is illustrated in Plates 1, 2, and 3 (front, side, and top views, respectively). The stone appears to be a grey schist and is broken lengthwise; it is presently held together by a length of wire. Features are pecked and ground into the surface of the stone. The face (Plate 1) consists of two eye pits, a small mouth (in shadow in Plate 1), a flat nose area, and two rounded ears. The ears can be seen more plainly in Plate 3 (top view), which also shows the neck groove separating the head from the body, and the tail, which lies along the midline of the back. Plate 2 (side view) also shows the neck groove, but barely indicates the presence of the tail on top of the body. Plate 2 also shows the rectangular bulges at the bottom of the effigy, which represent the feet and legs of the animal (the wire can be seen passing through the depression between the two left foot/leg bulges). Clearly, the relief on this effigy is not very high, probably due to the hardness of the stone and consequent difficulty in working it.

Dimensions of the effigy are as follows:

maximum body length: 26 cm.
max. body width (horizontal): 10:3 cm.
max. body height (vertical): 11.9 cm.
diameter of eyes: 0.9 cm. and 1.0 cm.
length of mouth: 2.0 cm.
width of neck groove: 1.4 cm.
length of head: 4.5 cm.
length x width of ears: 4.0 x 3.5 cm.; 4.4 x 3.3 cm.
lg. x depth of depression between ears: 6.0 x 0.3 cm.
lg. x wd. of tail: 12.2 x 2.6 cm.
height of tail above surface of back: 0.7 cm.
lg. x wd. of front feet/legs: 5.2 x 3.2 cm.; 5.0 x 2.7 cm.

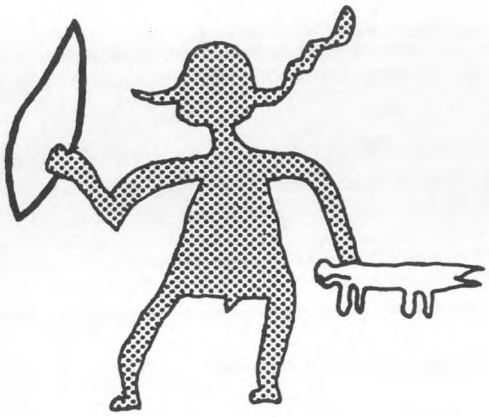

Fig. 2. Petroglyph human figure holding bow and effigy from LA 33027 (author's sketch from S. Marshall original).

lg. x wd. of hind feet/legs: 5.0 x 3.1 cm.; 4.7 x 2.8 cm.

The long tail precludes identifying the effigy with the bear, bobcat, deer or any other short-tailed animal. The rounded ears, the tail position (laid across the back), and the apparently "crouching" position of the legs and feet all suggest the mountain lion as the animal represented. These features, particularly the position of the tail, are typical of recent Pueblo Indian representations of the mountain lion (see Cushing 1883: 25; Fewkes 1924: 387).

The effigy is much too large and heavy to be a hunting fetish that is carried along on the hunt; it therefore must be the sort of fetish intended for use on an altar (Fewkes prefers the term "idol" for large effigies of limited portability, Fewkes 1924: 379).

Could this effigy have been associated with the nearby shrine-cum-petroglyph site previously mentioned? Possibly, but proximity in space and time is the only linking factor between the site and the effigy. This site (APA-83-25 in the Central New Mexico Research Association site numbering scheme) is a rimrock shrine of the sort typical of the Abo Pass. In an area of weathered rimrock, several blocks of bedrock were removed by the Tompiros to create a flat, rectangular space with vertical bedrock walls on three sides. The open side faces south-southeast into Canon Saladito and overlooks a section of canyon bottom that was used for floodwater-farming by people from Tenabo. It is presumed that the rectangular space was used for laying out a sand painting or setting up some form of altar, probably for fertility ceremonies connected with the fields below, or possibly was a repository for prayer-sticks or the like. There is only one petroglyph inside the shrine: a bird on the east wall. Other petroglyphs are scattered on boulders and exposed rimrock beside the shrine and downslope to the southeast: a kachina mask, footprints, a concentric circle, a complex geometric design, stepped lines, a circle, several vague figures, and a cluster of astronomical figures. A single glaze sherd was found downslope from the shrine.

Toulouse (1949: 23) reports three fetishes from Abo, but only illustrates one of them, a very small fetish, which he interprets as representing a bear. However, this fetish seems to have too long a tail to be a bear, and the tail is laid along the back -- suggesting the mountain lion. The small size of this fetish allows the possibility that it was a personal hunting fetish to be carried along during the pursuit of game.

Hayes recovered six mountain lion effigies from Mound 7 at Gran Quivira (Hayes, Young, and Warren 1981: 133), the largest of which must be an altar

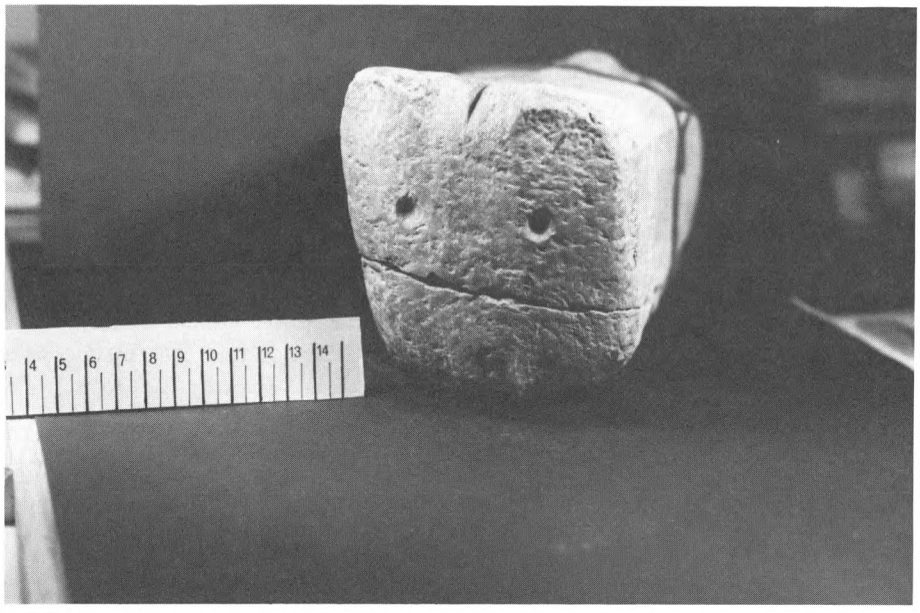

Fig. 3. Mountain lion effigy, front view; scale in centimeters.

Fig. 4. Mountain lion effigy, side view; scale in centimeters.

Fig. 5. Mountain lion effigy, top view; scale in centimeters.

piece, while the others may be hunting fetishes.

Further consideration of these effigies will be left until after describing the rock art representations of the mountain lion.

THE MOUNTAIN LION IN ABO PASS ROCK ART

The rock art sites in Abo Pass are predominantly Pueblo IV in age, and consequently tend to cluster around the major pueblos of Abo and Tenabo. Petroglyph sites are much more frequent than pictograph sites, but there are clear indications that many pictograph sites have been destroyed through natural erosion and fading of the pigments over the years. These Pueblo IV pictographs and petroglyphs fit easily into Schaafsma's Rio Grande Style (Schaafsma 1975: 129-163), but have their own regional flavor -- hence, I agree with Schaafsma's separation of the Abo Pass area into a subdivision within the style.

The following discussion is based on rock art data collected mainly in the years 1981 through 1983. Important within this body of data are the inventories of selected petroglyph sites by Susan Marshall in the summer of 1982 (Marshall and Baldwin 1982). Table 1 shows the occurrences of mountain lion motifs in Abo Pass. The Awanyu's Den (LA 44060) is the only site near the pueblo of Abo; the others cluster around Tenabo. Only two of the inventoried petroglyph sites (LA 9001) and LA 33046) failed to show any form of the mountain lion motif, and these two sites are atypical for Abo Pass: LA 9001 consists mainly of pre-Pueblo IV petroglyphs and LA 33046 has only 13 figures.

The variations in the mountain lion motif are listed in Table 1 and illustrated in Fig. 1. They range from complete figure pictographs to single pecked claws. Unlike the effigies described above, the complete figure representations always show a straight tail (see discussion of tail position in representations elsewhere among the Pueblo Indians, in Smith 1952: 202-203), the diagnostic feature being an emphasis on large, clawed feet. Figure 1b illustrates the most common representation of the complete figure as a petroglyph: typical are the large, clawed feet; the rectangular, solidly pecked body; the straight tail; and the erect head with open mouth and two ears on the back of the head. In all known cases within Abo Pass, this figure faces right (this is <u>not</u> true of other zoomorphs, which may face in either direction), and this rule applies to the two known pictographs as well.

In a number of the complete petroglyph figures, the lion is wearing what appears to be an erect feather headdress (see Fig. 1a); in some cases this is stylized into a solidly pecked triangle or fan-shape rising from the top of the head.

The mountain lion is also represented petroglyphically by an important series of abstractions. The first is a forelimb with paw and claws (see Fig. 1c), which is further abstracted to a simple paw and claws (see Fig. 1d), and finally reduced to a single isolated claw (see Fig. 1e). In the first two cases, there is always one claw (the first digit) that is oriented in opposition to the other four digits. The paws are quite distinct from bear-paw representations; which show a square pad with claws in a straight line along the front -- in contrast to the mountain lion's circular pad with claws arranged in a half-circle around it. Dutton's Zuni informant identified just such a paw-print in the Kuaua murals as belonging to the mountain lion (Dutton 1963: 172).

A typical solidly pecked, complete

Fig. 6. Typical petroglyph of a complete mountain lion from LA 33028.

figure is shown in Plate 4. Plate 5 shows a mixed (outline and solid) complete figure with headdress, which also has a line from mouth to heart (called, variously, the "heartline" or "life-line").

The pictograph mountain lion at the Second Site (LA 44110) is done in a naturalistic yellow. Of special interest is that this lion is carrying a deer on his back: the deer is lying with legs in the air, head hanging over the lion's shoulder, and is colored beige. This image recalls the Hano story of Handmark Boy's hunting fetish becoming a full-grown mountain lion in order to carry a dead bear on his back on their return to the pueblo. (Parsons 1939: 188).

The pictograph mountain lion at the Awanyu's Den (LA 44060) is black with a white outline. Apparently this is a directional color variation as discussed by Cushing (1883: 24), presumably through the color black referring to the nadir (if following the Zuni and Tewa scheme) or the north (if following the Southern Tiwa scheme) -- see Parsons (1939: 365). Unfortunately, we do not know the color-direction scheme used by the Tompiros, but I am hopeful that close analysis of pictographic representations may some day allow us to deduce it. It is notable that the kiva murals at Pottery Mound show mountain lions of various colors, as well as naturalistically (Hibben 1975: ii-iii, 9, 67, 108), suggesting that directional color variations of the mountain lion were utilized prehistorically by the Southern Tiwa.

THE MOUNTAIN LION IN TOMPIRO CULTURE

As shown above, two sizes of mountain lion effigies are known archaeologically from the Abo Pass: a small size suitable for use as a hunting fetish, and a large size suitable as an idol for an altar. Both sizes of effigies are also known from the

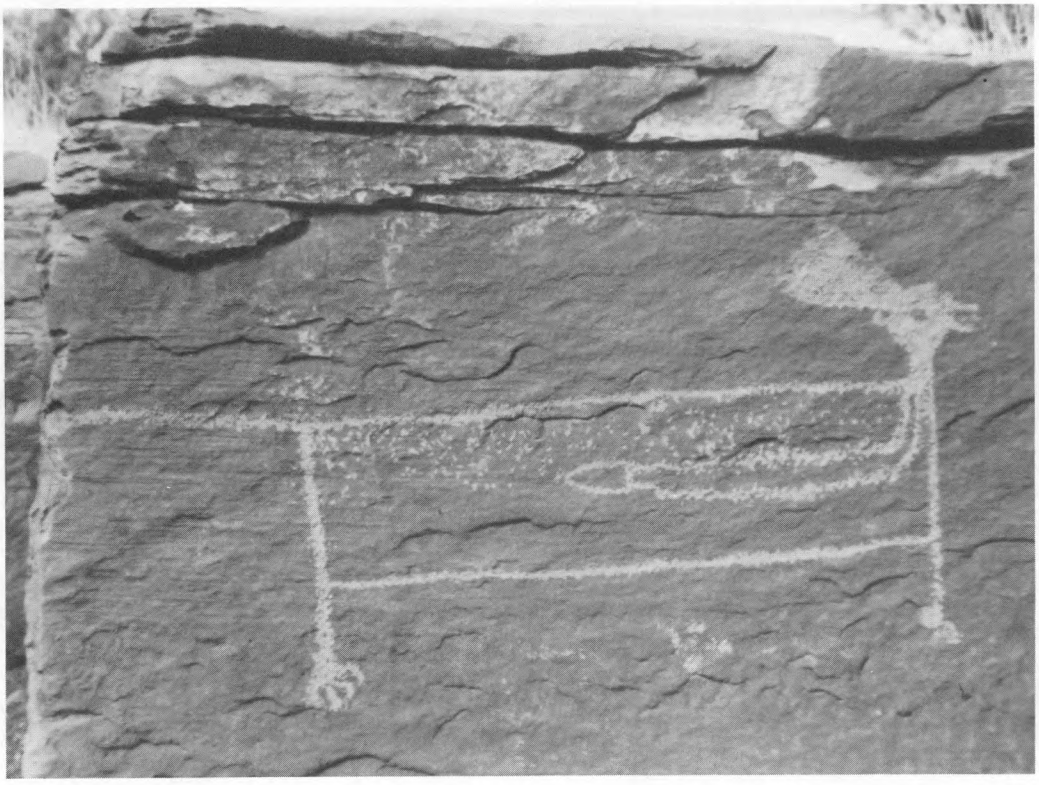

Fig. 7. Mountain lion petroglyph with headdress and "heart-line" from LA 33036.

pueblo of Gran Quivira, which was occupied by the closely related eastern Tompiros. As these effigies are morphologically very close to known 19th and 20th century examples used by other Pueblo Indians, their use as hunting and altar fetishes is very likely on the basis of ethnographic analogy. Given that "prey animal" effigies need the "breath of life" derived from their hearts in order to be effective (Cushing 1883: 15), a ceremony to awaken the "heart" of a newly created fetish -- such as described by Stirling (1942: 22-24) -- should have existed.

Attention here is drawn to Fig. 2, which illustrates a petroglyph from LA 33027. It appears to depict a male hunter or ceremonialist holding a bow in his right hand and an effigy in his left hand. The identity of the effigy is not clear, but might be one of the "prey beasts," given the apparent association with a bow-- and thus with hunting.

'Mountain lion' is universally recognized among the Pueblo Indians as a supernatural entity associated with hunting. The rock art depictions in Abo Pass emphasize the large claws of the mountain lion and, at the Second Site, show the lion carrying a dead deer. This evidence, together with the stone effigies, suggests that the same linkage was made by the Tompiros.

Furthermore, some of the Pueblo Indians consider the mountain lion to be the "chief" or "senior" among the prey beasts, and others call the headman of their hunting societies "Mountain Lion" (Cushing 1883: 17; Parsons 1939: 187-188, 912). I suggest that the feathered headdress worn by the mountain lion in some depictions in Abo Pass is symbolic of that chiefly status. Note that the mountain lion is the <u>only</u> animal figure shown wearing such a headdress. It is likely then that the Tompiros also recognized Mountain Lion as "chief" of the prey

SITES ROCK ART FIGURES	LA 44060 * (The Awanyu's Den)	LA 44110 (Second Site)	LA 200 (Tenabo)	LA 2541	LA 2548	LA 9047 (Twin Awanyus)	LA 33027	LA 33028	LA 33036	LA 33045	LA 33047	LA 33049	TOTALS
PICTOGRAPHS:													
Complete Mt. Lion	1	1	-	-	-	-	-	-	-	-	-	-	2
PETROGLYPHS:													
Complete Mt. Lion:													
-solid	-	-	-	-	-	-	1	1	2	-	1	-	5
-outline	-	-	-	-	-	-	-	-	2	-	-	-	2
-mixed	-	-	-	-	-	-	-	-	1	-	-	-	1
Complete Mt. Lion w/ headdress:													
-solid	-	-	-	-	-	-	-	-	3	-	-	1	4
-mixed	-	-	-	-	-	-	-	-	1	-	-	-	1
-mixed w/heart-line	-	-	-	-	-	-	-	-	1	-	-	-	1
Abstract Mt. Lion (solid):													
-forelimb, paw and claws	-	-	-	-	-	-	-	1	1	-	-	1	3
-paw and claws	-	-	2	-	1	1	3	-	3	4	2	-	16
-isolated claw	-	-	2	1	-	-	-	1	4	-	-	2	10
TOTALS:	1	1	4	1	1	1	4	3	18	4	3	4	45

Unmarked sites are completely inventoried.
* Not inventoried
+ Partially inventoried

Table 1. List of Mt. Lion

beasts and very well may have had a hunting society whose headman was called "Mountain Lion."

A final observation is that the mountain lion motifs in rock art sites are clustered around Tenabo, with only one exception. My colleagues at the Central New Mexico Research Association and I have speculated that there must have been some special association of the mountain lion with Tenabo to account for this distribution. Exactly what this special association was remains a moot point.

ACKNOWLEDGEMENTS

R. L. and Norabelle Chilton, through their generous permission and support of archaelogical work on their ranch, have been directly responsible for most of what we now know regarding the mountain lion in Tompiro culture. They deserve the greatest thanks from all archaelogists. I also wish to thank Susan Marshall for her work at inventorying rock art sites near Tenabo; Al Stevenson for his continual searching out of new rock art sites; and especially Paul Secord for his discovery of the fabulous Second Site. More generally, I wish to thank all those persons who have participated in archaeological survey of the Abo Pass area in conjunction with my partners and me in the Central New Mexico Research Association. Finally, I wish to acknowledge the prior work of Col. Jim Bain with the Albuquerque Archaeological Society and of Polly Schaafsma; which alerted my co-workers and me to the presence of important rock art resources within Abo Pass.

Central New Mexico Research Association
Mountainair, New Mexico

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AN ALPHABETICAL INSCRIPTION FROM NAVAJO MOUNTAIN, ARIZONA, AND THE THEORIES OF BARRY FELL

STEPHEN C. JETT

BACKGROUND

Over the last quarter century, I have looked at enormous numbers of rock drawings in the Southwest and elsewhere, and have published on a few sites (e.g., Jett 1982, 1984). Although I have seen a number of post-Conquest inscriptions in Spanish and English, I have never encountered anything in the region that struck me as being in an exotic language or alphabet and of pre-Columbian age (although a few enigmatic written inscriptions have been reported, e.g., at the Crossing of the Fathers in Utah; Crampton 1960:11, 40; 1964:45; see also, Handke 1978).

Because, in addition to pursuing Southwestern interests, I also engage in research on the question of possible pre-Columbian transoceanic influences (e.g., Jett 1968, 1971, 1983), I became aware of the work of Barry Fell. A marine zoologist retired from Harvard's Peabody Museum, Fell has devoted his efforts in recent years to epigraphy. Specifically, in his The Epigraphic Society Occasional Publications and in his semipopular books (Fell 1976, 1980, 1982), he purports to translate and interpret hundreds of American rock "inscriptions" written in ancient languages and alphabets, copies of which have been sent to him by correspondents and gleaned from published works. The whole idea of myriad examples of early texts of Old World origin written on New World cliffs is so far removed from the perceptions of conventional archaeologists, and Fell's methods of presentation are so different from ordinary scholarly publication, that he is considered by most Americanists to be a fantasist.

Few (perhaps none) of us have the linguistic and other skills and training to evaluate properly Fell's analyses and interpretations of these texts, and Fell has not yet published all of the information needed for such evaluation. Further, Fell reproduces mostly drawings of these inscriptions rather than photographs, so some scholars may wonder whether the writings have been accurately transcribed or even exist at all.

This is not the place to deal extensively with Fell's methods and contentions. However, I would like to report on one case involving an alphabetical inscription in Northern Arizona, and Fell's purported translation of it.

The inscription was visited in 1916 by George C. Fraser, a New York attorney with a degree in geology from Princeton University. Fraser's son later donated his father's massive travel journals to the Princeton University Library, and Alfred Bush, the library's curator of Western Americana, asked me to study and report on them; this resulted in a published article (Jett 1975). In Fraser's 1916 volume, I found two photographs (E.IX.4 and V.V.8) showing an alphabetical inscription and other pictographs on a rock face. The photo caption was, "Picture writings in sandstone rock shelter near spring SE base Navajo Mt." Navajo Mountain is mainly in Utah but partly in Arizona.

Fell's was not the first modern research to deal with alleged Old World inscriptions in America. For instance, Semiticist Cyrus Gordon (1971, 1974; see also, Covey 1975), then of Brandeis University, had written on the subject, especially about a Canaanite text from Brazil. In 1972, I sent him a copy of the Navajo Mountain inscription, and he replied

"I can make nothing of it...." (Cyrus H. Gordon, pesonal communication, Jan. 5, 1973). After the appearance of Fell's first two books, in which he discussed American rock writings supposedly utilizing the Iberic alphabet, I recognized some similarities to the letters in the Navajo Mountain inscription. I confirmed this impression by referring to Diringer's (1968) The Alphabet. In 1981, I finally got around to sending a transcription of the text to Fell. He sent a prompt reply (November 19, 1981), in which he wrote:

> The text you sent for decipherment is Iberic, as you suspected. The Iberic alphabet is used, as we now know, for several of the ancient Iberian tongues, including Basque, sometimes for Celtiberian, sometimes for Catalan Greek; and most usually for the southern Iberian tongue, which was Semitic, and closely related to Libyan Arabic, or even identical with Libyan Arabic (which uses Tifinag and related scripts).
>
> The translation of your inscription is as follows:
>
> > Look!
> > Fertile land terminating. Do not enter, it is desolate.
> >
> > This is I, Baha ("Husky").

The translation as provided by Fell certainly seemed to gibe with the geography; east of Navajo Mountain is a broad, sage-covered, juniper-dotted plain, whereas westward is some of the roughest canyon country in the world, long known for its remoteness. Further, I knew that this inscription dated no later than 1916 and therefore was certainly not attributable to a recent forger or to the fervid imagination of Fell or one of his collaboraters. Therefore, I felt that further pursuit of this matter would be worthwhile.

I inquired of Navajo specialist David M. Brugge as to whether he had ever encountered similar inscriptions. He replied that he had seen writings in the Chaco Canyon, New Mexico, area. They have not yet been published, but Brugge (1981:79, 81) has recently referred to these inscriptions as "some meaningless combinations of letters and letter-like figures.... The nonsense inscriptions are probably the work of Navajos familiar with writing but themselves illiterate." Perhaps the Navajo Mountain text is of some such origin; but if so, how could it be identified and translated as Libyan, written in an Iberic alphabet?

Before going further into the epigraphic and linguistic aspects of the matter, I wanted to see if I could locate the site itself. In August, 1984, I went to Navajo Mountain. The photo caption had referred to the inscriptions being in a rock shelter in proximity to a spring at the "SE base of Navajo Mt." The only mountain-base spring I knew of was Rainbow Lodge Spring (mislocated on U.S. Geological Survey 7 1/2 Minute Chaiyahi Flat Quadrangle, ArizonaCoconino Co., 1970). The Fraser text mentioned that the spring was at the contact of a white-yellow sandstone and a red shaley sandstone. The cliff behind Rainbow Lodge Spring fits this description fairly well, but a search all along it revealed only a few Anasazi pictographs and an 1882 graffito.

Unlike his photo caption, Fraser's (1916:130-138) text indicates that the spring was "a water seep into a shallow dug well" and was reached after he "rounded the northeasterly corner of the mountain" and descended into a canyon. Therefore, in August, 1985, I returned to Navajo Mountain. Thinking that I could expedite my

search by making local inquiry, I questioned a Navajo trading-post employee. He did not know the inscription but referred me to Harold Drake, Chapter President and Navajo culture historian associated with the Navajo Mountain Boarding School. Drake knew of no canyon near the mountain that fitted Fraser's description, and did not recognize the photos I had brought of the rock writing. After our conversation had moved on to different matters, another Navajo, Ashley Atene, came into the dormitory lobby where we were sitting. I showed him the photographs, and he immediately indicated that he recognized the site. He said (in Navajo, Drake interpreting) that the panel (which he supposed was Anasazi) was now under the waters of the Lake Powell reservoir, near their head in Desha (Deshni) Canyon, where Atene maintains an orchard (U.S.G.S. 15 Minute Navajo Moutain Quadrangle, Utah-Arizona 1963).

Atene appeared to be certain of his identification. However, the place he referred to was farther from the mountain base than would have been possible for Fraser to reach in the hour's time mentioned in his journal. So, to satisfy myself further, I examined the lower portion of nearby Box Canyon (although Drake said it contained no spring); but the place did not appear to be physiographically promising. I also looked at a canyon below the plateau rim to the north, but its appearance conformed even less to Fraser's description.

Upon returning to California, I examined Fraser's text more closely, and determined that his "northeasterly" was a typographical error and that "southeasterly" was in fact meant, as I had originally supposed on the basis of the photo caption. Fraser visited Anasazi ruins in the area that he seemed to believe were related to Red House (which he had visited the day before), and later stated that the lunch camp (at the seep) was "under the southeasterly corner of the mountain." I concluded that the canyon in question was the one about a half mile northeast of the "cliff dwelling" marked on the U.S.G.S. 7 1/2 Minute Chayahi Rim NE Quadrangle, Arizona-Coconino Co., (1970). In December, 1985, I returned to Navajo Mountain. I examined the lower end of the yellow-and-reddish canyon of Tin Cup Creek east of the foot of the mountain. Although I found two rock tanks, I found no spring or inscription. The upper part of the canyon was not visited, but it could be viewed from a distance and did not appear particularly promising. I then made additional enquiries. An elderly woman stated that the only spring she knew of in a yellow-and red-rock canyon near the mountain base was Ndíshchíí ("ponderosa pine") Spring, in the canyon I had earlier concluded was the relevant one, at the southeastern base of the mountain. Visiting this canyon's mouth, I found a large, new water storage tank set into the ground; however, I saw no spring nor any cliff looking quite like that in Fraser's photograph. Stomach trouble and approaching darkness prevented a thorough reconnaissance of the canyon, which in any case didn't seem very yellow in color. So, the inscription's exact location remains unidentified.

THE INSCRIPTION

Fraser (1916:137) described the scene as follows: "In the cliff is a shallow rock shelter 7 or 8 feet deep and 10 to 12 feet high, with picture writings made by daubing red sand on the white face of the rock."

As can be seen in Fig. 1, the panel includes not only writing but also crude anthropomorphic pictographs, those nearest the letters appearing, in the photograph, to be

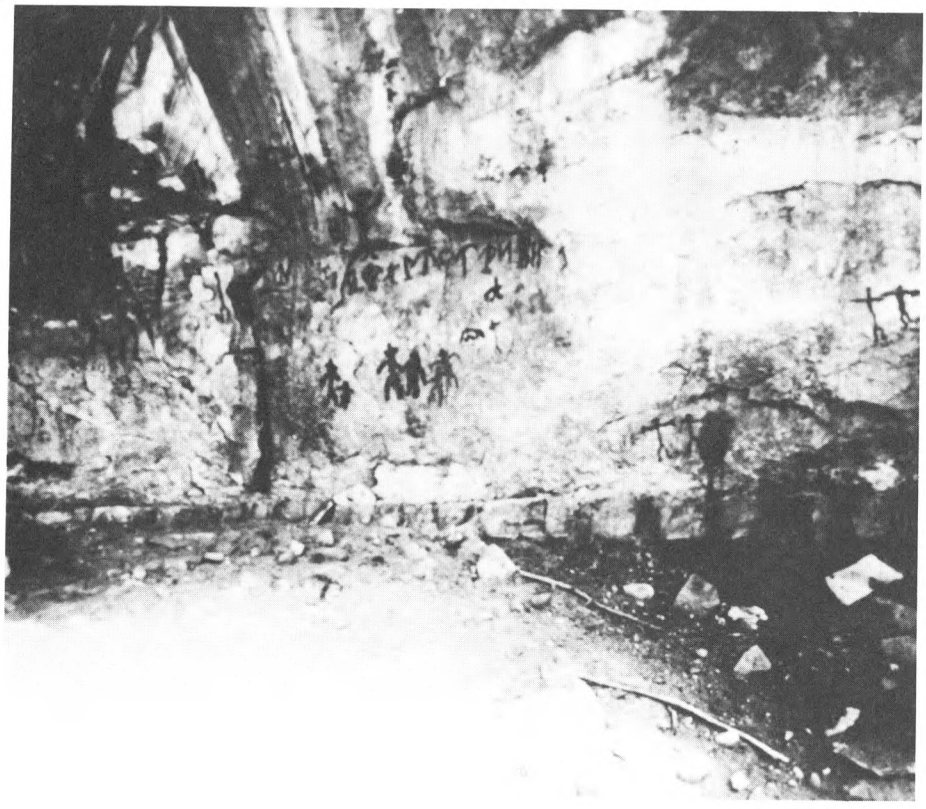

Fig. 1. Original Photo by George C. Fraser of inspription (courtesy Princeton University Library).

contemporaneous with the letters. The writing occurs on three lines. The top line consists of only one sign, which Fell translated as meaning "Look!" or "Take Note." This letter is above the left-hand portion of the second line in a position between letters 2 and 3 of that line. Next to this first-line letter is an anthropomorph with raised hands and an apparent horned headgear. Fell did not know of this figure; but it seems not inappropriate next to the alleged statement "Look!"

The second line, which is not physically divided into words, contains the bulk of the "text," and no anthropomorphs. Its second letter has been partially obscured by water flow down the cliff face. The third line contains a single X-like character beneath the third letter from the right-hand end of line 2. Fell interprets the "X" as meaning "signed" (see below). Beneath this letter are some seemingly meaningless marks.

Under the inscription as a whole, there is a line of six anthropomorphic pictographs, in three pairs, and two additional pairs of figures are painted well to the right; these pictographs are discussed below. According to Fell (personal communication 1981), on the basis of my transcription rather than a photograph, "The actual inscription ... may not be the original, as some of the letters are written carelessly. We now have very clear evidence from sites where original texts, correctly written, have been repeatedly copied, each time larger and less accurately, by later Amerind visitors."

Although I have done some very limited linguistic work (e.g., Jett 1970, 1977; Jett and Spencer 1981; Jett n.d.), I by no means claim to be a linguist. Still, I believe I can evaluate provisionally several aspects of Fell's interpretation of the Navajo Mountain inscription.

The Alphabet

There are 16 units in the inscription, apparently representing 12 separate signs. A number of these 12 signs are identical to, or are very similar to, those listed by Diringer (1968:174, 183, 193-95) and to those in the somewhat different list of MacKendrick (1969:68) for the Iberian (Iberic) alphabet, which dates to the period from about 430 B.C. on into the Roman era of Southern Spain. This script appears to derive from early Libyan writing, with the addition of signs from other, local and foreign, sources. Variant alphabets occur in different parts of the peninsula. According to Fell (personal communication, 1985), there has been little recent work (other than his own) to clarify some of the uncertainties about Iberian (see Fell 1976:162-64), although Buchanan (e.g., 1985) has been working on texts from Spain. Fell asserts that he has identified the phonetic equivalents of the letters from their in-context appearance in New World inscriptions, not simply on the basis of Old World inscriptions or authorities. Because I cannot fully evaluate this assertion on the basis of Fell's published works to date, the best I can do is to see to what extent his interpretation of the Arizona signs corresponds to others' previous interpretations of the phonetic values of Iberian letters.

Table 1 shows the symbols that appear in the Arizona text as compared to those given by Diringer, MacKendrick, and Fell. If we generally ignore the "serifs" on the Arizona signs, these sources agree very well with respect to six of the Navajo Mountain letters (1, 2, 4, 7, 8, and 13) and their phonetic equivalents, and reasonably well with regard to one other (11). The remaining signs call for discussion.

Arizona characters 3, 5, and 10 must be considered together. Sign 3, "P" (which appears in line 2, positions 3 and 12, and apparently in "messy" form in position 11), was given by Fell in his letter as equivalent to Roman "R" (cf. Greek rho). In his books, Fell (1980: 278, 1982:269; 1976:160-61) shows either a rounded or triangular "P" or backwards (mirror-image) "P" as Iberic equivalents to Roman "R," in two Spanish inscriptions (and "P" sometimes standing for Roman "B"). He also interpreted "P's" from Oklahoma and Pennsylvania as Iberic equivalents of Roman "R's" (Fell 1976:51). However, earlier sources show Roman "R" as being represented only by a backwards "P" in Iberic and other descendants of Phoenecian. Mirror image transposition is not uncommon in ancient alphabets, but Diringer shows a standard "P" in South Iberian as equivalent to Roman "P," as does Fell (1982:269) in one publication. But Diringer also shows a somewhat "P"-like diamond with a vertical tail as standing for double "R" as well as for aleph (alif, ', a neutral glottal). Fell takes the Arizona sign 5, mirror image "P," to be a variant of the South Iberic O (or O), which stands for ‘, ain, a voiced pharyngial fricative (although elsewhere, he does reproduce a sort of triangular "P" as equivalent to "A," presumably ain). If we provisionally accept the Fell pharyngial possibility for this backward "P," then we can more easily accept the Arizona ordinary "P" as equating with Roman "R" and presumably arising from the tailed diamond or from Greek rho. Number 10 from Arizona is a circle with a vertical tail. This also resembles the tailed diamond-- but even more, a tailed circle standing for the "R" sound in Northern Iberic-- an equivalent given by Fell (1976:161) in one of his books. Fell (1980:405) also showed the tailed circle as standing for Roman "B" in a text from

Table 1. Symbols of the Navajo Mountain inscription, similar Iberic alphabetical signs, proposed phonetic values, and Utah cattle brands.

	Symbol number	1	2	3	4	5	6	7	8	9	10	11	12	13
	Arizona (Fraser)													H
	Diringer	H,					$(\phi)^1$	X						H
	MacKendrick	H						X						H
	Fell (letter)			P		O		X		A			B	H
	Fell (books)	H		P,				X		A				H
	brand books							X						H
	Diringer & MacKendrick	O, H	M	P, A, ', RR, R	Y, I, N	R, ' ,	(Q)[1]	D, Da	N	A, T, ' , Ca, G, L	R, RR, (Q), (Ph)	Ṣ, Gui, G, Ki, Ci	Bi, (B)	O, H
	Fell (letter)	H	M	R	Y		Q	D	N	A	Ph	$\bar{G}$	B	H
	Fell (books)	H, E	M	R, P, B	Y	B	Q	D	N, Z	A	R, B; Ph, P, Q	G, N	B	E

[1]Punic.

[2]Early Phoenecian.

[3]Greek.

[4]Greek and Roman.

Spain; but the Arizona letter cannot equal Roman "R" or "RR" if letter 3 has been correctly identified as "R." A circle with a vertical line from its top to beneath it stands for "Q," qoph (ḳaf), in early Phoenician, and Fell (1976: 51; 1980:278, 405) showed this sign as equalling "P," "Q," or "R" in Spanish Iberic inscriptions; but he prefers to see Arizona sign 10 as equivalent to ϕ, Greek phi, an interpretation he has also applied to a Greek-language text in the Iberic alphabet, from Spain.

If Arizona sign 10 does not stand for "Q," then Fell's identification of character 6 as a "Q" equivalent makes better sense; it is not listed for Iberic by Diringer (1968: 174, 183, 193-95) or MacKendrick (1969:68), but something not too different does appear in Punic, a direct or indirect ancestor of Iberian. In one of his books, Fell (1980:278) reproduced, from an Arkansas inscription, a near mirror-image of the Arizona letter, and gave its equivalent as "Q."

Two signs remain undiscussed. Arizona number 12, "B," is not given for Iberic by Diringer or MacKendrick; although there is an "hour glass" sign thought to stand for "bi." And, of course, "B" does exist in the Greek and Roman alphabets, with essentially the same sound as our "B," which is the sound Fell assigns it in this instance; he made the same phonetic assignment in his transliteration of a purported Iberic-alphabet inscription from Nevada (Fell 1980: 406). Finally, Arizona character 9 is an inverted "V" with a dash above it. If the dash is significant, then an "A"-form letter may be the source. According to the pre-Fell publications, an Iberic "A"-like letter can stand for "A," or aleph (hamzi), but also for "Ṯ." Alternatively, if the dash is insignificant (as, apparently, would be the dashes over and under the first "H" in the Arizona text), then a simple inverted "V" would be meant, which could be pronounced "Ḡ" ("Gh," equivalent to Greek gamma) or "L" (cf., Greek lambda). Fell selects aleph from these possibilities, presumably on the basis of his experience with other texts (he called it "A" in 1980:129) and because Arizona letter 11 is considerd to be "Ḡ."

We must acknowledge, then, that solely on the basis of earlier (and admittedly incomplete, secondary) published sources, we find that Fell's identifications of the alphabet and of the phonetic values of the Arizona letters are plausible. We also find that he published most of the proposed letter identifications prior to his having seen my transcription of the Navajo Mountain inscription. Nevertheless, there are some significant discrepancies with the phonetic-value assignments made by earlier scholars, as well as some seeming inconsistencies in Fell's interpretations of the phonetic equivalents of certain forms (notably, "P" and tailed-circle variants).

The Language

Pre- (and non-) Fell scholarly opinion was (and is) divided as to which language(s) were written in Iberic script. Buchanan (1985) found Vulgar Latin to be used. Another, unproven, suggestion has been that at least one of the tongues employed is Libyan. Fell identified the langugage of the Arizona inscription as Southern Iberian, "which was Semitic, closely related to Libyan Arabic, or even identical with Libyan Arabic," and gave a translation (see above). He interpreted the inscription as reading from left to right, although Diringer (1968:194) stated that "The direction of [Iberic writing] is generally from right to left; sometimes, however, vertically downwards" (emphasis

Fig. 2. Original photo by George C. Fraser of inscription (courtesy Princeton University Library).

added). But although Fell (1976:160, 163) wrote of right-to-left Iberic, he (1980:129-30, 278) has also given other examples of left-to-right Iberic, from Spain (as has Buchanan, 1985).

Except for the first and last signs, the letters of the inscription form a continuous line and are not grouped into words. Fell has selected dividing places, presumably on the basis of words he perceived to exist within the continous line. Possibly, another observer might choose to divide the line differently and/or to read it from right to left (I am not qualified to evaluate these other possiblities). Further, since only consonants and not vowels are indicated, there may be alternatives to Fell's choice of vowels.

The barred "H" above the main line, toward the left, Fell interpreted as equivalent to the modern Arabic "Ha," which in Wehr's (1961:1015) Dictionary of Modern Written Arabic is said to mean "Look!" According to Professor Elias Tuma, University of California, Davis, a Lebanese Arab (personal communication 1985), it means "You see!"

The first part of the continuous line was interpreted by Fell to be m-r-y-ʿ, equivalent to the Arabic marīʿ, which could be the name "Maria" but which Fell translates as "fertile country" and Wehr (1961:904) gave as "fertile, productive (soil)"; Tuma said that the root means "to graze" and that the word as written would be "grazed" but would probably be used colloquially as "grazed land" (no domestic grazing animals are known to have been in North America during pre-Columbian times).

Fell isolated a second word from the line, equivalent to the Arabic q-d, qadā' (kadā'), which he gave as (fertile country) "terminating." Wehr (1961:772) did list the meaning "termination" in the sense of settling

or completing, but this word would not seem to be usable in the sense Fell employed it. Tuma said that the basic meaning is "justice," including divine "judgement" or destiny, or a judicial ruling (meanings also given by Wehr).

The next word seen by Fell is n-ā--in Arabic, na'ā, for which Wehr (1961:936) provided the meanings to "keep away," "stay away," "depart," and which Tuma interpreted as na'ī, "far away." Fell took the word to be an imperative.

Then comes f-r-r-ḡ, similar to faraḡ, "empty space," in Arabic (Wehr 1961:707), which Fell translated as "it is desolate."

At the end of line 1 is what Fell considered to be b-h, or "Baha," which he said is a proper name meaning "Husky." Although Tuma stated that baha' means "brightness" in Arabic, Wehr (1961:81) defined bahā as meaning "wide," as an open space (cf., faraḡ, above).

Finally, below the line is an "X," approximately equivalent to Roman "D," standing for ḍa, according to Fell, "vernacular Arabic for signing a statement" and meaning "It is I" or "Behold" (from hā'anadā; Wehr 1961: 306; ḍa means "This is," according to Tuma).

The Text

For discussion's sake, let us accept Fell's identification of letters, direction of the text, and word divisions. The Arabic equivalent would be, "Hā! Marī' qadā'. Na'ā faraḡ. Bāha, ḍa." Fell's free translation is "Look! Fertile land terminating. Do not enter, it is desolate. This is I, 'Husky'." One could easily relate this to the local geography, for east of Navajo Mountain there is extensive fairly flat and potentially productive land, some of which is currently farmed, while west of the mountain is some of the planet's most rugged, rocky canyon country.

On the other hand, further study of the dictionary definitions of the words Fell claims to have identified suggests a second interpretation, something like "Note! Ajudged productive land. Keep away [from the] broad empty [treeless ?] area. Signed." This reading would imply something in the nature of a posted land grant. So far, there is no known evidence of farming or of domestic-animal grazing on this land during the time of (Old World) use of Iberic writing, however.

We may, at this point, take note of Fell's (1976:163) words regarding putative Semitic Iberic inscriptions in West Virginia and Ohio: "Phoenician [i.e., Southern Iberian" Punic] words occur.... though often abbreviated or spelled differently from the more usual dictionary forms. The style was terse, rather like creole or pidgin-English, suggesting that the writers may have been using a language other than their native tongue," which may have been Basque or Celtic.

ALTERNATIVE EXPLANATIONS

Without passing ultimate judgement on the validity of Fell's interpretation of the Navajo Mountain inscription, we may consider conceivable sources other than Roman-era Iberians.

One possibility is a Mormon origin. The Book of Mormon (first published in 1830) describes migrations of people from the ancient Mediterranean to the New World. Since Mormons would be aware of such purported migrations, some one of the Latter Day Saints might conceivably have been inspired to paint a mysterious inscription on a cliff wall; Egyptian hieroglyphs of Mormon origin are said to exist in the Utah desert. It is even possible that such a person knew enough about Semitic

languages to create a Semitic text; if so, however, he would presumably have written it from right to left, as is standard in Semitic writing but unlike the Arizona inscription as interpreted by Fell. And, this hypothetical Mormon is very unlikely to have known anything of the Iberic alphabet; although the first attempts at detecting the phonology of Iberic were published (in French) by Heiss in 1870, many of the signs were unknown until the 1920s (Dirringer 1968:193-95; Fell 1982: 269).

The letters of the inscription do not resemble those of the Deseret Alphabet devised and used (to some extent) by the Mormons from 1854 to about 1870; that alphabet resembles shorthand (Jenson 1941:184).

Not only were there occasional Mormon parties in the Navajo Mountain region before 1916, there were also non-Mormon Anglo prospectors and explorers. The latter are also potential candidates for having authored the inscription. However, the same objections mentioned in connection with Mormons also apply to these non-Mormons.

I showed Fraser's photographs of the Navajo Mountain inscription to several Southwest specialists, including Curtis and Polly Schaafsma, David M. Brugge, Alexander J. Lindsay, Jr., and Jonathan Haas. It was generally agreed that the pictographs accompanying the inscription (and apparently done in the same paint) looked fairly modern and were most likely of Navajo or Paiute origin. Suggesting this assessment were what appeared to be brimmed hats, shown on one figure of each of the three pairs of figures below the writing. Lindsay suspected that Anglo miners were depicted; he felt that in 1916 the flat-brimmed, high-crowned "hasteen hat" had not yet been adopted by local Indians. Brugge, on the other hand, speculated that a Navajo "squaw dance" (Enemyway) scene was the theme (cf. similar petroglyph panels at Chaco Canyon, thought to date from the turn of the century; Hyde and Jett 1967: endpapers; Brugge 1981:80-81). As mentioned above, however, Fell would not see the inscription's apparent recency as precluding an ultimate Iberian source; he stated that original inscriptions were sometimes repeatedly copied, often inaccurately, by later Amerinds (this could account for some of the letters' peculiarities).

As for the symbols, Brugge and Haas independently noted their resemblance to Anglo-American cattle brands (on brands, see Arnold and Hale 1940; Cracroft 1964). Lindsay pointed out that Utah cattle operators, such as the Scorup brothers, might well have utilized the Navajo Mountain area, which would have been a superb hiding place for stolen cattle. The Scorup outfit operated as far south as the San Juan River from the Clay Hills westward, and they employed at least one outlaw and were involved in two "undeclared range wars" (Lambert 1964: 306, 309). Suitable crossings of the San Juan River existed at Clay Hills Crossing, Paiute Canyon, Wilson Canyon (to Trail and Desha canyons), and probably at other localities (see Pattison and Potter 1977). (Scorup brands are not represented in the Navajo Mountain Inscription).

I have examined turn-of-the-century registered Utah brands (Tingey 1901; Kelly 1912) in order to test this idea. Essentially exact equivalents of characters 1, 3, 7, 9, 10, 12, and 13 were found, most of these being letters of the Roman alphabet. Brands quite similar to characters 2, 5, 8, and 11 were also identified, as were brands at least vaguely similar to the remaining characters, 4 and 6 (Table 1). Thus, Utah cattle brands correspond about as closely to the characters of the Navajo Mountain

inscription as do previously recognized Iberic alphabetical or syllabic signs. On the other hand, brands like the Navajo Mountain signs were not registered in 1901 or 1912 for the counties nearest Navajo Mountain; to the extent that there is any geographic clustering of similar brands, it is in counties near Utah Lake, far to the north and on the opposite side of the Colorado River canyons.

CONCLUSIONS

I have attempted to make a partial (but impartial) assessment of Barry Fell's interpretation of a remote Arizona inscription which dates to no later than 1916 but which seems unlikely to have been executed prior to the last half of the nineteenth century. This assessment has shown that there is a certain plausibility in Fell's interpretation, and yet has also revealed some apparent inconsistencies and other questionable aspects of it. More epigraphic and linguistic expertise than mine would be required for a fuller judgement, however. With various alternatives concerning letter identification, vowel choice, text direction, word division, and language, it is clear that evaluation is not a simple matter. Others with an interest in Iberic have been shown the Navajo Mountain text, and while concurring as to the alphabet nevertheless at least tentatively demur with respect to other specifics. One hopes they may comment more fully in the future.

It should be noted that this paper has not tried to evaluate the Navajo Mountain inscription in the context of Fell's work as a whole; that Fell's attempted translation may have been a quick effort and not intended for definitive publication; and that Fell did not have an opportunity to respond to the present paper.

Alternatives to Fell's view that this rock graffito is an Iberic text have also been discussed. One is that Navajos, illiterate but aware of writing, daubed a meaningless string of letters and letterlike forms onto the cliff. Another is that the "letters" actually represent various cattle brands, possibly executed in connection with late nineteenth-century stock-stealing operations. Even though similar known registered Utah brands are documented, none were from very nearby, and we still need to ask how a random sequence of letters and pseudoletters or of cattle brands could be plausably read as a Semitic text in an ancient alphabet.

At very least, this discussion should make us alert to recognizing other possible non-English or -Spanish alphabetical inscriptions in the region (cf. Handke 1978), and make us more aware of the range of possible interpretations of these.

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THE ROCK PAINTINGS OF THE MATOPOS, ZIMBABWE

PETER GENGE

INTRODUCTION

A brief description of the types of rock paintings found in a range of granite hills known as the Matopos in the western region of Zimbabwe, Africa, is the topic of this paper.

GEOGRAPHICAL AREA

Just south of the watershed separating the mighty African rivers of the Zimbezie and the Limpopo, an area of about 1,200 square miles of granite outcroppings contains a rich reservoir of rock paintings (Fig. 1).

Many of the painted sites are in master caves which are magnificently painted and large enough to be inhabited by a small group and/or to act as a temporary gathering place for several wandering bands for some ceremonial purpose. These caves are not like the limestone tunnel type, which run deep underground, sometimes for many miles, like the painted caves of Europe. The granite caves are mostly hemispherical weatherings, sometimes deep and very grand, but very seldom are the painted panels not visible by daylight (Fig. 2).

Many hundreds of smaller sites lie between the master caves and, although the majority are in smaller overhangs which give some protection to the paintings and of course to the former inhabitants, many are on vertical faces of boulders and cliffs that have no protection at all. Some are in tunnel shelters formed by one boulder's bridging across others (Figs. 3, 4, 5, 6, and 7).

ARCHAEOLOGY

Although so far, no distinctively large early Stone Age tools have been found in the Matopos, this is thought to be because of geological reasons. Early Stone Age artifacts have been found a relatively few miles north of the watershed. It is thought the more rapidly flowing rivers to the south, which cut the magnificent valleys between the granite hills, mitigated against the build-up of the gravels that contain the older artifacts.

Middle and late Stone Age artifacts abound and indicate a long history of occupation by man. Some of the master caves have deposits 15 ft (4.57 meters) deep, and Carbon 14 dates as far back as 44 500 B.P. have been recorded.

Apart from a hiatus probably caused by some climatic reason - there is no record of human occupation between 21,700 and 15,800 years ago -- the area has been continually occupied until the present day. Many times it has been used as a place of refuge, and many remote caves contain grain bins and pottery which have been purposely hidden to prevent their capture by raiders.

The name Matopos is an anglicised corruption of a former Ndebele word that was corrupted from an earlier Karanga one. Its meaning is obscure and ranges from 'The Bald Heads,' an allusion to the rounded granite domes that were supposed to have been made by Mzilikazi, the first King of the Ndebele nation, to 'Amatobo' which means running with water.

This latter explanation is my favorite because, although the country has just suffered a prolonged drought for a period of 3 years, there has always been some water trickling out of crevices in the granite in suffi-

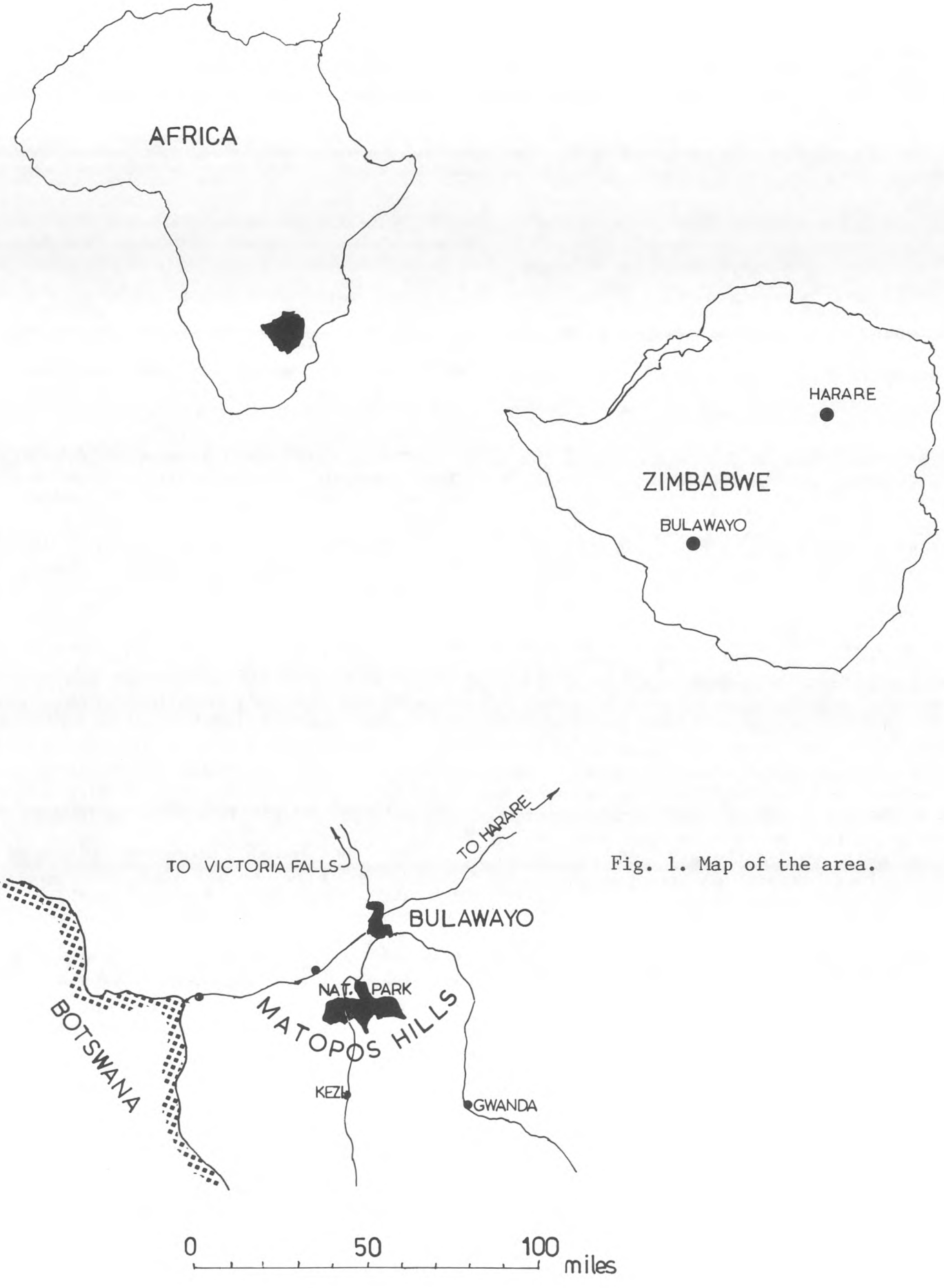


Fig. 1. Map of the area.

cent quantities to keep small bands of people alive. The source of the water is probably the condensation occurring in the spaces between the onion skin layering of the granite, caused by low night as compared with high daytime temperatures. Vegetation in hollows on the surface of the granite provides sponges that very seldom dry up. Larger sponges store rainfall for long periods.

This is the mostly likely reason that the Matopos has been attractive to man for tens of thousands of years, set as it is in an area of desert and semi-desert. It was an area that provided a welcome retreat for the hunter and gathering bands after seasonal sorties into the more game-rich open plains.

Many of the paintings seem to revolve around rainmaking ritual and many of the master caves command long distance views where rain clouds can been seen many miles away. It is tempting to think that some of the paintings were part of ceremonies to induce the clouds to come closer and to disburse life-giving water.

It has been postulated that many of the paintings in South Africa some hundreds of miles south of the Matopos depict hallucinatory happenings occurring during trance dances. The peoples who are the probable descendants of the painters, known as the San or perhaps better known as Bushmen, have been well researched. They placed great importance on the well-being of the group on the out-of-body experiences of their members. Up to a third of the male and female members of a group were able to go into a trance. Although trancing may have been induced wholly or partially by inhaling smoke from plants containing hallucinogens, it was also important to carry out a dance involving most of the group, and several attitudes of the body were adopted to assist into entering the trance state. Some of these attitudes are depicted in the Matopos paintings. The person with the conical headdress in Fig. 8 is in one of these positions.

Some of the paintings appear to commemorate an acutal happening of great significance, and in this category many of them depict conflict between groups of people, some clearly indicating battles. The illustration in Fig. 9 is part of a panel of paintings in which more than 200 warriors are involved.

About 70 percent of the recorded paintings are of humans or of mythical, part-human creatures. The majority of the remainder is of animals, which formed an important part of the life of the painters. Most of the animals depicted are of the antelope group, although practically all the animals still found in Zimbabwe are shown. The elephant, giraffe, zebra, warthog, baboon, lion, leopard, and birds, snakes and insects are not uncommon. (Figs. 4, 5, 6, 7, 10, and 11).

Very rarely depicted in other rock galleries around the world are paintings of flora, but the Matopos is particularly rich in such illustrations (Figs. 5 and 10).

In almost every major painted site are some rather strange looking objects which have been variously described as formlings, tectiforms, or clouds. They have been thought to be pictures of the rocks and granite hills, or the artists' impression of the planted fields of the more settled pastoral peoples, or the tally sheets of flocks and herds of the same peoples. However most researchers are now of the opinion that they may depict bee nests and honeycombs (Fig. 12).

Honey was one of the most valued items in the life of the Bushmen, and one of the very few matters that could provoke violence to the point of causing death was the violation of 'owner-

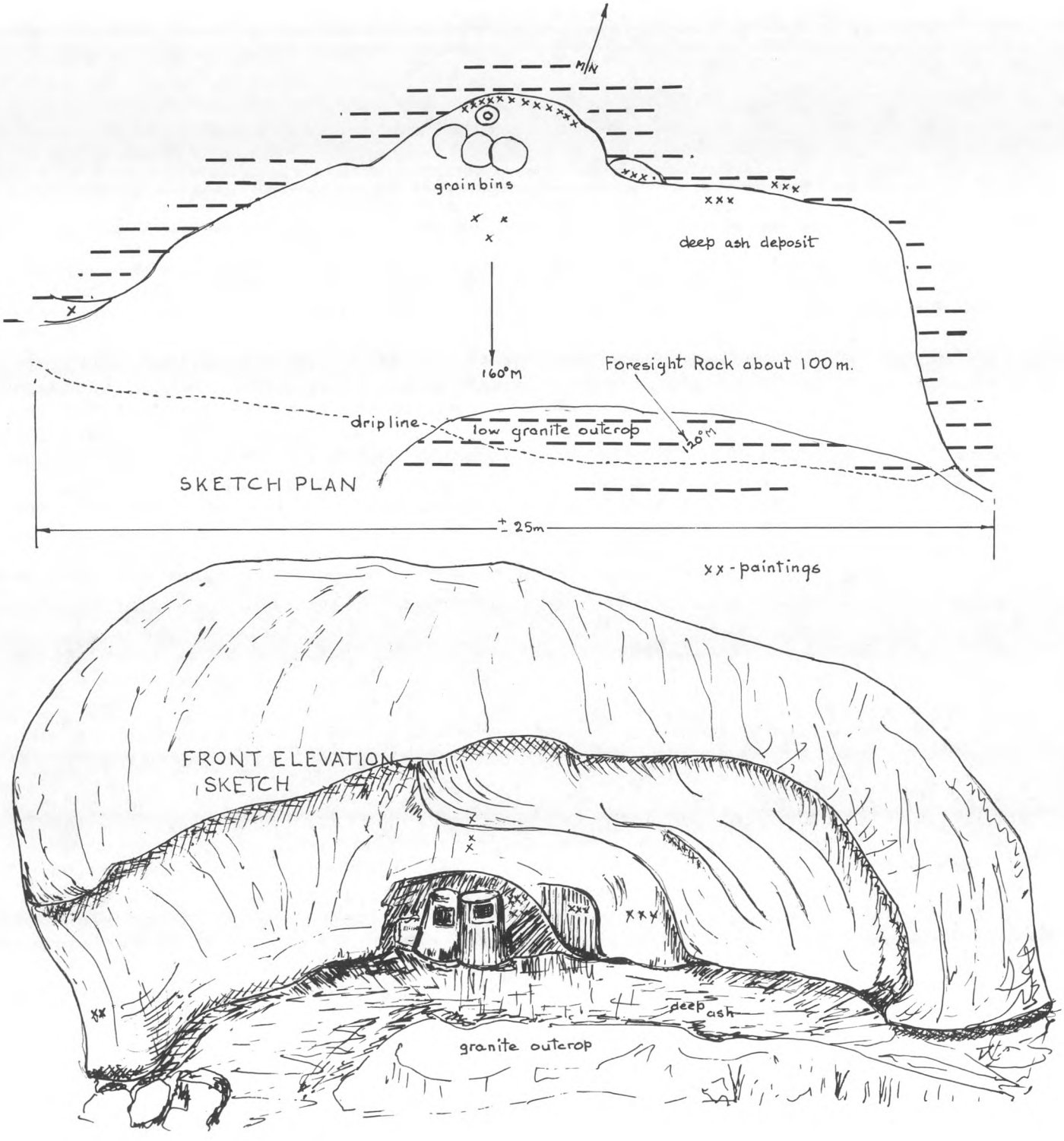
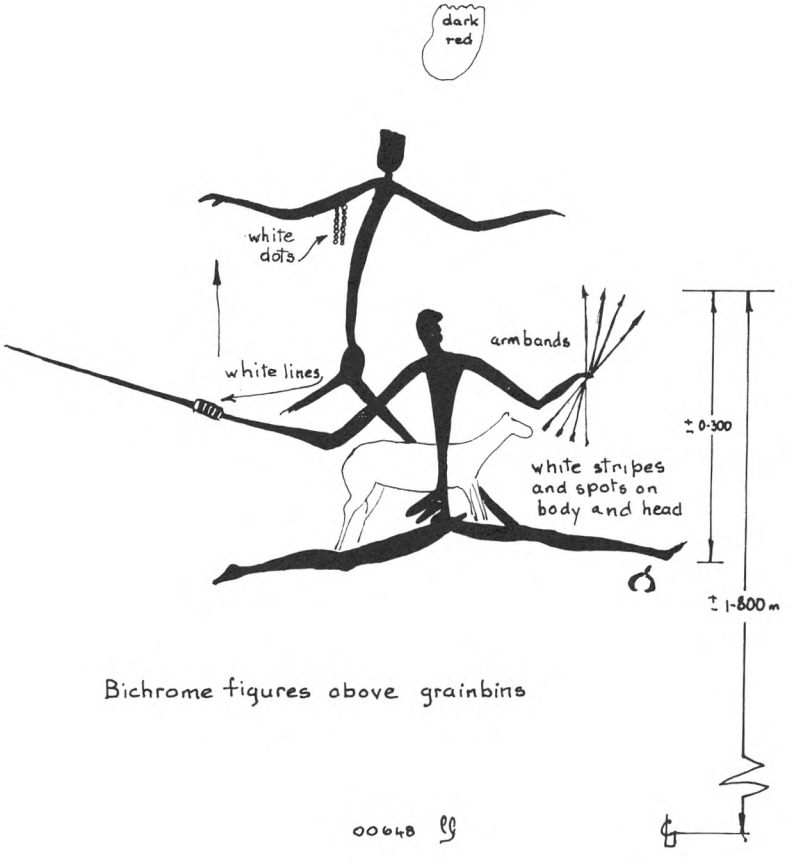


Fig. 2. Foresight Rock grainbin shelter.

FORESIGHT ROCK GRAINBIN SHELTER
MPOP. 2028 C2 PH513 275 : CB:1

A large boulder about 8m. high, 40 to 45 m long with undercut forming a shelter about 25m wide. 3 grain bins which are interconnected with a smaller separate bin behind are situated in front and in a central apse which is heavily painted. Other paintings occur in several places.

00644/9 gg



Bichrome figures above grainbins

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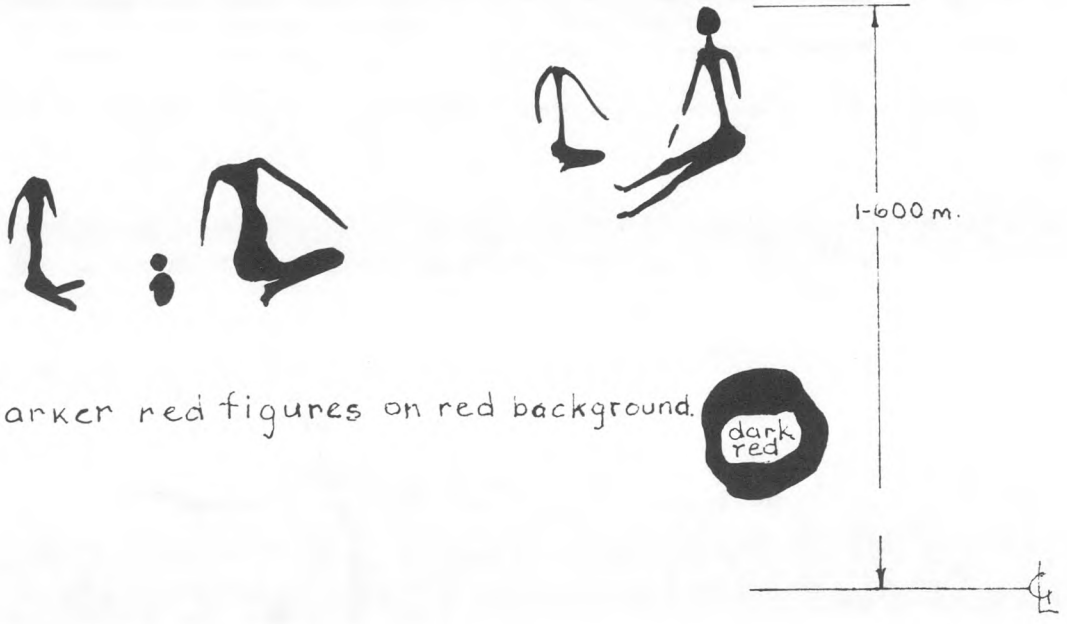
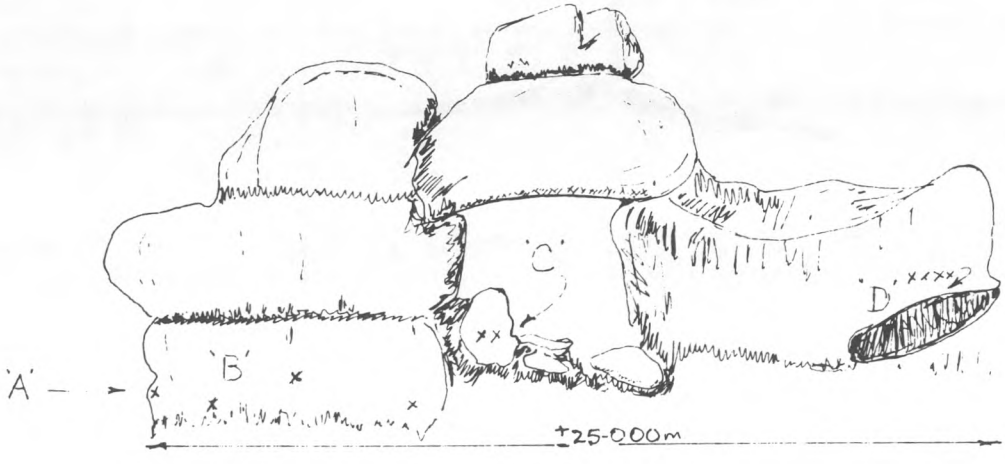
'C' A 2·700m high boulder in tunnel shelter formed by two larger boulders with a third bridging the gap. The tunnel is about 9m at its widest and is nearly 7m. high.





SKETCH OF FRONT ELEVATION. NORTH FACE

2028:DA:

'D' About 10m W of 'C' in a very low overhang (±1m high) almost concealed by the bole and root of a tree. The paintings consist of a group of 8+ human figures in dark red.

About 0·500 m. further right.

Fig. 3. Sketch of front elevation, north face.

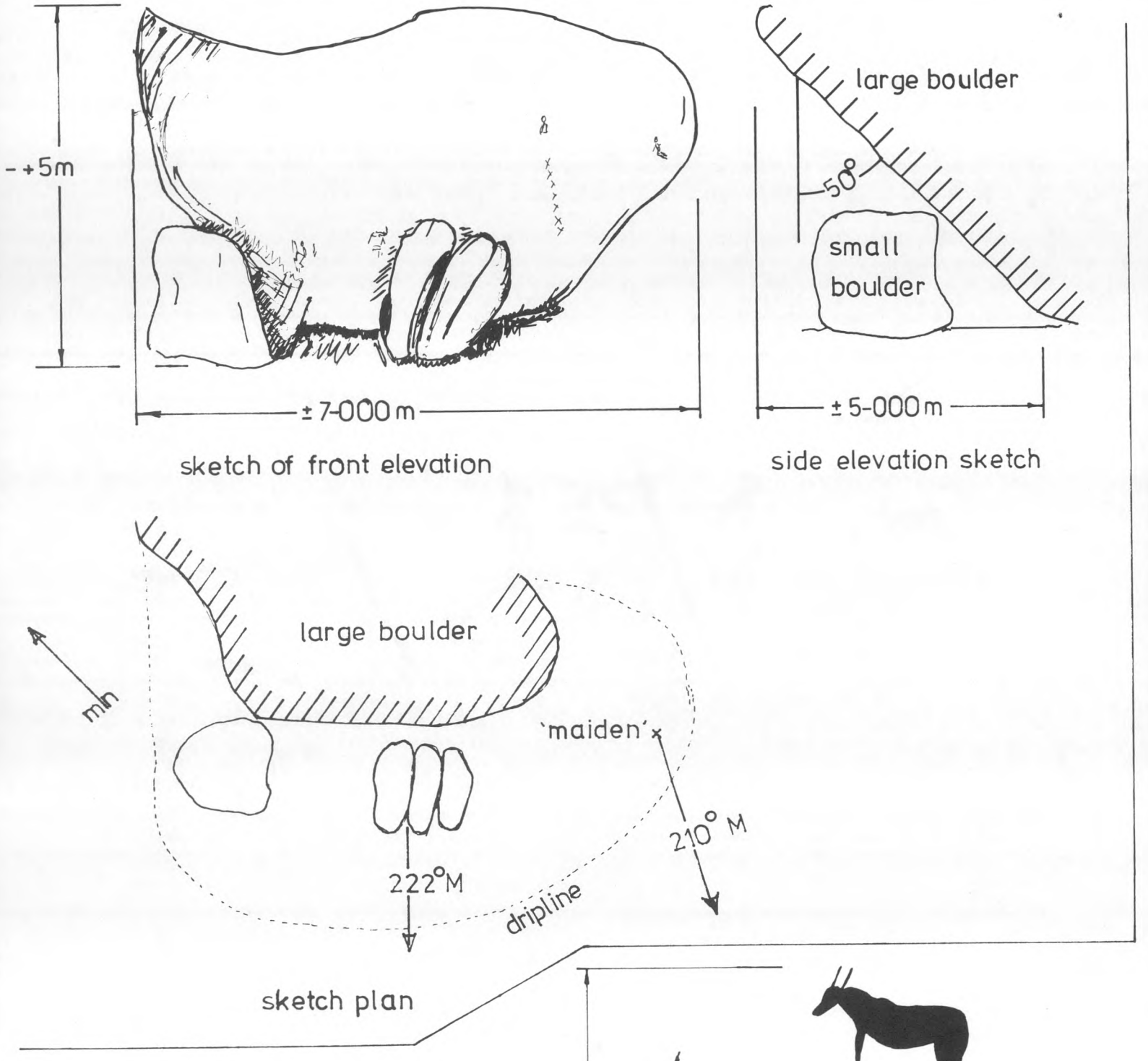


Fig. 4. Sketch of front and side elevations; closeup view of hoofed man and sitting maiden.

HOOFED MAN AND SITTING MAIDEN

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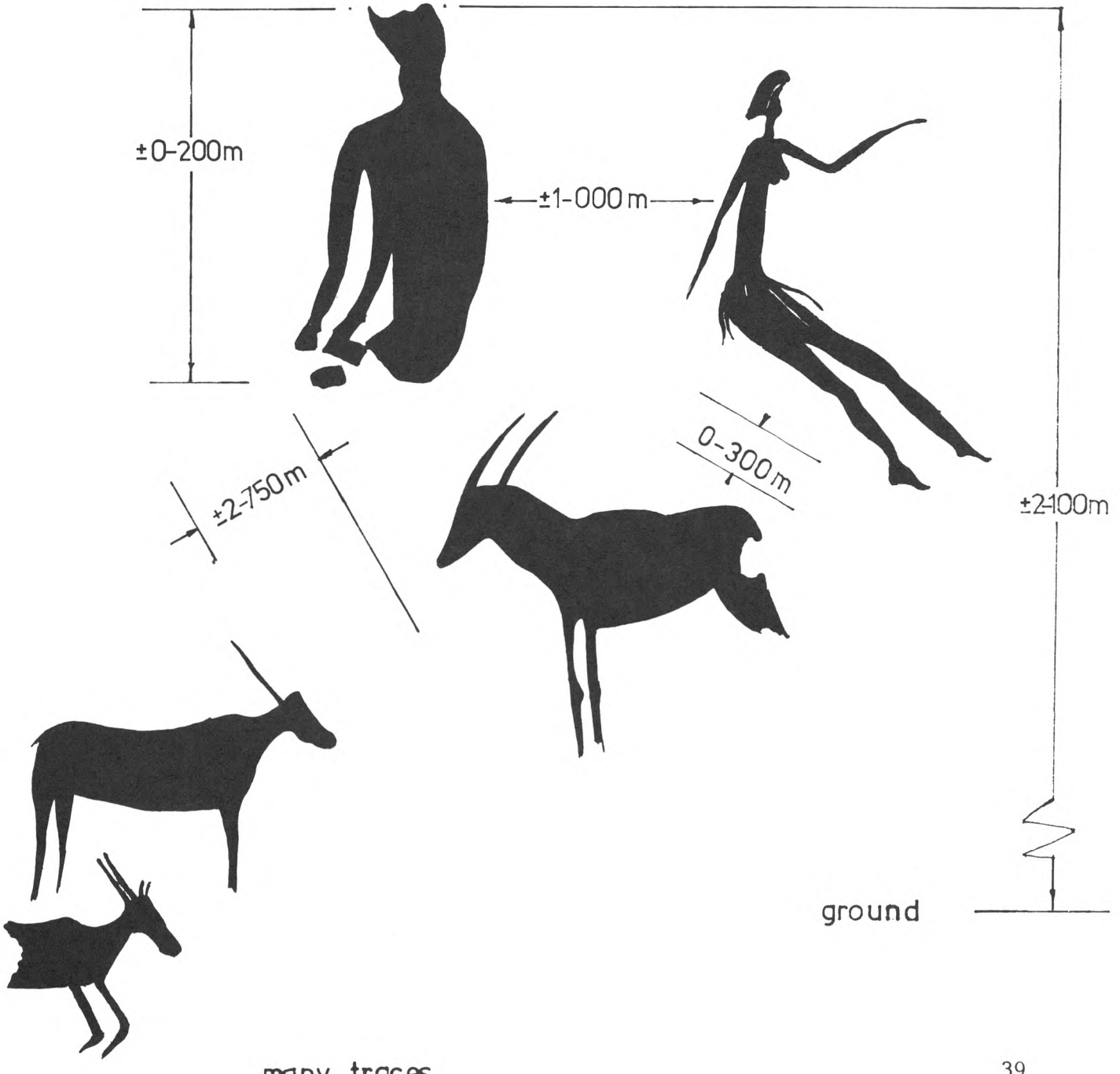
A boulder about 5m high on top of a small granite hill which is near the road. Good stone age and iron age deposit, the shelter faces the road.



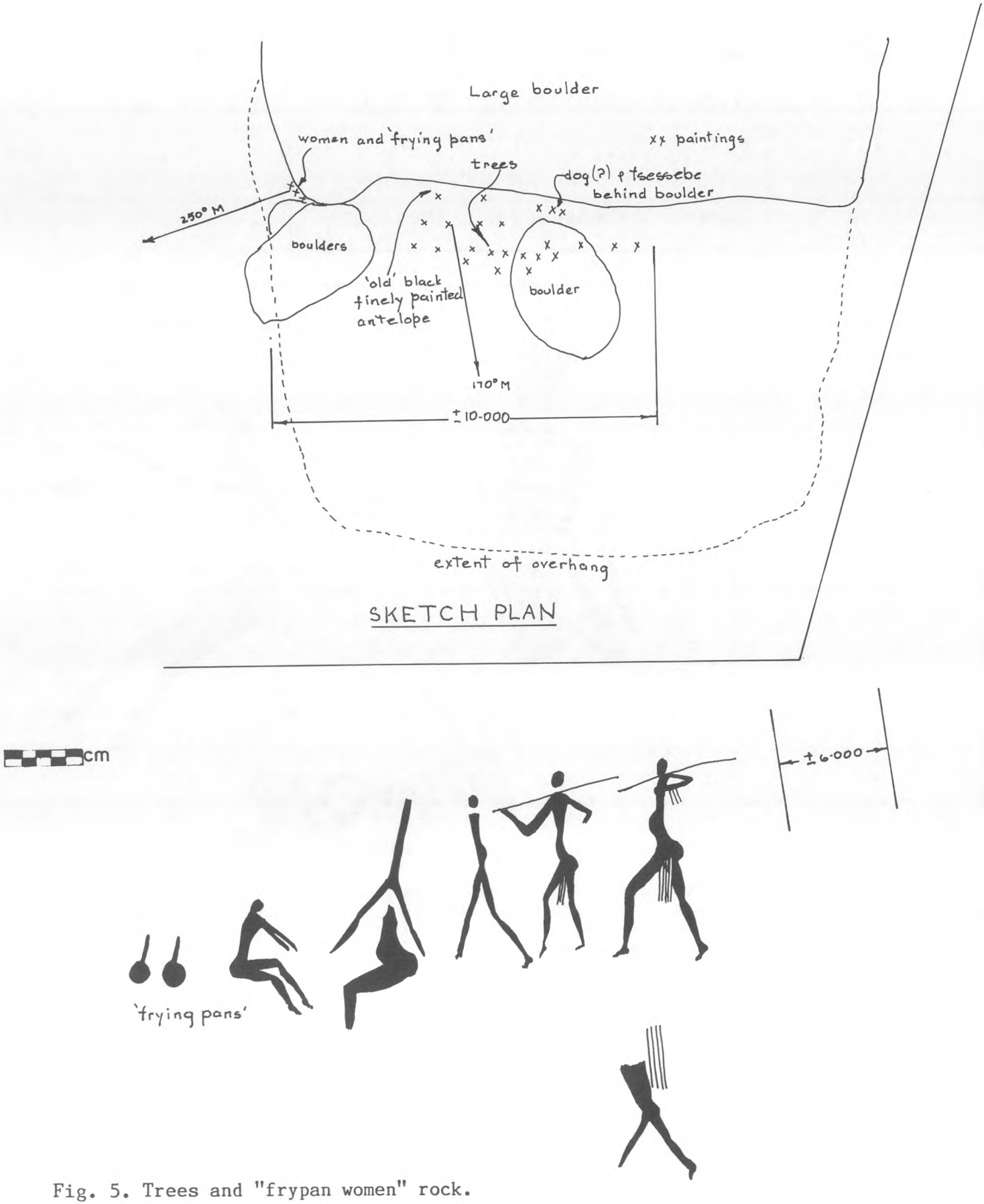
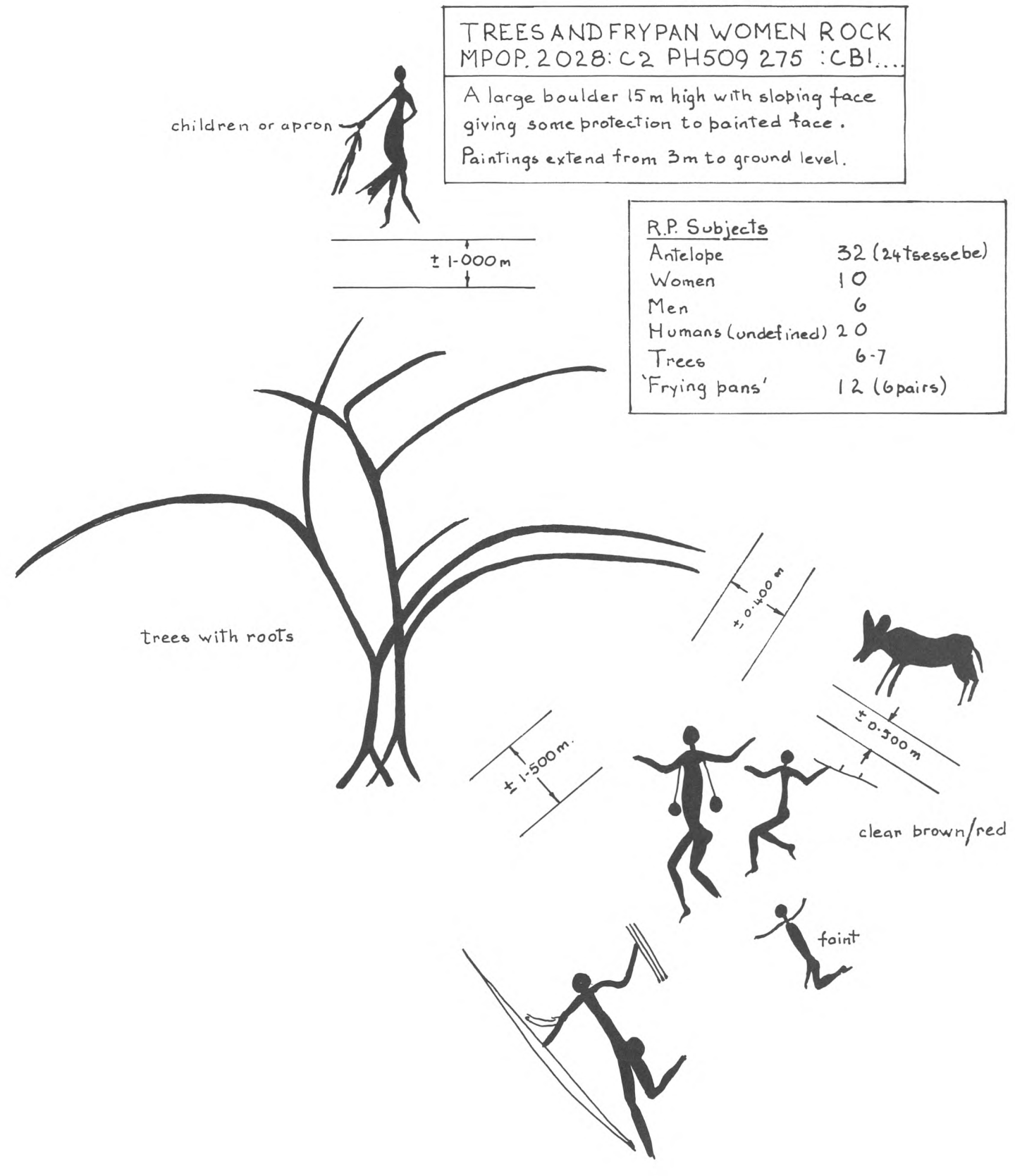


Fig. 5. Trees and "frypan women" rock.


TREES AND FRYPAN WOMEN ROCK
MPOP. 2028: C2 PH509 275 :CB!...
A large boulder 15 m high with sloping face giving some protection to painted face.
Paintings extend from 3m to ground level.
children or apron
± 1-000 m
R.P. Subjects
Antelope 32 (24 tsessebe)
Women 10
Men 6
Humans (undefined) 20
Trees 6-7
'Frying pans' 12 (6 pairs)
trees with roots
± 0·400 m
± 0·300 m
± 1·500 m.
clear brown/red
faint

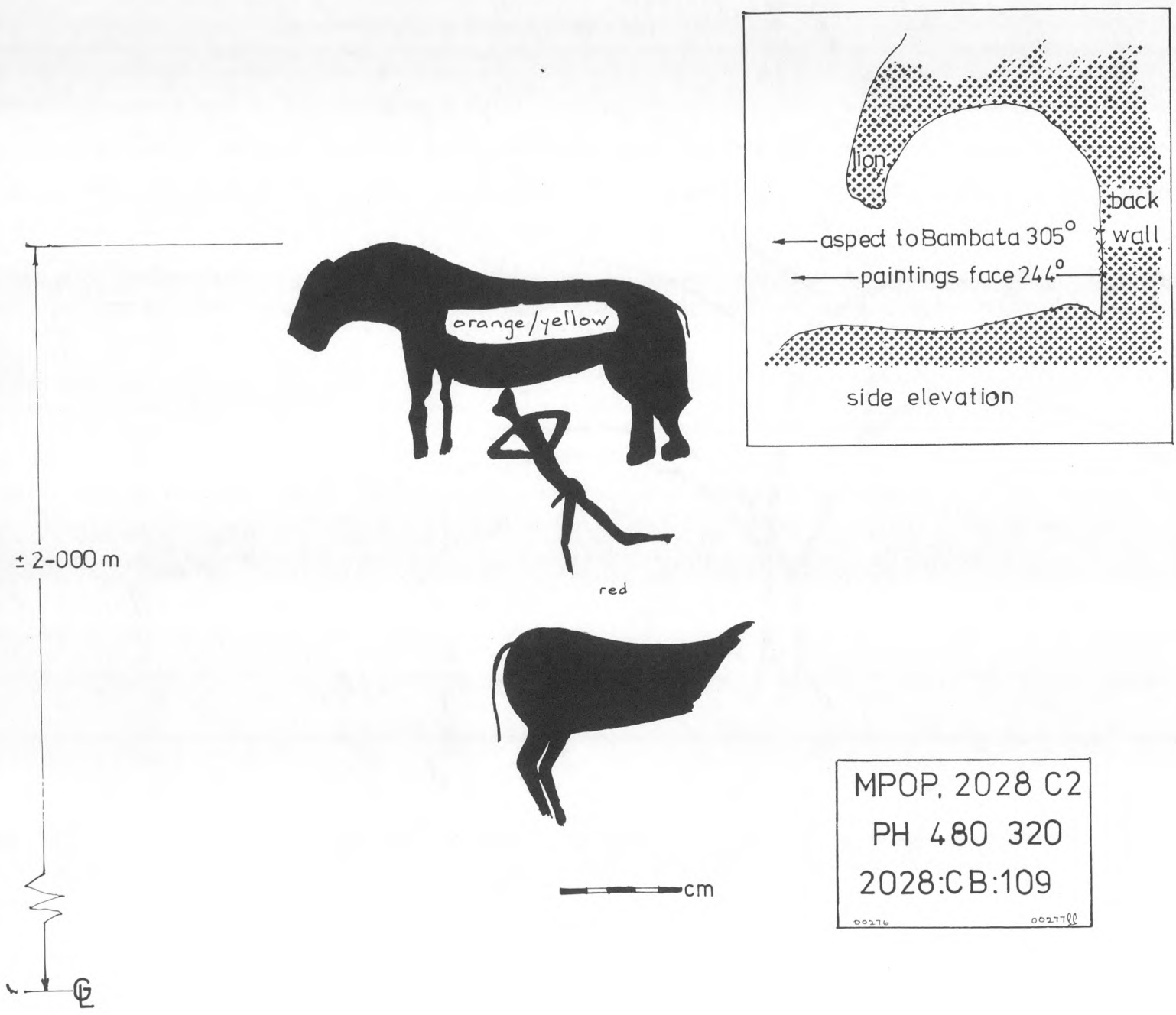
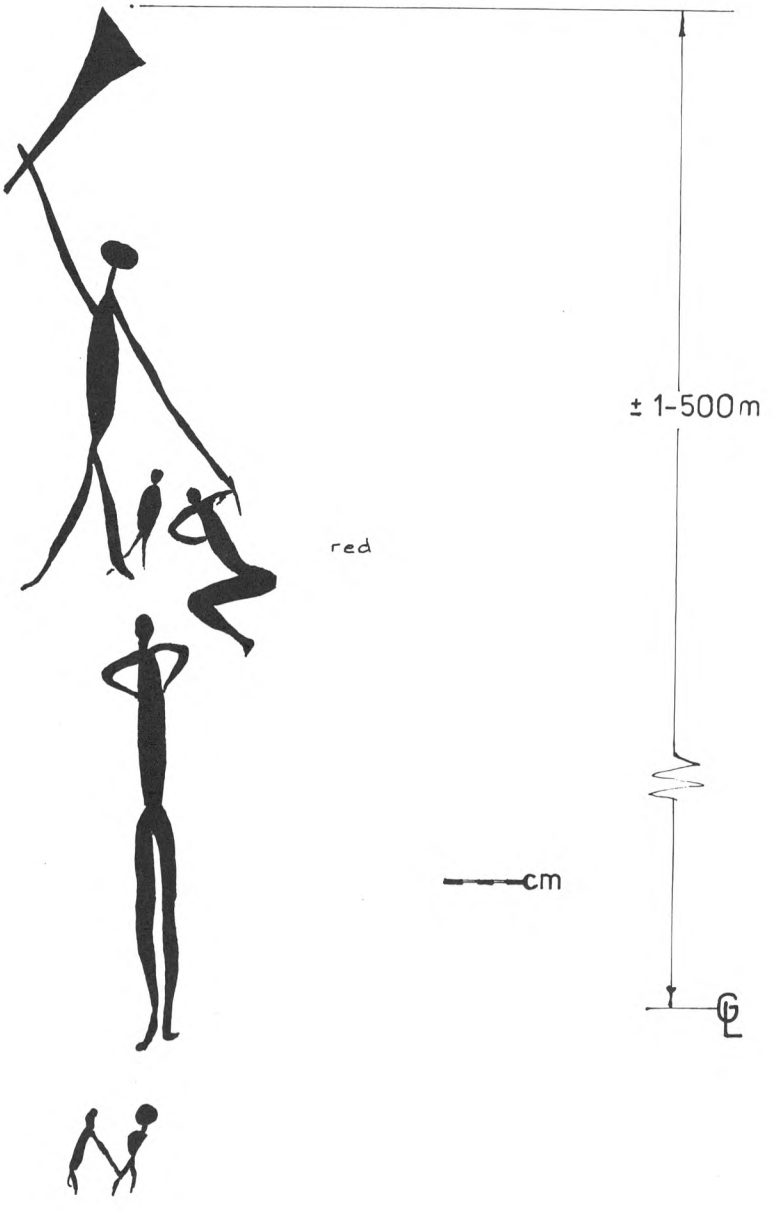


Fig. 6. Lion shelter, Bambata outspan, back wall paintings.

LION SHELTER BAMBATA OUTSPAN

BACK WALL PAINTINGS



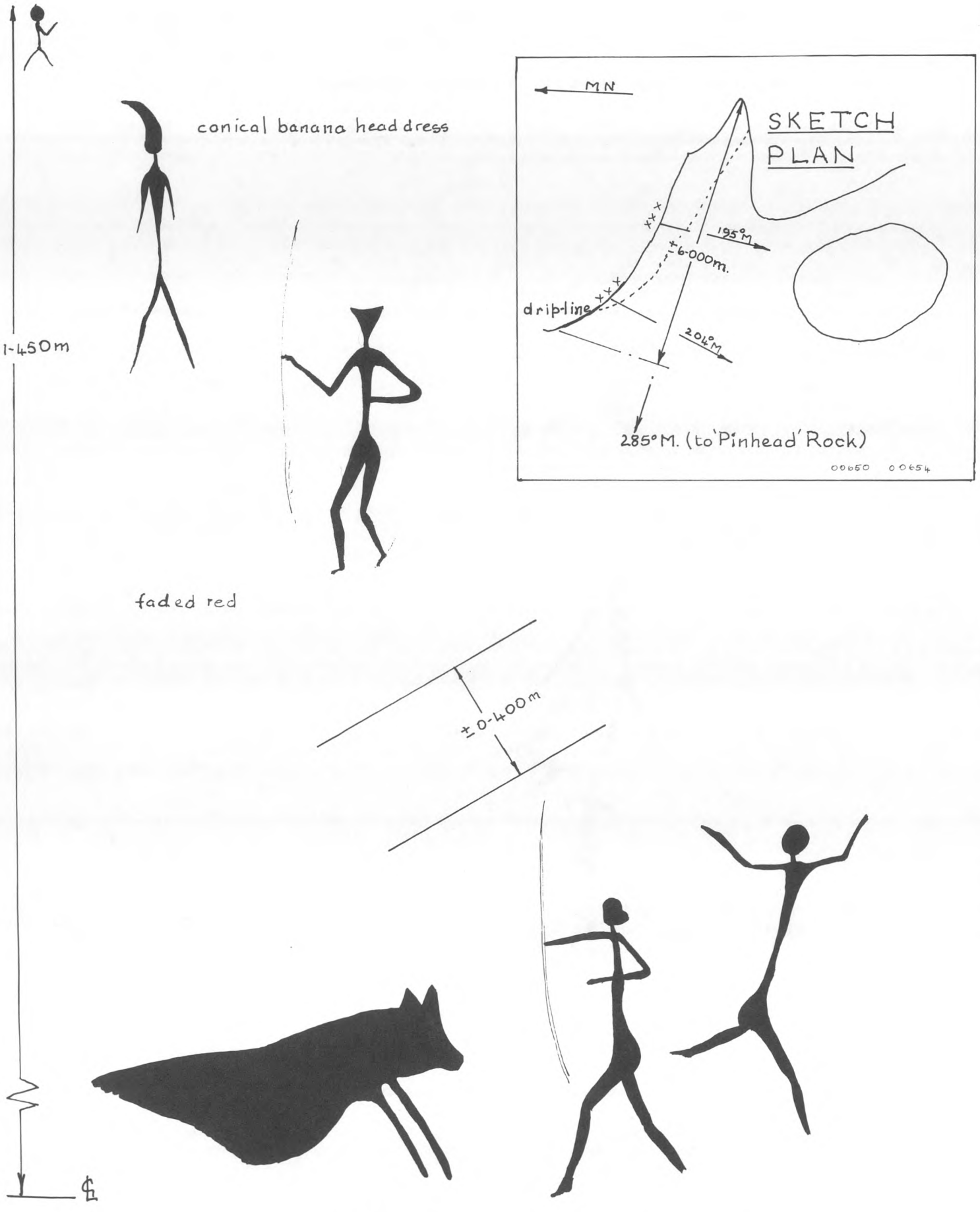
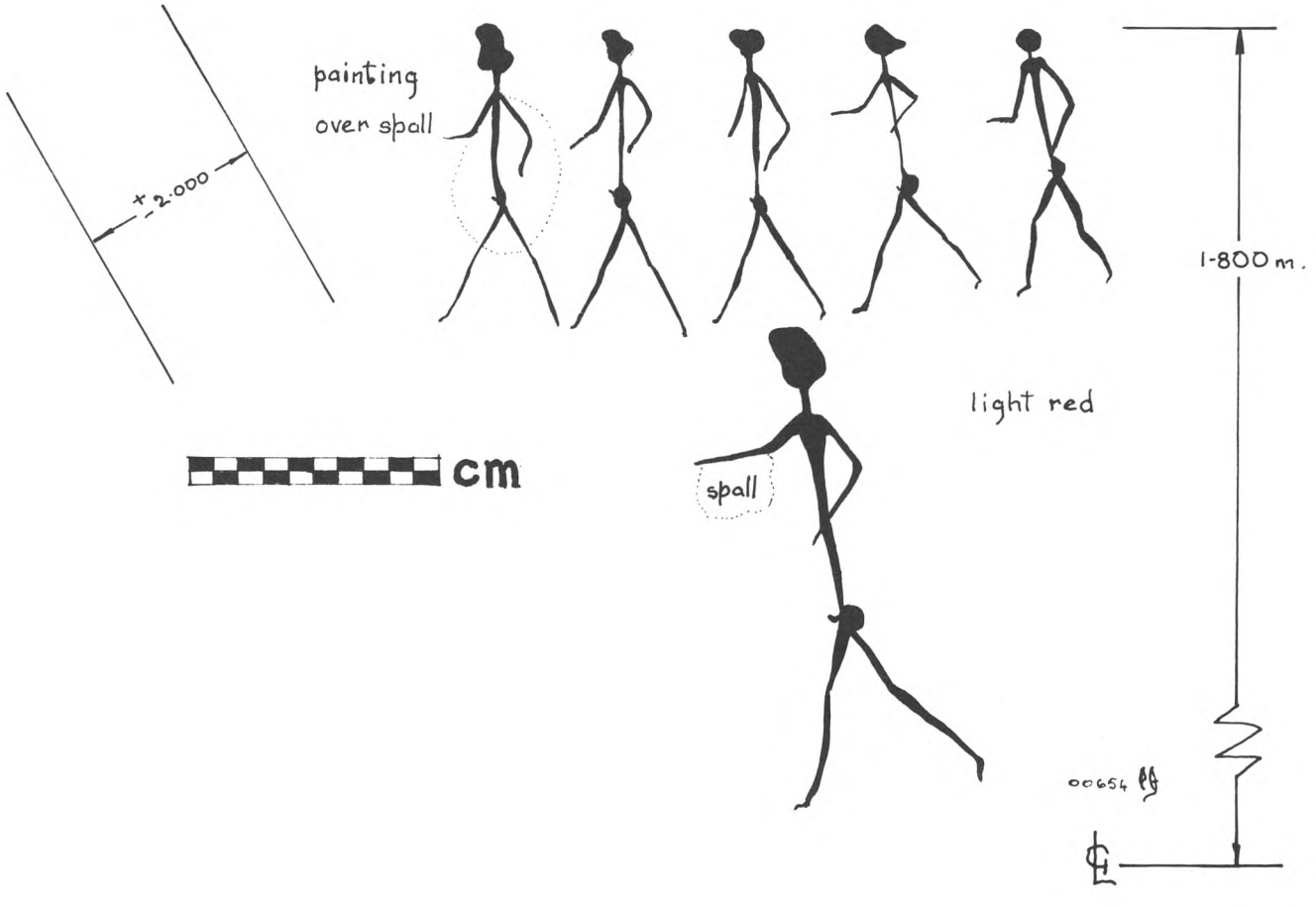


Fig. 7. Five young men and instructor.

FIVE YOUNG MEN AND INSTRUCTOR
MPOP. 2028 C2 PH509 274 : CB:1

Large boulders about 15-20 m. high which form the foothills of a larger hill to the N.. Paintings are on the N side of an indentation which culminates in a cleft. The painted face is surmounted by a boulder which forms a narrow overhang.



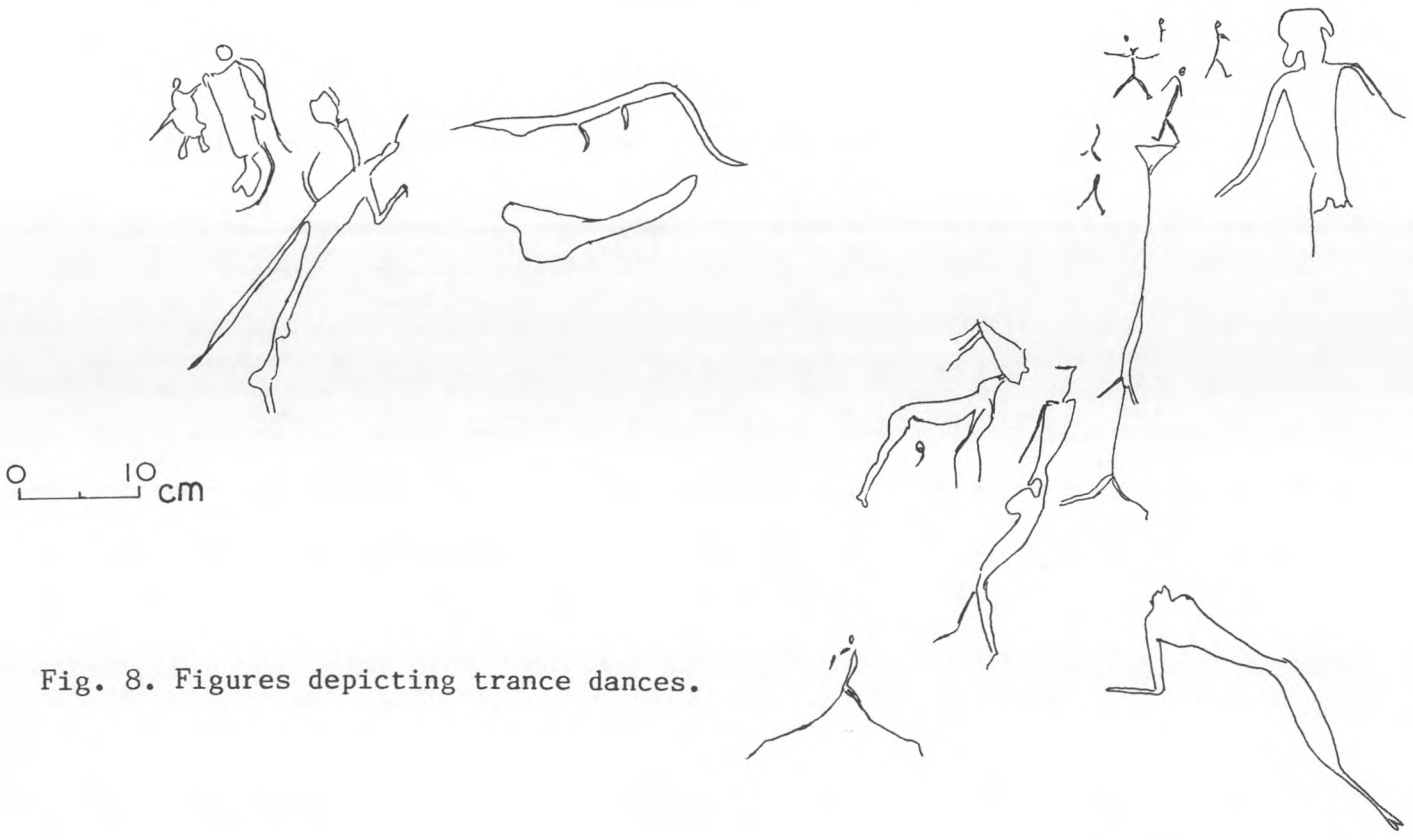


Fig. 8. Figures depicting trance dances.

ship' rights of a source of the golden sweetness. Bees and the sounds of the swarming were thought to denote immense supernatural power.

Many paintings depict processions in which each person carried something different, as in Fig. 13. Others show people on the way to some important ceremony, as in Fig. 7. All manner of ceremonies are depicted, and the one shown in Fig. 14 seems to indicate a degree of reverence on the part of some of the participants.

A curious article painted on many sites, sometimes by itself or around the neck of a man, usually a hunter, is an object I call a drum quiver. It sometimes has tassels hanging from each end. Three are shown in Fig. 15; two by themselves with no tassels, and one worn by an eared archer just above the neck of the largest antelope.

Many headdresses occur, and often an actual animal head or mask, which was and still is considered to give power to the wearer (Figs. 4, 13, 14, 15, and 16). Some are distinctive, such as the upper-left person in Fig. 7 and the trancer in Fig. 8.

Many paintings are meant to be seen from a distance, and must be giving visual warning or notice of something. The procession in Fig. 13 can be seen 300 or 400 metres away; it is on a distinctive white streak on a backing wall of a ledge nearly at the top of a small mountain. However, some are in almost inaccessible places, and the shapely lady in Fig. 17 is in a very low overhang of a boulder in the middle of a stream bed.

For the sake of clarity, many of the illustrations in this paper are in outline only. The actual paintings are infilled with varying shades of red and brown, unless otherwise stated; however, there are some masterly drawings in several places in the Matopos that are in outline only. These drawings are often large and drawn with a sure hand. The white rhino-

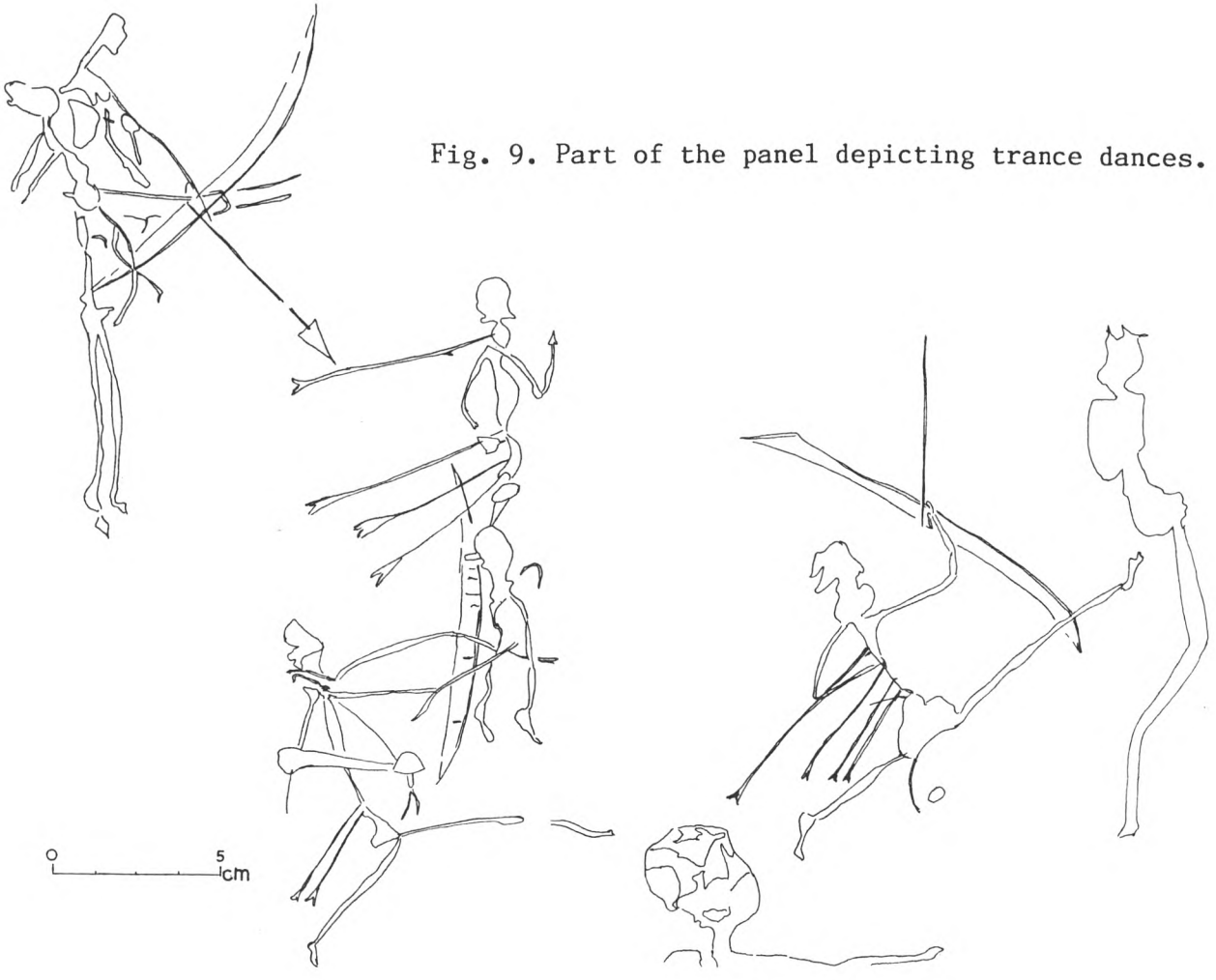


Fig. 9. Part of the panel depicting trance dances.

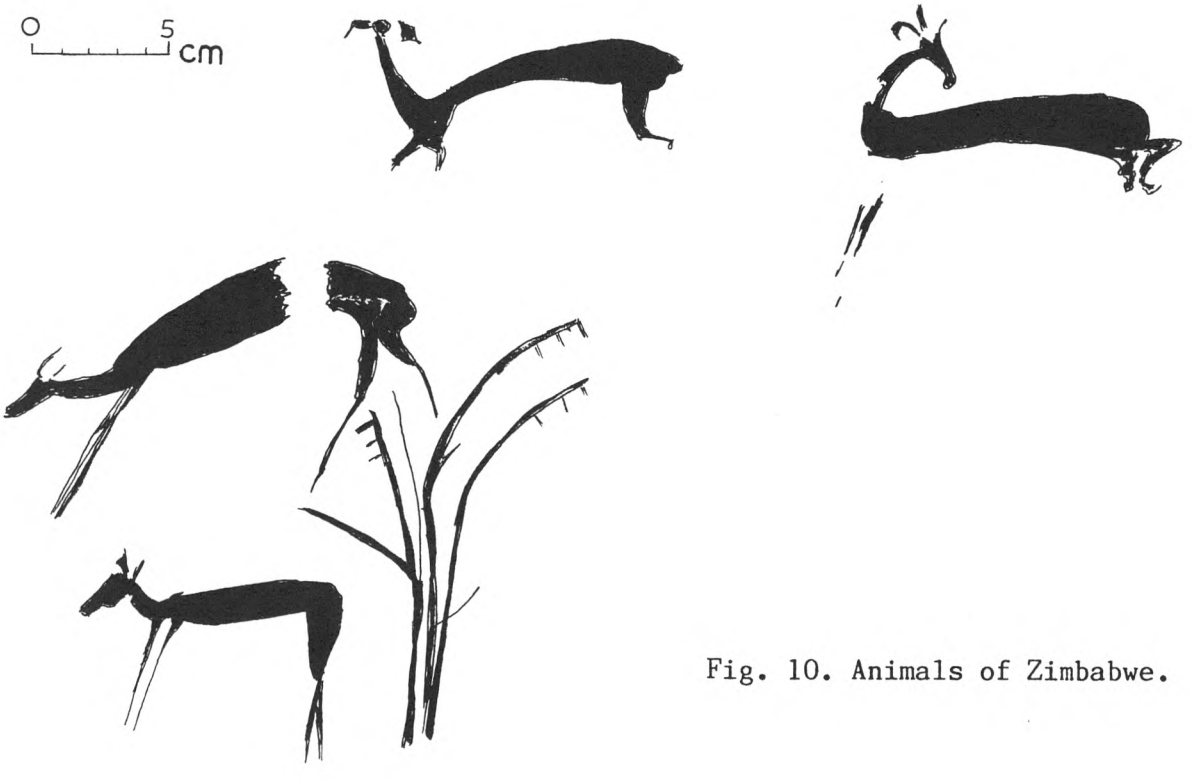
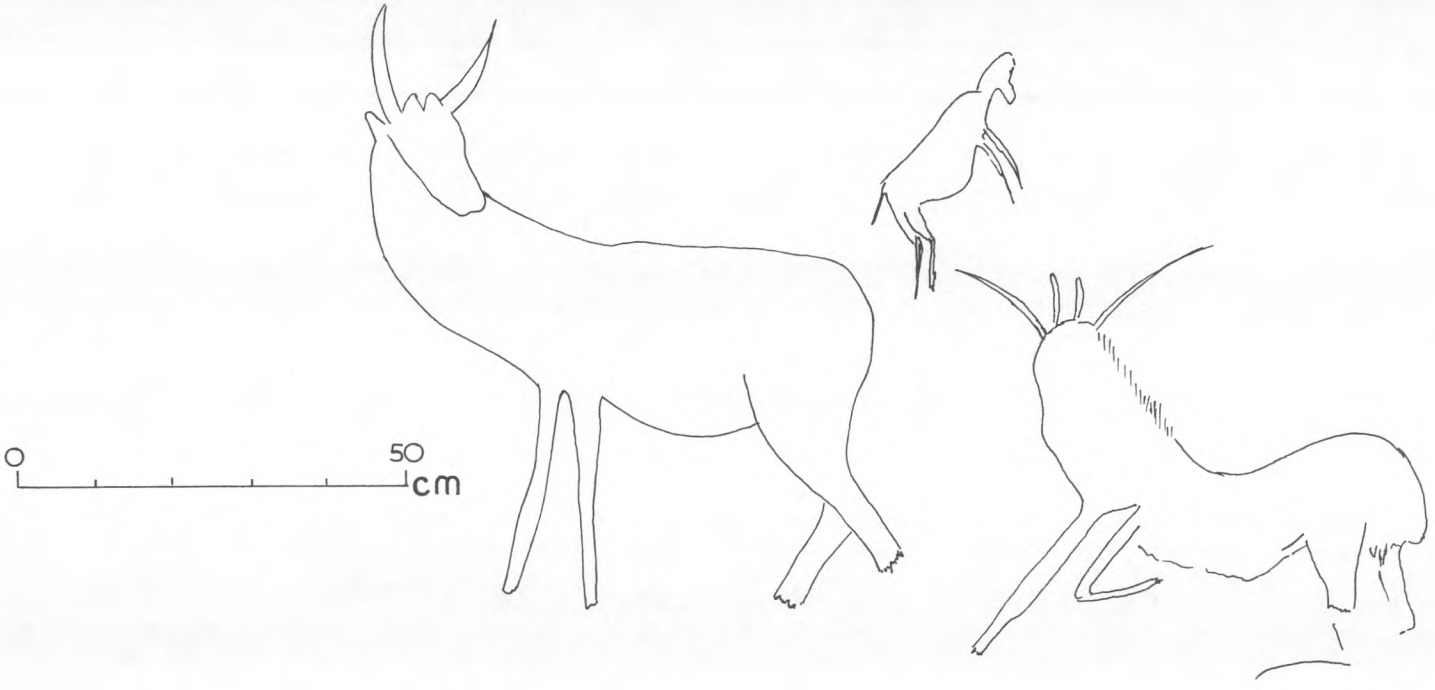


Fig. 10. Animals of Zimbabwe.

Fig. 11. Animals of Zimbabwe.



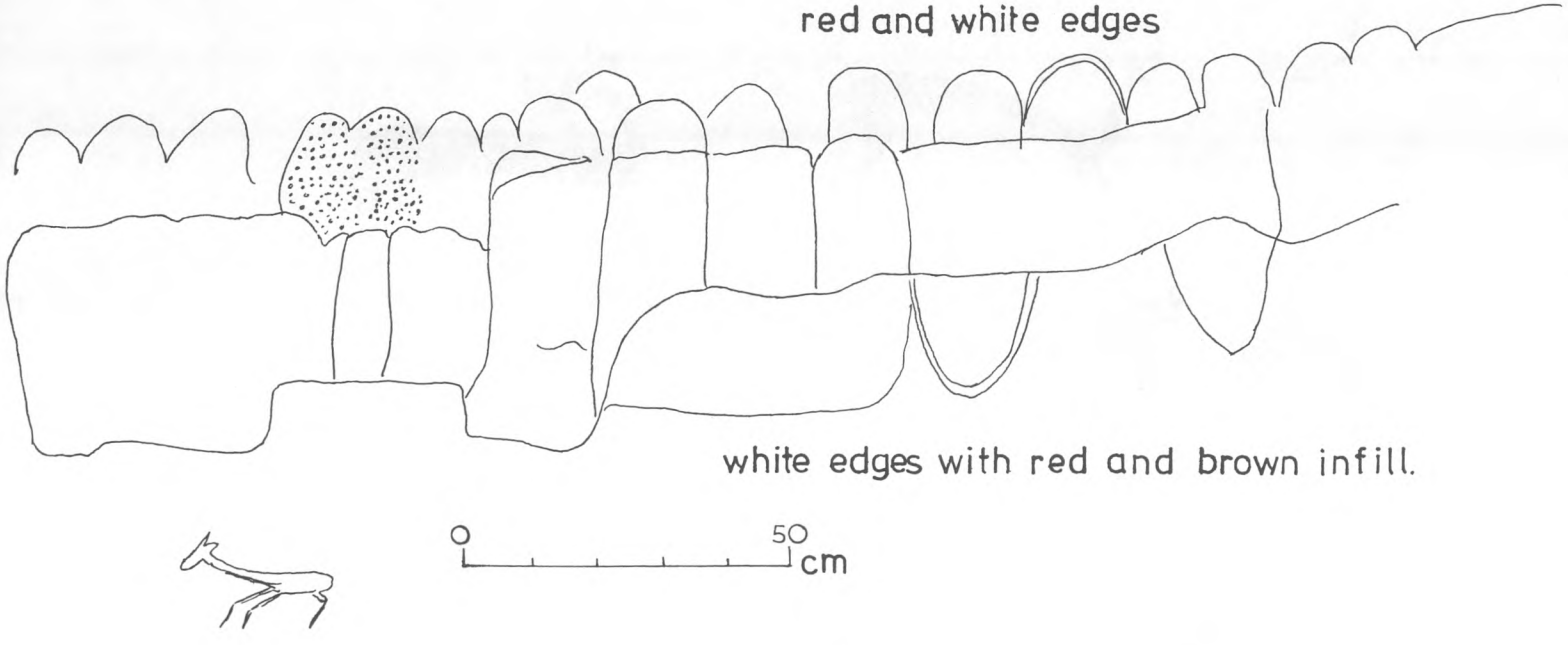


Fig. 12. Mysterious paintings appear -they may be bees' nests and honeycombs.

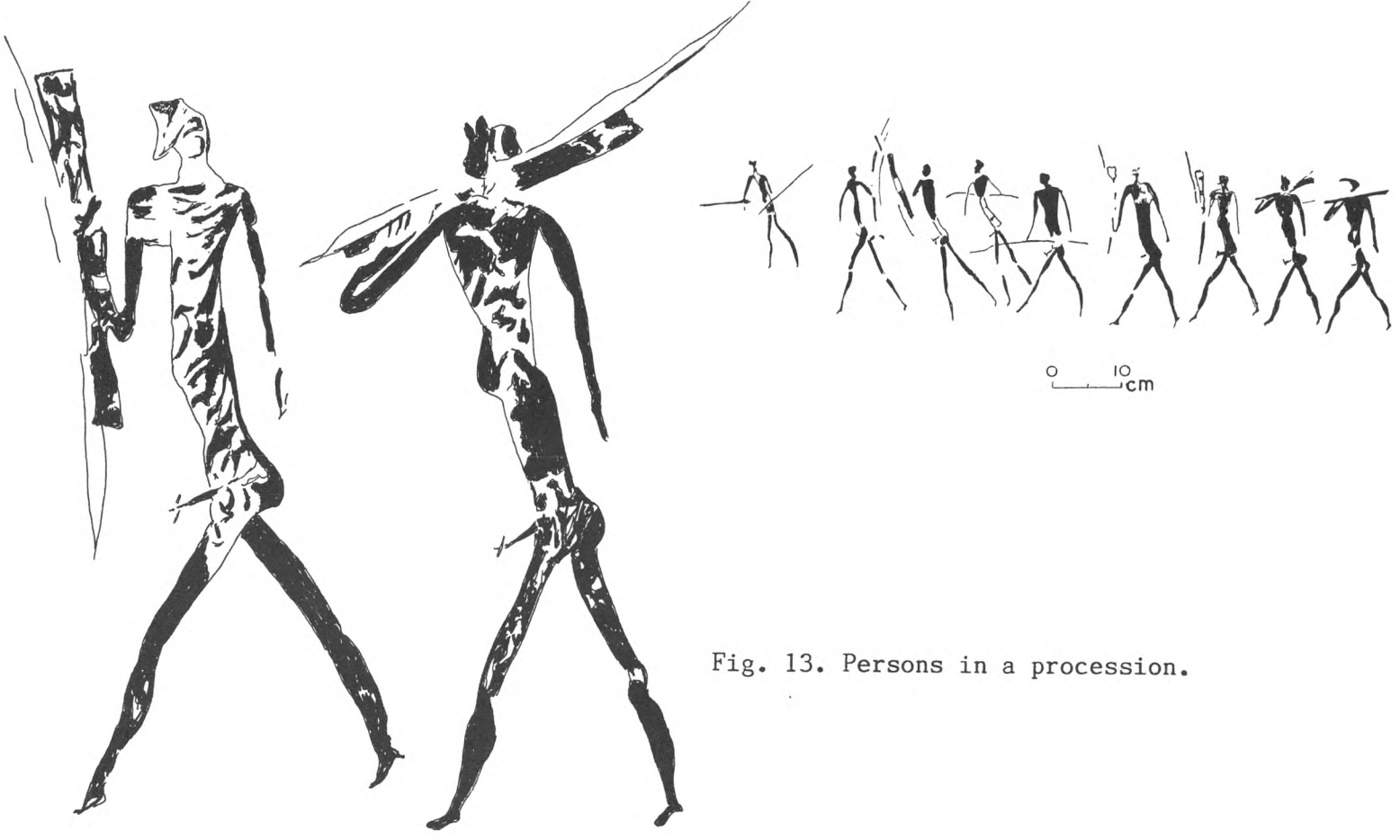


Fig. 13. Persons in a procession.

half actual size

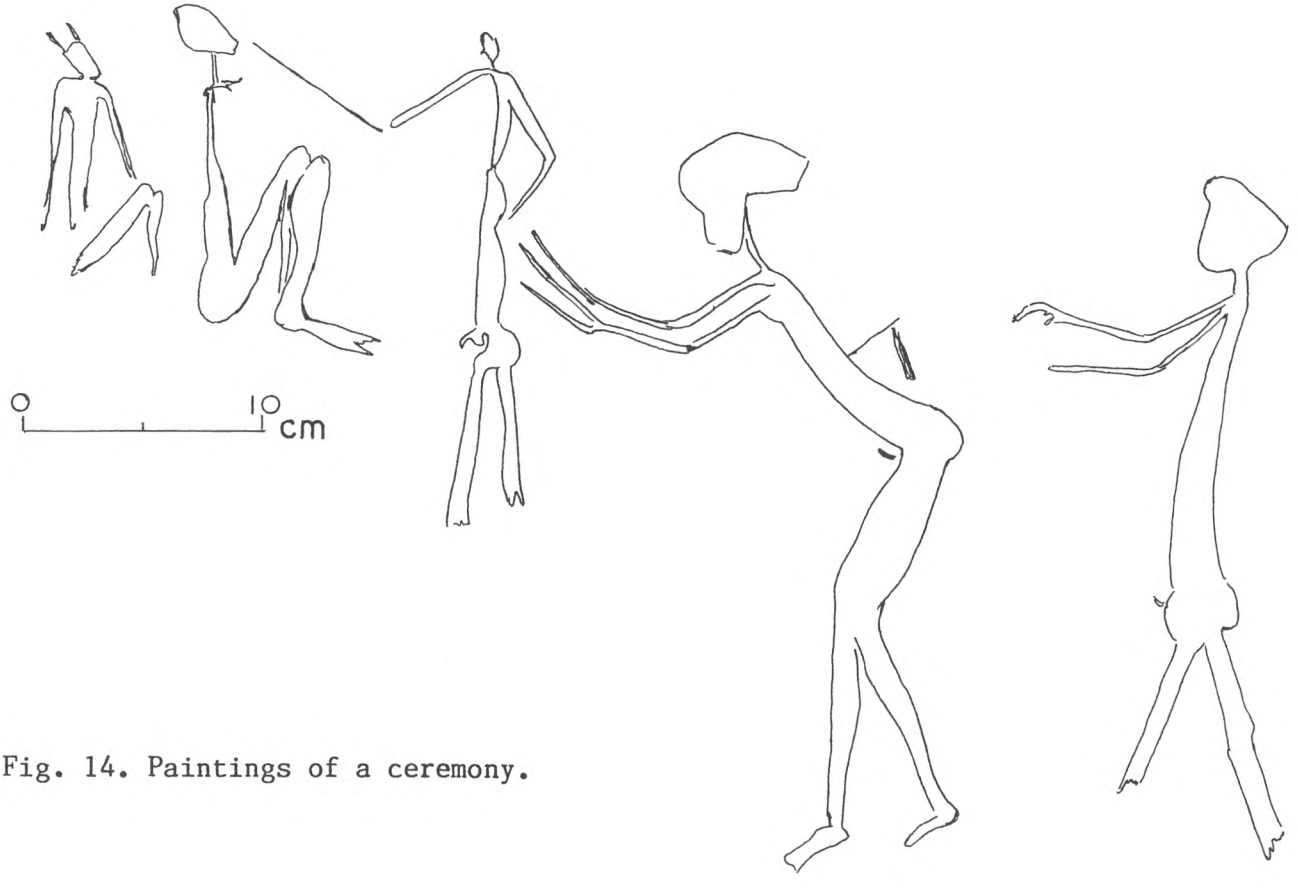


Fig. 14. Paintings of a ceremony.

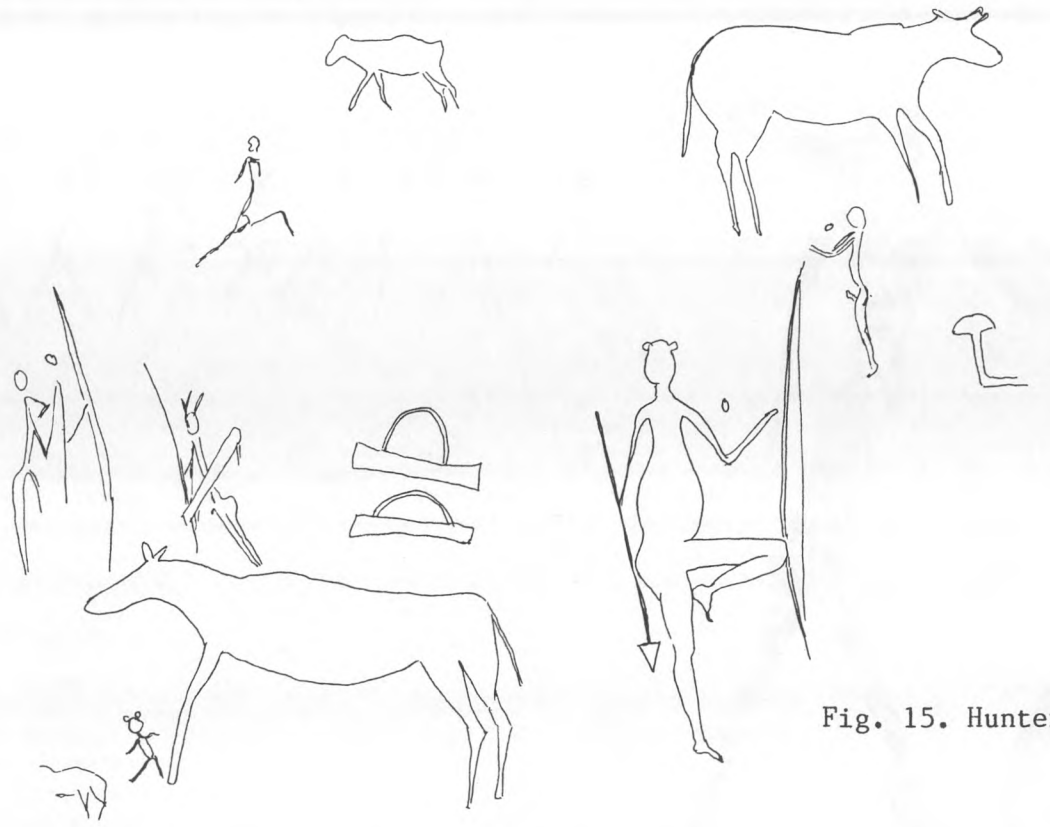


Fig. 15. Hunters with drum quiver.

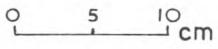
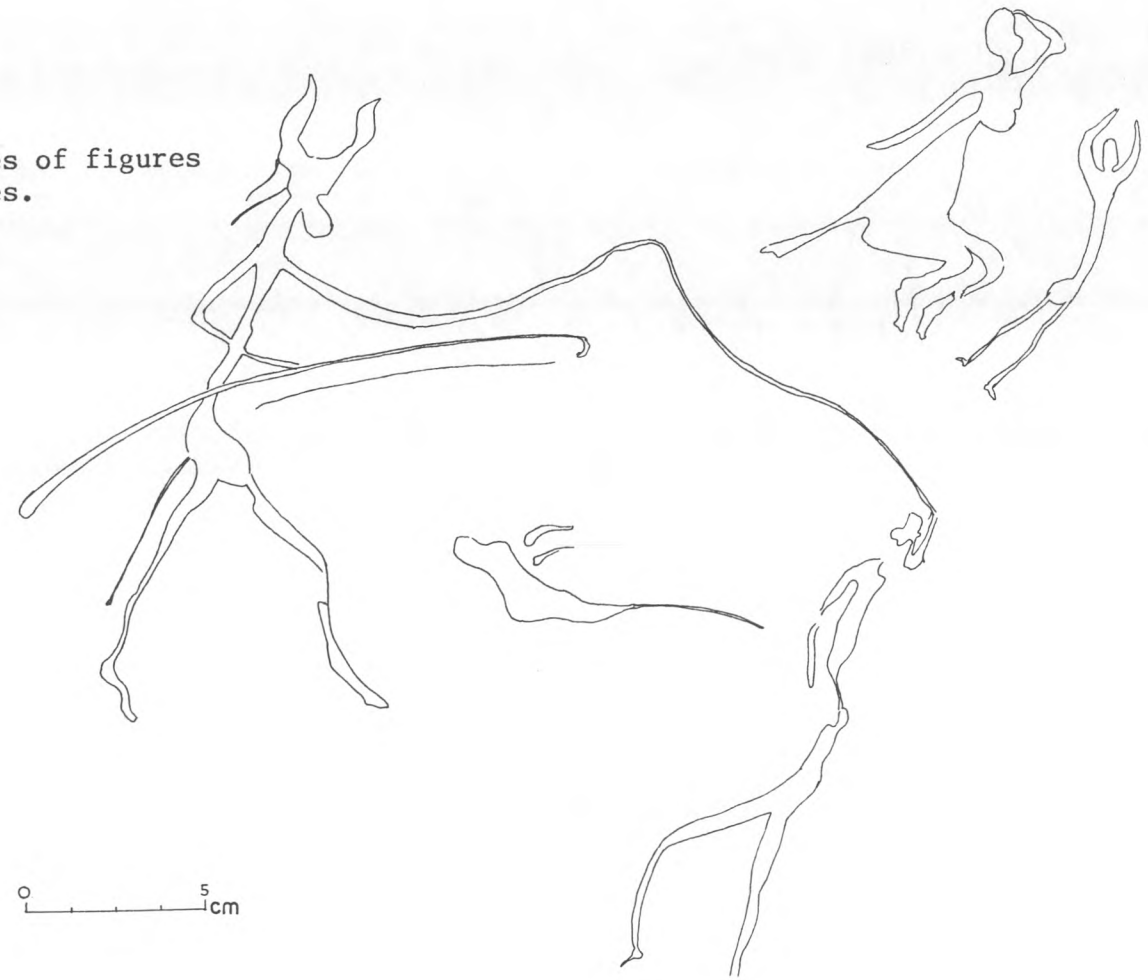


Fig. 16. Examples of figures wearing headdresses.



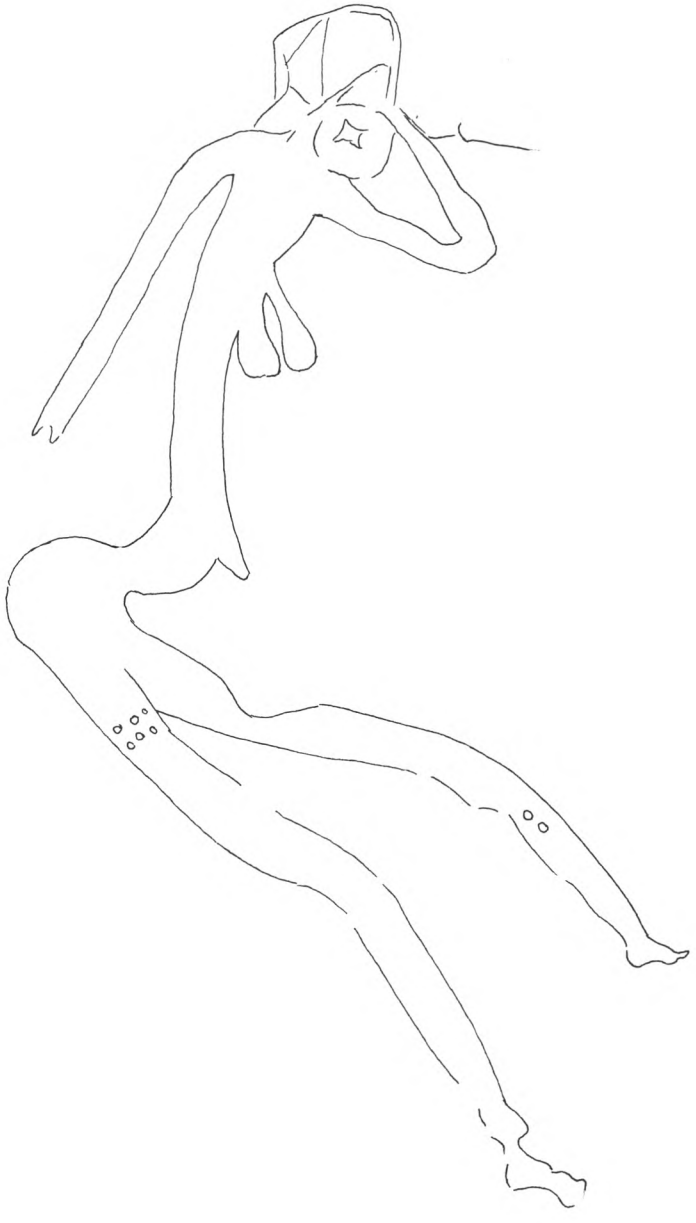


Fig. 17. Is the lady giving a warning?

cerous shown in Fig. 18 is of this type and gives the name to this style of painting. White rhinoceros are still found in the Matopos and are comparatively docile compared with the more ferocious black rhino. The distinctive shape of the lip of the white rhino can be seen in the drawing.

The drawing of the wildebeast or gnu in Fig. 19 is superb and must rank as one of the finest examples of rock art anywhere. It is in the 'White Rhino' style of outline of fine red lines.

Also in this type, and perhaps appropriate to the tail end of this paper, is the person shown in Fig. 20. Often paintings, or perhaps more properly drawings, in this style show perspective and it is clearly seen in the emplacement of the glutaeal muscles.

CONCLUSIONS

The types and styles of paintings in the Matopos seem almost endless and those shown here are a small selection. It may however give some inkling of the magic of the place and part of the tangible evidence of the wonder it has inspired in mankind through thousands of years.

ACKNOWLEDGMENTS

The Chairman and Board of Trustees of the National Museums and Monuments of Zimbabwe for employing me in what I regard as the most satisfying job in the world; Mr. H.D. Jackson, the Regional Director of The Natural History Museum of Zimbabwe, Bulawayo, for his unfailing courtesy and encouragement; Mr. C.K. Cooke, Departent of Antiquities, Natural History Museum of Zimbabwe, Bulawayo, for being a constant source of wisdom and lore; Mr. K.R. Robinson, Rennydene Farm, Bulawayo, an archaeologist of high repute who finds time to impart bits

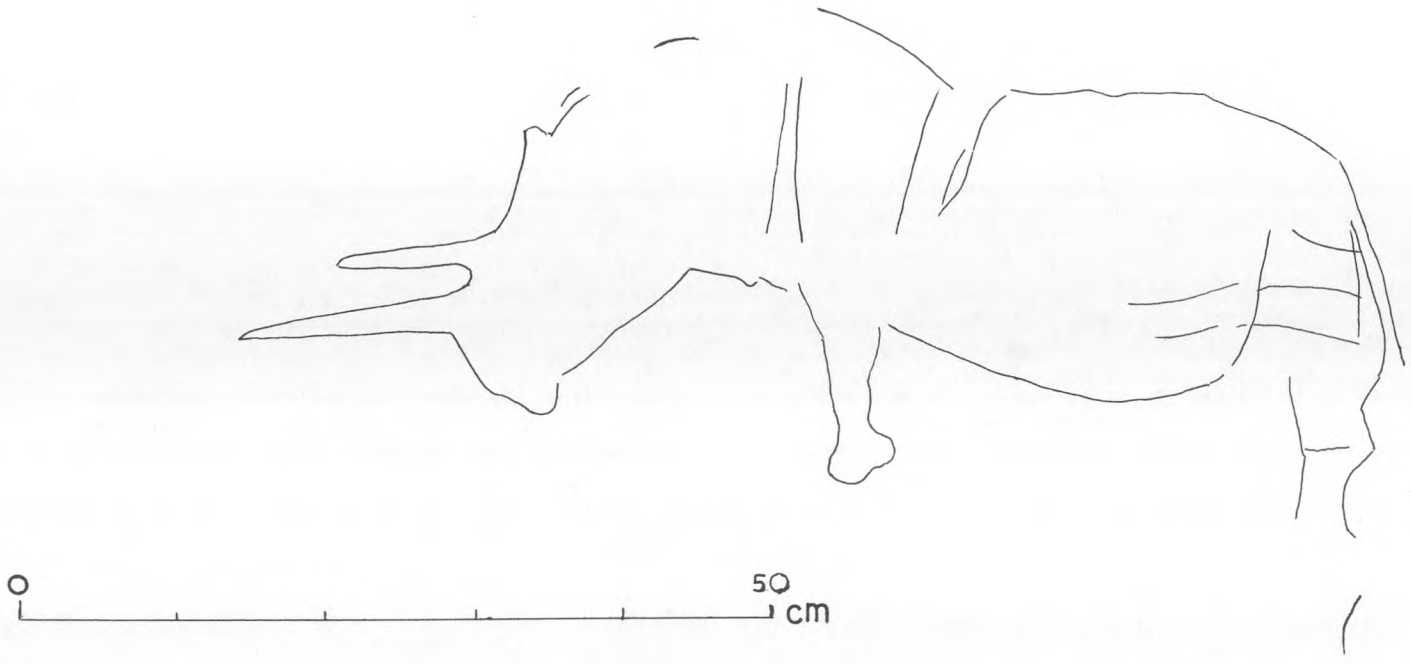


Fig. 18. A white rhinocerous, showing distinctive shape of lip.

Fig. 19.A very fine example of rock art depicting a wildebeest or gnuu.

half actual size

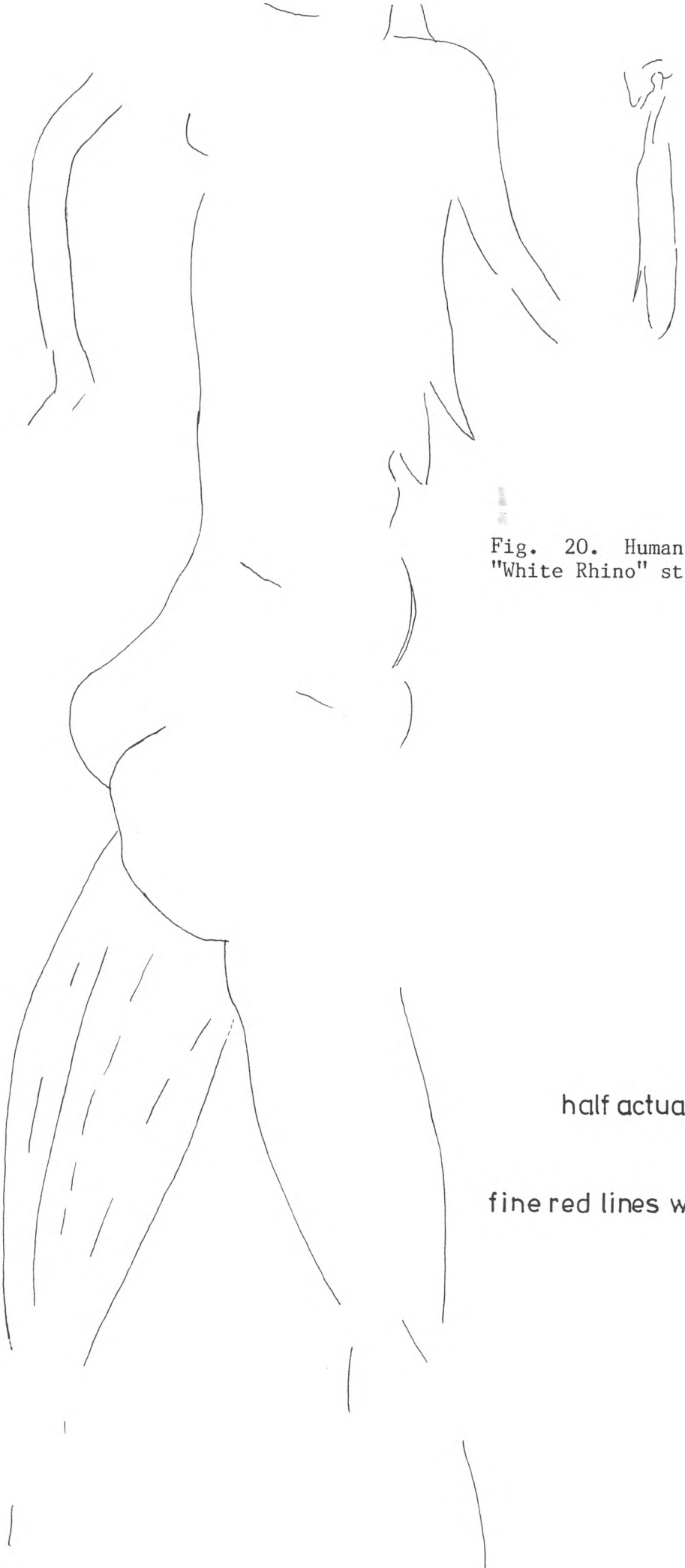


Fig. 20. Human figure in the "White Rhino" style.

half actual size

fine red lines with no infill

from his vast experience to me; Jim Bain, Archaeological Society of New Mexico, for generating such a high regard that I can overcome my reluctance to produce; Anne Poore, Archaeological Society of New Mexico for her gentle urging; Jennifer Genge, for performing wonders of typing at short notice for her exasperating father.

Natural History Museum, Bulawayo, Zimbabwe, Africa.

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COMETS IN THE ROCK ART OF SOUTHERN AFRICA

H.C. WOODHOUSE

(Editor's Note: This paper was written in mid-1985, before the return of Halley's.)

The imminent return of Halley's Comet, forecast for 1986, arouses renewed interest in its appearance as recorded on previous occasions and the appearance of comets in general. Halley's Comet was photographed in May 1910 and a reproduction of that photograph is reasonably easily accessible on pp. 82/3 of The Universe in the Life Nature Library series (Bergamini 1964). The photograph shows a more or less cigar-shaped nose, brighter but not markedly brighter at the end, gradually fanning out to a wider and less dense tail. I am assured that the nose is, in fact, considerably brighter but this merely results in an over-exposed portion of the photograph (Catchpole 1985). In the same publication are photographs of the Arend-Roland Comet of 1956 and of the Morehouse Comet of 1908. The Arend-Roland Comet is described as having a 'broad fan' as a leading-edge which appears as a needle point in the photograph owing to its being seen from the side. In respect of the Morehouse Comet, it is recorded that it changed its aspect from night to night and that several times the tail separated from the head. Obviously the appearance of comets is by no means consistent, even to the layman; in fact, they have a distinct individuality.

Bearing this in mind, it is of interest to record those rock paintings in Southern Africa that appear to depict either fireballs or comets and to consider whether any of them may be linked to a particular comet by some individual feature.

The first suggestion that comets were depicted in the rock paintings was made, so far as I have been able to ascertain, by the discoverer of the paintings at Nachitalo Hill, Zambia (Clark, J.D. in Summers, R. (ed. 1959. 188) Clark commented that the description Haley's Comet' (sic.) was 'rather apt.'

Some 20 years later, I wrote (Woodhouse 1979, 113), "Perhaps less enigmatic (than certain other enigmatic paintings illustrated in the publication) are three paintings of what I consider to be Halley's Comet. All three convey the impression of a heavenly body with a brilliant tail - surely an inspiring subject for a prehistoric artist." After considering the photographs already mentioned, I am inclined to revise that opinion by dropping the specific reference to Halley's Comet but would adhere to the view that either fireballs or comets are depicted and would increase the number of sites to six in the light of subsequent fieldwork.

In deference to the, regrettably, unknown artist and equally, to the unknown discoverer of the Zambian painting it seems appropriate to deal with that first. I visited and photographed it in 1972 and had no hesitation in agreeing with the discoverer that it had the appearance of a comet. To avoid an ethnocentric interpretation, it would obviously be desirable to have more information about the artist, his peers, and his times. Unfortunately such information in respect of the Zambian paintings is even scantier than for rock paintings further south. On the basis of all the available evidence, Clark (op.cit.) took the view that the paintings were probably the work of people of the Later Stone Age living a hunter/gatherer way of life specially attuned to a largely forest environment with a 'tool-kit' of small stone tools known

as the Nachikufan Culture State III; not markedly different from material cultures associated with the Bushmen in South Africa. But on the whole the Zambian paintings are very different from those in South Africa and Zimbabwe in that they are mainly non-representational (to our eyes) and where recognisable animals or human beings are portrayed, they are usually static and completely without the dynamic qualities of the paintings further south. This implies that we may have difficulty in ascribing the representation of a comet to our comet painting. Clark, understandably, did not tackle this particular problem in a work of a general nature, but he did mention that there was a similar 'comet' sign near Kundabwika Falls on the Kalungwishi River found by M.S. Wagner in 1955. He did not reproduce it, and I have not visited the site.

Unlike most of the 'nonrepresentational' paintings, the 'comet' does have a certain dynamism, and the fact that the motif is repeated at another site indicates that it was meaningful to the artist and his peers. In dealing with the meaning of this art, Clark stresses the likelihood of magico/religious associations related to initiation, protective magic, rain ceremonies, and funeral rites. He also refers to the drawing of concentric circles in white and vermilion on their bodies by the people of the village of Kiokos in northeast Angola as a preventive measure against thunderbolts. Similar circles are found among the rock paintings. In an atmosphere of paintings associated with interests of this kind, it would seem a short step to the creation of a more or less representational painting of such a dramatic event as the appearance of a comet. It would have been most acceptable to include such a representation in protective magic or rain ceremonies. At the risk of ethnocentricity, I believe tht the Nachitalo painting represents a comet.

If asked "Which comet?" I must draw attention to a 17th century illustration of a comet reproduced on p. 175 of Planets in the Life Science Library, (Sagan and Leonard 1967). This particular comet, said to look like a feather, appeared in 1618. It has a distinct resemblance to the Nachitalo painting.

The first painting of a comet or fireball that I recorded, in company with my co-worker, Neil Lee, was in the Slabberts district of the Orange Free State in 1966. It had also been recorded by the Frobenius expedition in 1928-30. This comet painting, like that at Nachitalo shows a well-defined head but it has a narrow tail of consistent width. Two colours have been used; red and orange. It has been painted above and slightly toward the right of a group of people that includes the tall figures typical of a style found frequently in the upper Caledon River valley area. It is painted with the same paint and is an integral part of the scene depicted. Seated figures on the left of the group, presumably women, are clapping, as though providing the rhythm for a dance, but the central figures, presumably men, are not so animated although one bends forward in the attitude of miming an animal, and all carry a stick in each hand, so they are equipped to mime in a similar way. Such miming is depicted at other sites in the eastern Orange Free State. There are two prone figures on the right that might be regarded as people in trance (Lewis Williams 1981), and one on the left that has the general appearance of an ales (flying creature) (Pager 1971: 342), although it does not have wings and so may be a modified version of the concept of a man completely in trance. There is a yellow eland painted over the central figures. Unfortunately large areas of

this painting have exfoliated but it conveys the impression of an important social event, probably a dance, and in my opinion, on the occasion of the appearance of the comet. A further, similar example painted at a more acute angle with the head at the bottom has recently been recorded not far away in company with standing figures and one in the crouching "arms back" position.

A few kilometres from this scene is a fourth comet painting in different colours, mainly dark red and white, and with the interesting additional feature of the comet having two heads. The ability of comets to split into two is exemplified by Biela's Comet which did so in 1846 and reappeared in this form in 1852 before disappearing and ultimately disintegrating into a shower of meteorites. It is interesting to think that a prehistoric artist recorded such an unusual cosmic event on the wall of a rock shelter in the eastern Orange Free State.

This painting is accompanied by a unique (at present) scene of a large snake which is raising its head toward a well-equipped man who is holding toward it the limp corpse of an animal, apparently a small buck. The man's equipment comprises a bow, a large quiver of arrows, and a number of ostrich-feather wands, such as were used in hunting to arrange decoys or distractions. The action of offering the corpse of the buck to the snake has no counterpart among other snake paintings but the relative sizes of the man and the snake recur at many sites. Striding across the snake's back with legs artistically overlapping, are nine or ten other human figures painted in the same style as the principal figure. One or two have bows and quivers but they are not all obviously armed. Above this group and just below the comet is a single figure painted in pink. He flexes his knees, bends forward and raises his arms. He would appear to be playing a significant part. A herd of eland is interwoven in the scene.

To explain a unique painting without the benefit of the artist or his viewers is difficult, but snakes certainly played an important part in the beliefs and values of many African tribes (Schmidt 1979) including the Bushmen of the nearby Drakensberg (Orpen 1874). They were strongly associated with rain and indeed personified it (Schapera 1930: 178). Although there is no record of an offering to a rain snake in the ethnography of the Bushmen, their neighbours, the Hottentots were recorded as having killed pregnant animals as part of a rainmaking ceremony (Shapera 1930: 378). The interest of the Bushmen in heavenly bodies is summarised by Schapera who goes so far as to describe it as 'worship'. A comet would undoubtedly have attracted considerable attention and might well have been linked with a rainmaking ceremony, by a rain sorceror - possibly the pink figure in the painting. The existence of such people is well vouched for (Bleek, 1933:376). The meaningful manner in which the striding figures approach the man making the offering appears to indicate their intention to participate, and the significance of the whole scene is strengthened by the herd of eland -- symbol of the greatest interest and excellence to the Bushmen of the Drakensberg.

The fifth example of a rock-painting of a comet is in the Transkei in the vicinity of Matatiele. It is similar to the first two Slabberts paintings but is painted in only one colour, red, with an equally distinct head but a crooked tail. This painting is above and associated with a particularly large herd of eland painted in red and white. The human figures immediately below the comet fall into

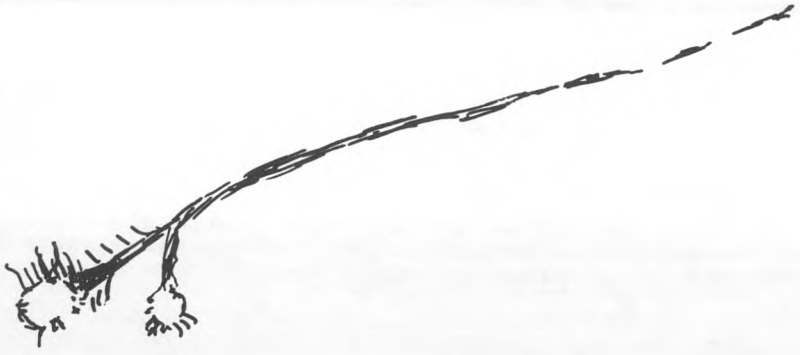

Fig. 1. Comet: Bethlehem District, OFS SA.

Fig. 2. Comet: Bethlehem District, OFS SA.

Fig. 3. Comet: Bethlehem District, OFS SA.

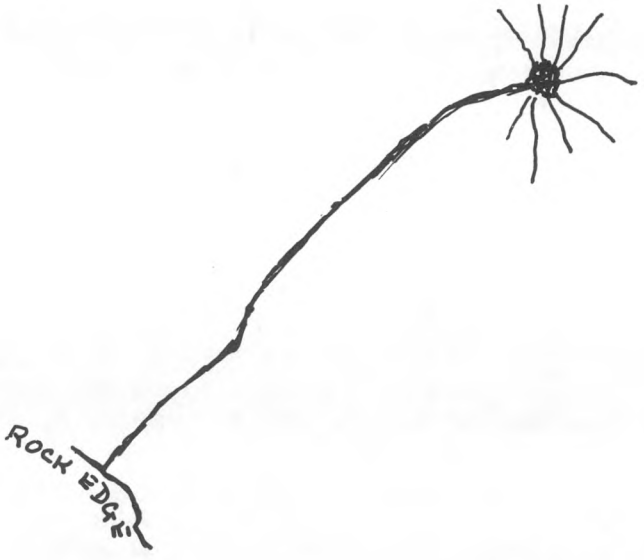

Fig. 4. Comet: Transkei.

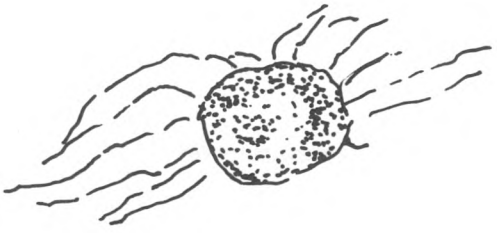

Fig. 5. Comet: Fricksburg District, OFS SA.

Fig. 6. Comet: Zambia.

two groups, separated by an exfoliated section of rock on which there were probably other figures which unified the two groups. Of the three figures on the left, two face each other in a slightly stooping position, with arms extended downward in front of them, with the third figure seated between them. The seven figures on the right appear to be walking forward to join them. The seated figure and five of the figures on the right wear karosses. The heads of another five people appear below the left-hand group but their bodies have substantially exfoliated so that their activity is unclear, but they could be a closely knit dancing group. They are superimposed on a painting of a seated reed buck. Behind one of the main 'arms-forward figures' is a small seated figure with arms raised. It is painted in a darker pigment. In its attitude and its differentiation from the other figures, it is reminiscent of the pink figure at the second Slabberts shelter.

The heads of all the figures are markedly prognathous, to a degree where certain of them might be classified as those of buck - either therianthropic figures or hunting disguises. There is, in fact, a therianthropic figure well to the left of this scene but still part of it. Unlike such figures in other parts of the country, it does not have the head and hooves of a buck and the body of a man; instead it has the head and tusks of a warthog (although the head is badly exfoliated), and legs/paws like a lion, but it stands erect. The warthog interpretation of the exfoliated head is fortunately reinforced by a clear painting of another, similar creature in a nearby shelter in the area. This therianthrope raises a stick and is clearly involved in the whole scene, which includes a number of other humans and animals so vague and faint as to add little of significance.

Again we have to attempt interpretation without the benefit of contemporary explanation, but this is obviously a very important scene, strengthened by the large and carefully painted herd of eland. The most significant figures are the tall 'dancers,' the comet and the therianthrope. I would suggest that it is another instance in which the appearance of the comet has been used as the occasion for a dance/ceremony and in which there is a leader --this time in the shape of the therianthrope. Such a figure may well represent a powerful sorceror or shaman, but it also expresses the Bushman concept that all animals were once people (Woodhouse 1984).

The final example appears to be a head only, although there are traces of a tail among some overpainting. It is in the Ficksburg district, not far from Slabberts, where three of the other examples are situated. It is associated with snakes and human figures, both seated and standing.

Knowing that the next appearance of Halley's comet will be more clearly visible in the southern hemisphere than the northern, it seems likely that the comet(s) that were recorded by the prehistoric artists of Southern Africa would have been particularly bright. This, combined with the features depicted by the artists, may make it possible for astronomers to identify them. Regrettably, there is, as yet, no way of positively dating the paintings themselves in order to correlate with recorded observations. If positive identification could be made it would, conversely, give us a date or a possible series of dates for the paintings.

ACKNOWLEDGMENTS

Thanks are recorded to site

owners for permission to visit the sites at which paintings were recorded and to Neil Lee for his continuing participation in the relevant fieldwork. I am grateful to Francis Thackeray and Robin Catchpole for useful discussion and to Sally Parker who made the accompanying drawings from my colour transparencies.

Institute for the Study of Man in Africa, Johannesburg.

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THE MYSTERY OF THE VETEADO MOUNTAIN ANTHROPOMORPHS AND RELATED MATTERS

THEODORE R. FRISBIE

INTRODUCTION

That which you are about to read is true; the mystery, as you will learn shortly, was of my own creation, and fortunately was solved prior to what would have been a highly embarrassing and erroneous publication. I believe telling the tale as it happened has considerable merit because I was prepared to write a paper to honor Jim Bain's work in rock art with the data at hand, based on what I thought were accurate recollections of events which occurred more than 20 years ago. The petroglyphs that provide the focus for this study, a pair of Mimbres style anthropomorphs (male and female), merited such an endeavor. However, the solution to the mystery yielded far more than originally anticipated. Consequently, I have chosen to incorporate these data as well.

MYSTERY

In 1965 I reproduced a male and female pair of finely pecked or dinted figures by projecting a slide (or slides) and tracing the outlines which I then inked, labeled, and framed. The resultant "picture" was hung in my study and with the passage of time was essentially forgotten. A few years ago, as luck would have it, a student requested that I supervise his independent study of rock art. After discussions we agreed that we would survey the subject with emphasis on the Southwest and Midwest and that he would, ultimately, produce a paper based on local rock art that had not been previously researched. Parenthetically, his paper was so well done that it has since been published (Booth 1985). In the course of our reading and discussions, the framed anthropomorphic pair fell under our scrutiny, as did a number of slides I had taken over the years at a variety of sites within the Southwest. To me, like so many others, rock art is a fascinating form and to photograph examples in the field, even in passing, is a worthwhile pursuit. In the past the resulting slides have occasionally found their way to someone engaged in research, such as M. Jane Young who was studying Zuni rock art for her dissertation. She had already published a co-authored pamphlet on the subject (Young and Bartman 1981). All of these incidents led me to conclude that I should attempt to do something with the unusually fine figures I had reproduced so many years earlier (Figure 1).

The second Mogollon Conference during October 1982 provided the perfect stimulus. Photocopies were made and taken to Las Cruces to stimulate comment from colleagues. It was here that my recollections were formalized. I was so sure of them, in fact, that I added "(Newton Site)" beneath "T.R. Frisbie 1965, Petroglyphs near Quemado, N.M." After all, the Newton Site and its immediate environs was the only place I had done any archaeological work in the Quemado area (Frisbie 1973), so how could my recall be erroneous? My only concern was how far apart the anthropomorphic figures had originally been because I had remembered tracing and closing the gap between them. In 1982 I did not attempt to locate the original slide(s) from which they had been derived. [Petroglyphs that actually did occur at the Newton Site were of a crane and a long tailed quadruped, as well as a panel consisting of a scorpion, frog/lizard, swallow-like bird,

and a bird with serpent (Figure 2a, b & c); those were photographed in the early 1960s at the southern extremity of the low sandstone mesa.]

Las Cruces and the Mogollon Conference were marvelous. The reaction to the photocopied petroglyphs was also marvelous; however, excitement reigned supreme when Doug Fischer announced he had what he thought to be a near-identical pair on his ranch, which just happens to be near Quemado, about 12 miles from the Newton Site. Moreover, the petroglyphs on his ranch were on Veteado Mountain facing east, toward the site! Curt and Polly Schaafsma and others were perplexed. Such an occurrence of complex figures at two sites would indeed be rare!

Fischer, as promised, forwarded b/w photos to me at SIUE, noting that his figures WERE practically identical to mine, although the male "sash" was reversed. He expected I would be on the next flight to climb said mountain to see for myself! However, considerable time passed before the visit was finally arranged via letter and phone for July 2, 1985 at about 9:30 a.m. Because I was living with my adopted Zuni family for part of the summer, I asked if I could bring a Zuni nephew, Allison Lementino, with me. "Of course," was Doug's reply. Our schedule included four hours for Veteado Mountain, another four hours to visit the Newton Site, and if time permitted, a stop at Zuni Salt Lake to gather needed salt for family use. These plans were altered -- considerably.

Arriving on schedule, Doug was unable to accompany us because he had to check fences on the ranch, but he did lead us to the general area, commenting that we could park anywhere along the roadway that looked good to us. I remarked that the mountain did not look too steep from our vantage point. He smiled and sped off on his trail bike, leaving us to our own devices. We drove on, but decided to turn around and return to a place close to where Doug had left us. We parked and walked to the base of the mountain; it now appeared as a steep-sided, pinon covered MOUNTAIN. Veteado Mountain is not particularly high as mountains go. It has an elevation of 8,525 feet or a little over a thousand feet above the area's rolling terrain, but it is the highest point in the general area and is represented as such on topographic maps.

We chose to approach it from the northwest, climbing up to a saddle, and then along that to the final ascent up the west face. From the time we left the car until we were ready for the final ascent, I noticed an occasional potsherd-Tularosa B/W, St. Johns Polychrome and a few other types, as well as an occasional piece of debitage. Allison was more interested in a shed deer antler with six points and an occasional sighting or call of a jay or flicker. We maintained careful watch for "chitdola" (rattlesnakes) throughout the day, but except for a large diamondback crossing the highway before turning onto the ranch road, we saw or heard none.

From the noticeable end of the saddle one definitely had to crane one's neck upward to view the top of Veteado. Although Doug indicated the petroglyphs were to be found on the southeastern portion of outcroppings, we decided that checking the western face might produce something as well. We began the final ascent; it was very steep and as we got closer to the top we encountered the first of several weathered, basaltic rock slide areas. Here the rocks were relatively weathered, smooth-sided and of variable sizes. We paused to sprinkle sacred meal before proceeding. Above us were the jagged basaltic rock faces of the

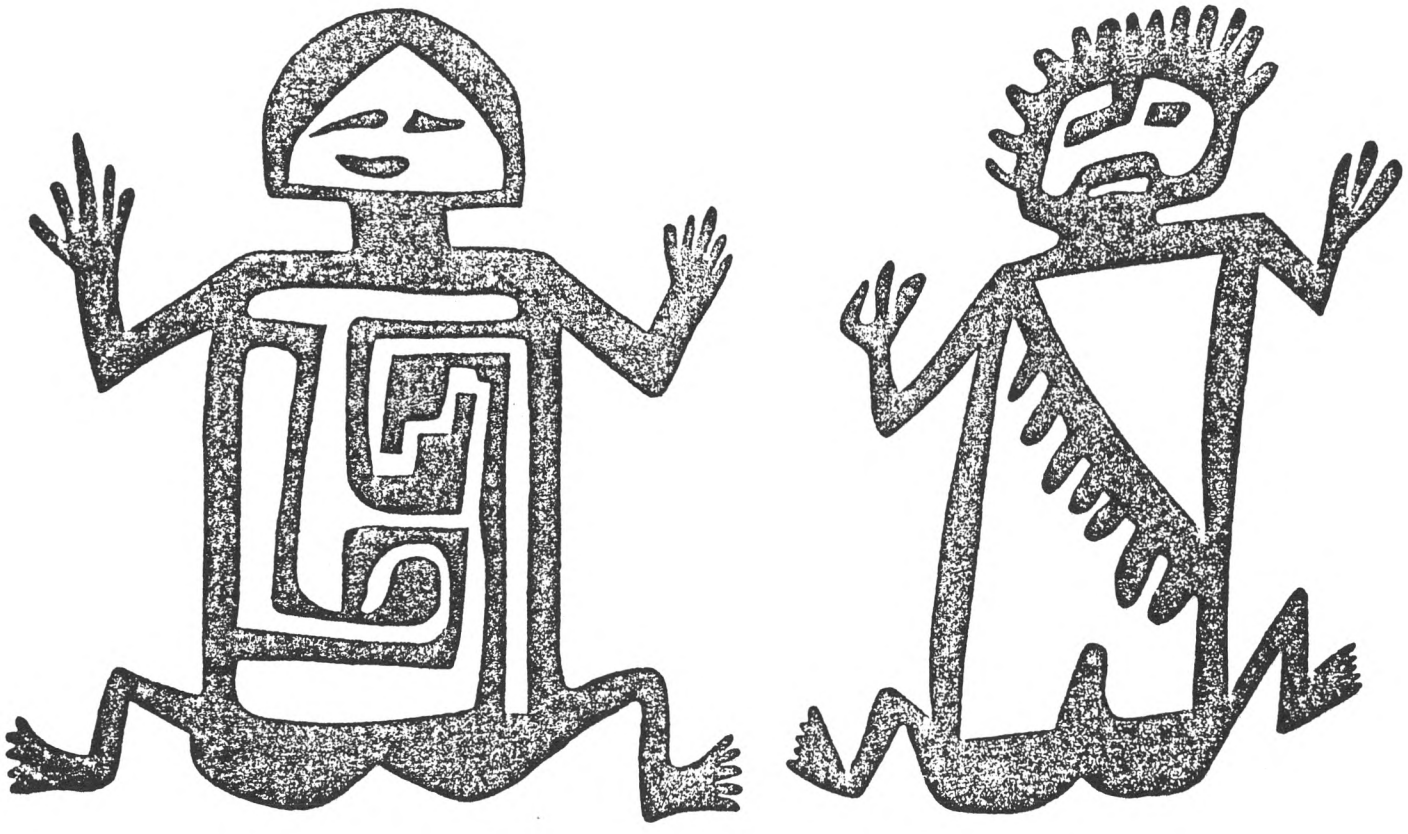

Fig. 1. Original pair of anthromorphs, drawn from a slide of a pecked petroglyph.

summit. Traversing the talus along the base of these we saw no evidence of petroglyphs, but did note a recently used eagle nest along the summit edge. Allison climbed about 50 feet to reach it, collecting a few small fluffy ("breath") feathers in the process. Continuing along the talus we rounded the southern end and even be- fore the eastern side was reached, petroglyphs were in evidence. They occurred along the talus, 30 to 50 feet from the summit; all were easily viewed and photographed, and none were in inaccessible locations. Specific measurements were taken on some. Individual figures and panels with both abstract/geometric and lifeforms comprise the rock art which extends for several hundred feet.

Schaafsma (1972:25) describes the Quemado area petroglyphs as a mingling of both Anasazi and Mogollon styles; specifically she notes: "The petroglyphs of the district fall within the Anasazi rock art tradition for the most part. Certain figures and details occurring within these sites, however, are traceable to Mimbres origins." Her characterization of Quemado 2 includes numerous serpents with both horns and split tails, spirals, relatively awkward quadrupeds with long snouts and stiff and stumpy legs. Mountain sheep are rare. Last, anthropomorphic stick figures are more flamboyant than those found to the north. In contrast, Quemado 3 features are much more formalized, incorporating pottery and textile designs, anthropomorphs with rectilinear configurations, stylized life forms and figures which are neatly delineated with even dinting (Schaafsma 1972:25-26).

When coupled with Schaafsma's (1980:197) later comments, it would appear Quemado 3 represents an extension of her Jornada Style with a beginning date of ca. A.D. 1050. This style most probably had its origin in the Mimbres area based on comparable

Fig. 2a. A petroglyph crane at Newton site.

design analysis and consequently may be temporally placed by cross dating with ceramics.

Although it is possible that we did not locate all of the petroglyphs at the Veteado Mountain site, we made every effort to do so. In fact, the extra hours spent in the search led Doug, "back at the ranch," to become concerned about our welfare. We were rewarded beyond expectations with 12 individual or groupings of figures, one of which is not prehistoric. The complete record, as we recorded it, provides far greater variety in content than anticipated; yet the petroglyphs are not so numerous as to preclude presenting each one of them as they were encountered in our trek from south to north along Veteado Mountain's eastern talus just below the peak. Because the site may be viewed as a unit in both time and space, the petroglyphs and other noted features are herein reported.

VETEADO MOUNTAIN PETROGLYPS

The first sighting of rock art was that of a double or interlocking spiral (Figure 3). The left side is smaller than the one on the right; it is also more lightly dinted. Although spirals, including double ones, appear most commonly in the Hohokam area, they are widely distributed elsewhere as well. Steed (1980:22), for example, notes numerous occurrences at Chaco Canyon. Figure 4, a panel of several figures, includes a volute at the upper right, a lizard-like anthropomorph in the upper left, a macaw vertically placed with apparent tail feathers extending into the vegetation (lower right) and its feet being part of, or touching, the figure in the left lower corner -- a mountain sheep (deeply carved). The latter has a figure arching over its back, incorporating a number of shared lines to form what I interpret to be a composite creation of complex nature. The "Casper the Ghost-like" figure might be interpreted to be a tadpole as well. Its legs and feet are located fully behind and under the hindquarters of the sheep. Unequal lighting of these figures was unavoidable given the equipment at hand; this is particularly problematic in what could well be a centrally located indiscernible figure in the panel.

Figure 5 is a finely executed bird; scored lines indicate it was probably carved, rather than pecked or a comination of both. Figure 6 represents another panel having an essentially vertical configuration. The uppermost figure is that of a two horned stick anthropomorph under which is a rod-like element having a ticked spiral at the top and a ticked circle at its lower end. To the right is an abstract, paired line element with opposing terraced elements placed between; although now indeterminant, it would appear a circle was appended

to the top end of the right framing line. The left side of the panel features three life-forms; the upper two are quadrupeds and the lower is a six-legged, insect-like form. A geometric abstract design may be noted in the far left corner which continues beyond the drawing. This section of the panel has a noticeable crack, which has become lichen-covered.

Figure 7 is a photographic reproduction of the male anthropomorph illustrated, in reverse, in my original drawing (Figure 1). The total height of the figure is ca. 11 inches with the rectangular body measuring 7 inches. A sash or bandelier with seven pendant attachments (feathers?) and a well-pronounced penis compose body elements. Thirteen short lines attached to the head most probably represnt feathers (or hair). Eyes and an open mouth make up facial features; treatment of the right eye suggests facial painting. Three fingered hands add a lizard-like aspect to the figure; however, the feet appear more human-like. (Lichen growth extends over the left foot which I do not recall having seen in the slide of the figure taken in excess of 20 years ago.)

The central split-tailed, two horned serpent of Figure 8 appears about to devour another, simpler, snake. This panel also features a smaller serpentine figure in the center on the left side, as well as flower-like "lollipop" circles and several small nondescript areas of dinting. A well-executed, lizard-like anthropomorph in the lower right of the photograph completes the panel.

Figure 9 is an abstract composition featuring a rayed circle with upturned "U" properly positioned to represent a mouth; this is attached to a rod or stick and is appended to the left side of a bear paw-like design which, in turn has a ticked triangular element appended to its right side. Immediately below this composite figure a dinted dot appears to the left of a heavy growth of lichen. Below it, and to the left, a final circle completes the panel. Even dinting of all figures is notewowrthy.

A neatly executed lizard-like anthropomorph with four fingers on each hand, three toes on each foot and two horns on both head and tail (penis?) characterizes Figure 10. To the left of it has been added a lightly dinted "LB" during the recent period. An isolated "G.H." with 1930 below (Figure 11) is the only other example of historic additions to the prehistoric rock art at the site.

Our northward movement along the east talus next revealed the female anthropomorph I had illustrated years before (Figure 1). We had progressed 50 to 75 feet from the previously noted male anthropomorph. Figure 12, lacking an indication of a penis, was dubbed a female anthropomorph. This designation, I believe, is accurate.

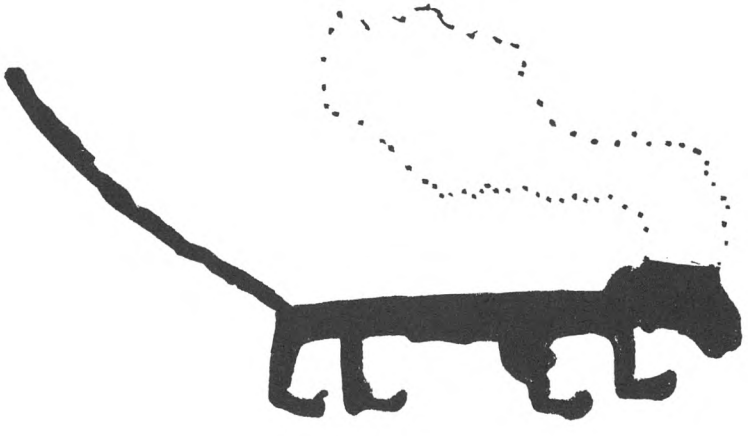

Fig. 2b. A long-tailed petroglyph quadruped at Newton site.

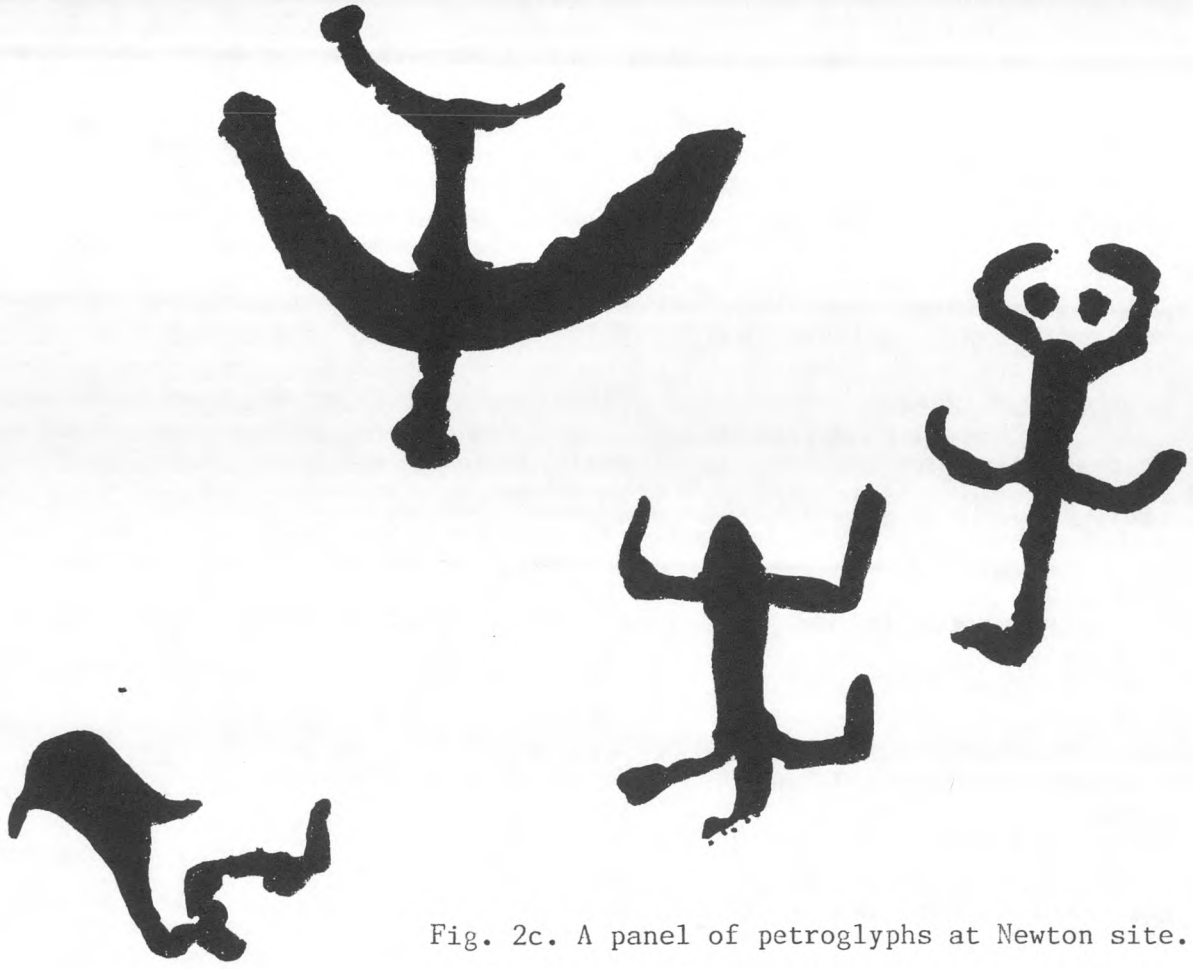

Fig. 2c. A panel of petroglyphs at Newton site.

Like the male (Figure 7), this representation is neatly dinted and carefully done. The rectangular body measures 8-1/8 inches with total height of the figure ca. 12 inches. A pyramidal face is characterized by tear-shaped eyes and mouth. The geometric design of the body is composed of a maze-like design. It features a combination of an opposing stepped or terraced pair of elements (commonly referred to as "the mountain-sky/ cloud" design), and beneath it, in part opposing, is a volute which, to me, bears close resemblance to a crooked stick prayerstick or drumstick, symbolic of long life among extant puebloan peoples. While both hands and feet bear five digits, the treatment of the fingers, particularly the middle finger of the right hand, provides a lizard-like quality -- as does the pointed look of the face.

Within 25 feet north of the above petroglyph a third anthropomorph (Figure 13), reminiscent of the previous pair was noted. It was lightly dinted, and less well executed. Stylistically, however, it may be considered to bear Mimbres affiliations, as do the former ones. The rectangular body is 6-1/2 inches high with a total height of the body ca. 10 inches. Five digits occur on both hands and feet, but the hands give the impression of having reptilian digits. As with the female, the face is pyramidal, and although somewhat indistinct, eyes and mouth are essentially tear-shaped. The body is characterized by three sets of more-or-less evenly spaced stepped elements. While I do not believe it appropriate to offer comments pertaining to artistic merit, this figure is not as aesthetically appealing as the previous pair. The hands are not in proper proportion (too large), and the extremities, in general, give a dangling quality to the composition. Although I am inclined to view this

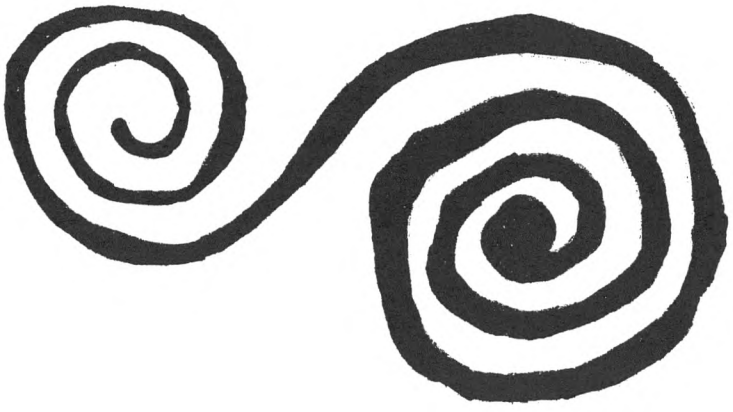

Fig. 3. Double or interlocking spiral.

figure as a male, based on placement of the lowest stepped element line in the proper penile location, this is conjectural. However, the line is somewhat exaggerated.

The last petroglyph we located (Figure 14) is within 50 feet of the previous anthropomorph. It consisted of a panel with two anthropormorphs, one above the other, and a pair of human feet to the right of the lower one. The upper anthropomorph is a stick figure with the right arm raised, and the left lowered. The latter hand bears a cane or stick, which terminates just above the foot. Below this figure is another stick-like anthropomorph; however, it has a dinted rectangular body. Unlike the featureless face of the one above, this one has eyes, vertical line nose and a smiling mouth. This mouth is, in actuality, the lower line of the face which has been more deeply pecked to produce a wide smile, or the appearance of one.

We continued walking along the talus for several hundred more feet; although there were areas suitable for additional petroglyphs, none were found. I should note, perhaps, that the petroglyph area was comprised of numerous vertical faces of basaltic rocks that jutted in and out, giving anything but a total expanse of smooth cliff face. Additionally, many fall areas were noted. Although we carefully observed the ground surface for potsherds and other cultural materials that might give an indication of shrine usage, nothing more than an occasional piece of debitage was noted. Chips of obsidian, chalcedony, yellow jasper with black "moss" flecks, and low-grade petrified wood were examined and replaced where found.

The ascent to the top of Veteado Mountain was not difficult. We selected a location which provided evidence that birds had roosted there, based on accumulated guano, though a light deposit. A few small fluffy feathers, as well as a large (though weathered) wing feather indicated use by an eagle (or eagles), probably those who had their nest on the western side of the mountain. Here, they could overlook the northeastern terrain. It affords an incredible view--probably including the Newton Site.

The summit was relatively flat and bore a distinct north-to-south orientation. Though we were met by a lovely breeze, the black gnats and other pesty insects were there in profusion. Nonetheless, we spent over 30 minutes surveying the surface for both cultural indications and eagle feathers suitable for ceremonial use at Zuni. The search for feathers was not fruitful, but two masonry structures were noted at the north end of the summit. The most northerly appeared to have been a single rectangular room perhaps 5 by 9 feet in

Fig. 4. Panel depicting several figures.

size. The second one, slightly south and east of the first was smaller and squarer in overall outline. Debitage similar to that cited previously in the petroglyph areas was noted, as were a few unworked, fist-sized pieces of low grade petrified wood. Scanty ceramics were in evidence, but none of typological significance. A rock cairn, perhaps of modern construction, occurred in the same area as the masonry rooms. A few weathered boards, as well as a few relatively recent wooden surveyor marker stakes, completed the inventory.

Our descent was on the west of Veteado Mountain. With the exception of a series of torn-out stitches in our jeans, we encountered nothing more than some sore, stretched groin muscles. Doug, as noted previously, awaited our arrival with anticipation. We announced the success of our mission and that the Newton Site excursion would <u>not</u> be part of the

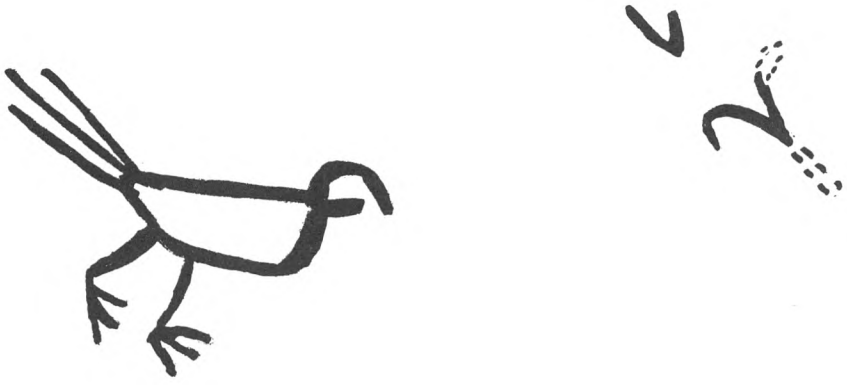

Fig. 5. A finely executed, carved bird petroglyph.

day's sojourn. Bidding him farewell, we sped off to Zuni Salt Lake.

DISCUSSION AND CONCLUSION

My initial intent was to present a factual documentation of the male and female Mimbres-style anthropomorphs thought to occur at both the Newton Site and atop Veteado Mountain with a plausible interpretation of their significance. That, however, became almost detrimental compared to the worth of Veteado Mountain and what might be said of the petroglyphic record preserved on its basaltic surfaces. I think it is important to note the way in which amassing data alters one's perceptions, particularly when one is guilty of perpetuating a near "hoax" about their geographic origin. While my initial pen-and-ink reproduction might suffice, careful checking indicates "artistic liberties" were taken, not to mention the "shift of the paper" as the original tracing progressed. Characteristically, the left side of the reproductions I made became more and more distorted. This indicates that use of a vertical surface for tracing, without affixing paper to the wall, was not conducive to accurate portrayal of what was extant. The photographic record of the rock art itself, at Veteado Mountain during our visit, was done with a conscious effort to avoid photographic distortion. In other words, a "straight on" focus was used, with little, if any, angling of the camera.

The 1985 work also illustrates several other points. First and foremost, preconceived notions can be deadly. Careful documentation so characteristic of Jim Bain's petroglyphic/pictographic work is paramount. Unquestionably, specialized knowledge and skills are necessary if our data are to be as meaningful as scientific inquiry permits. Complete familiarity with camera and equipment is essential.

It would have been beneficial if I had had access to two cameras, one loaded with color film, the other with black and white. I chose color slide film because a 36 exposure roll of Kodak Ektachrome was in the camera and because, at the outset, I was unaware of what form the present paper would take. Color film I thought, would suffice provided that proper lighting and exposure conditions were extant. I have now learned that converting these slides, excellent for illustrated lectures, to highly contrastive black and white prints suitable for publication requires a near-genius.

Second, I erred in not photographing and noting the complete design in the lower portion of Figure 6. The thought that I "might have gotten it" proved inaccurate once the slides were developed. In reference to Figure 6, it should also be noted that the separation evidenced by the crack

with lichen may have occurred subsequent to pecking the figures of this panel. In other words, it is possible that the grouping originally included this figure as an integral part of the panel. Although the significance of panels at this point in time may be difficult and often impossible to determine, there is, nonetheless, an obvious relationship of individual figures since they occur together as a distinct unit. Interpretations by future researchers should have all elements present in order to provide complete analytic data.

Last, I recall neither photographing nor noting a few innocuous petroglyphs, zigzag and perhaps a line or two having no particular interest or apparent significance at the time. I now feel this omission precludes presentation of the entire recorded sequence.

While it is currently impossible to know if specific panels, in

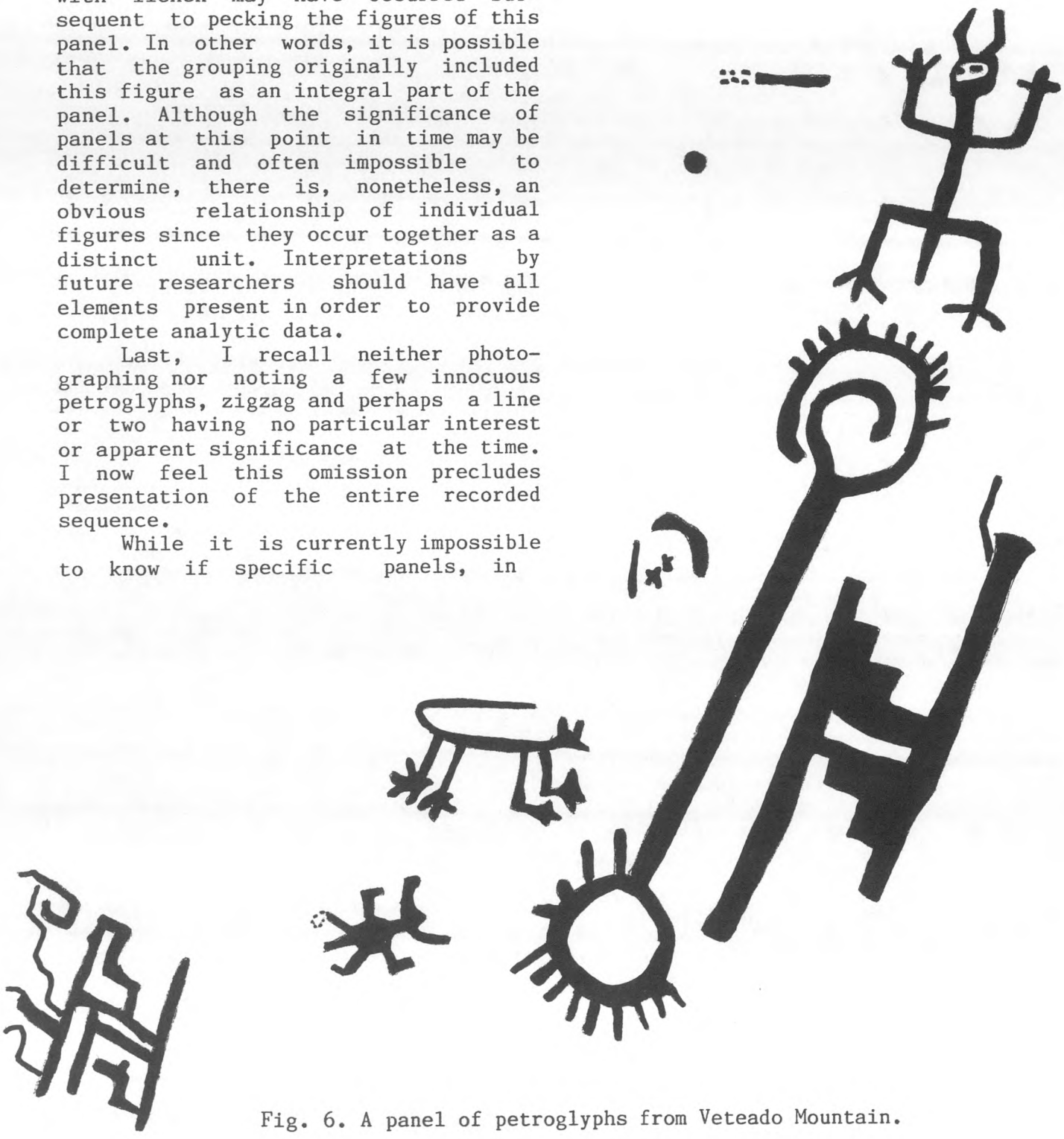

Fig. 6. A panel of petroglyphs from Veteado Mountain.

Fig. 7. Male anthropomorphs; a photo, in reverse, of drawing in Fig. 1.

contrast to individual figures, were associated with specific individuals or groups, some comments are possible. Figure 4, for example, is the most complex with macaw, mountain sheep and a conjoined figure arching over the back of the sheep -- because they touch each other, one might expect this was purposefully executed. I suggest that the individual(s) who dinted the figures could have created the figures without connecting them; however, they had reason to do so. Further, the remaining volute, lizard-like anthropomorph and the central figure are all neatly spaced. This panel, as well as all of the others, does not give the impression of "helter-skelter" placement; rather, great care has been taken to allow spacing of the individual figures. Special note might be made of the highly complex mountain sheep and "Casper the Ghost-like" figure(s) of Figure 4. Similar design treatment may be noted for the Mimbres as evidenced by Brody's (1977:86 and Figure 32) description of Mangas Black-on-white ceramics: "Life-forms were sometimes placed within design zones, and interior frames shaped around them made them effective parts of a non-representational pattern" (see also Brody 1983:100 and Colorplate 35). The specific illustration in question is that of an integrally related bird (crane) and human. Interestingly, too, this vessel incorporates a distinct maze-like quality about which more will be said shortly.

The panel shown in Figure 6 manifests a highly vertical overall configuration incorporating several elongated figures combined with a grouping of three smaller life forms. Similarly, the panel shown in Figure 8 is vertical, featuring serpents and a "lollipop-like" design, as well as a lizard-like anthropomorph. It is conceivable that the central foci represent specialized individual/

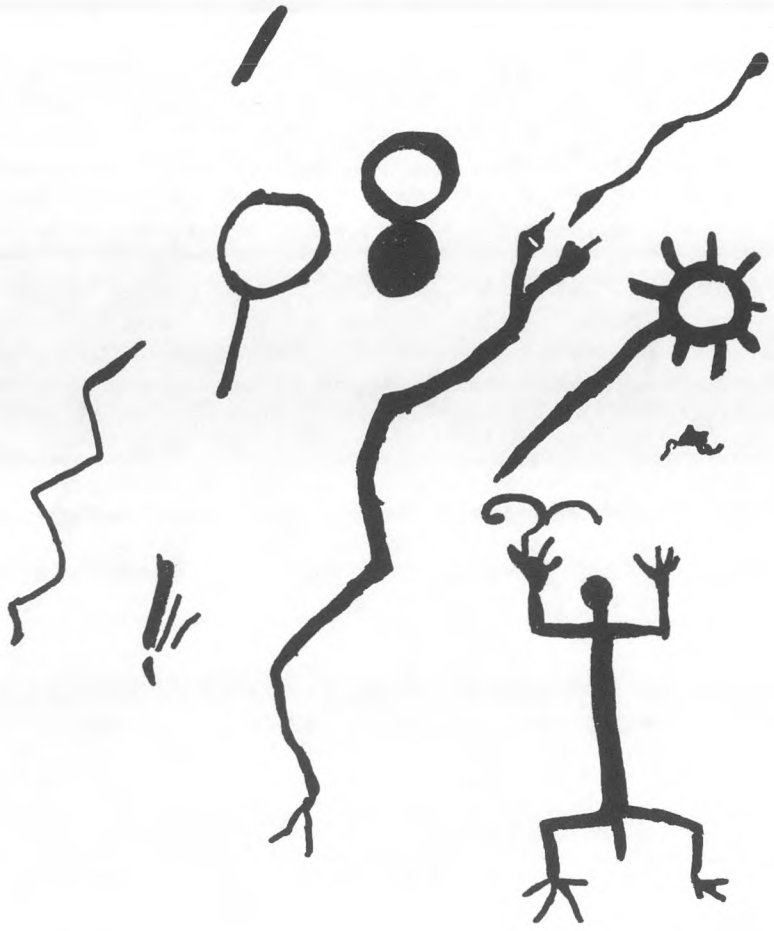

Fig. 8. Panel of petroglyphs from Veteado Mountain; note two-horned serpent.

group-specific renderings, whereas the smaller, generally bordering figures (lizard-like, insect-like and quadrupeds) had more widespread significance (i.e., to the total regional population).

Previous comment has already indicated petroglyphs were well spaced along the talus, and certainly many more rock faces were available for utilization of this art form. One might speculate that there is reason why individual vs. panel configurations alternate almost in perfect symmetry on Veteado Mountain. The rationale for all of the major anthropomorphs to appear as single entities may not be apparent at present; however, I would suggest it bears definite significance. Viewed in this or similar light considerable strength is added to the idea that the site must be viewed as an integral unit.

Based on the above, I feel it is possible to suggest that the Veteado Mountain petroglyphs be viewed in their entirety as belonging to a site which was of ceremonial significance primarily during Quemado 3. Based on Schaafsma's (1972:27) work, an ascribed date of post A.D. 1000 seems entirely appropriate for Quemado 3; however, the earlier component, Quemado 2, may be represented as well. While the petroglyphs clearly fit within the Anasazi/Mogollon traditions, the immediate area surrounding Veteado Mountain has provided indications of occupation beginning during the PaleoIndian period (Fisher, personal communication).

Since the mountain is the highest in the area, it affords an excellent lookout and could have been used for regional communicatin via smoke, light refraction or other methods. The presence of masonry structures that appear to have been of prehistoric construction, further suggested by debitage and cores as well as a few

potsherds, supports human presence of greater duration than that generally associated with shrine usage. Excavation of the structures might shed light on both use and temporality.

The elevation of Veteado Mountain also immediately suggests use as a shrine. In fact, it would be unlikely that such a location did not meet selection criteria of both Anasazi and Mogollon peoples; indeed, this is a pan-Greater Southwest (and beyond) pattern. Our current data in this regard have been increased greatly because of the numerous land and water claims by Native Americans. Certainly the rock art atop Veteado Mountain transcends meaningless figures to their carvers (peckers/dinters/inscribers). While "LB" and "G.H." left an indelible record of their presence in what was almost certainly not a relgious act, for a Native American, ascending such a peak, if he or she is traditionally oriented, is a different matter. One has entered an obviously sacred realm to which prehistoric rock art bears further testimony. A visit for ceremonial reasons becomes not infrequently synonymous with a pilgrimage with attendant prayer or other type of offering (or both). Sprinkling sacred meal is a classic example of this behavior. I might note that my comments to my Zuni comrade concerning the extent of the Zuni land claim sustaining area provided added thought pertaining to the site. Because the Datil Mountains are south of Veteado Mountain, the area is considered to have been used and quite likely occupied by ancestral Zunis.

Accepting Veteado Mountain as a shrine logically leads to questions such as: "A shrine for what purpose?" and, "To whom was it dedicated?" Perhaps excavation of the talus or summit might offer some leads, but at present the possibilities are limited only by how far one wishes to push

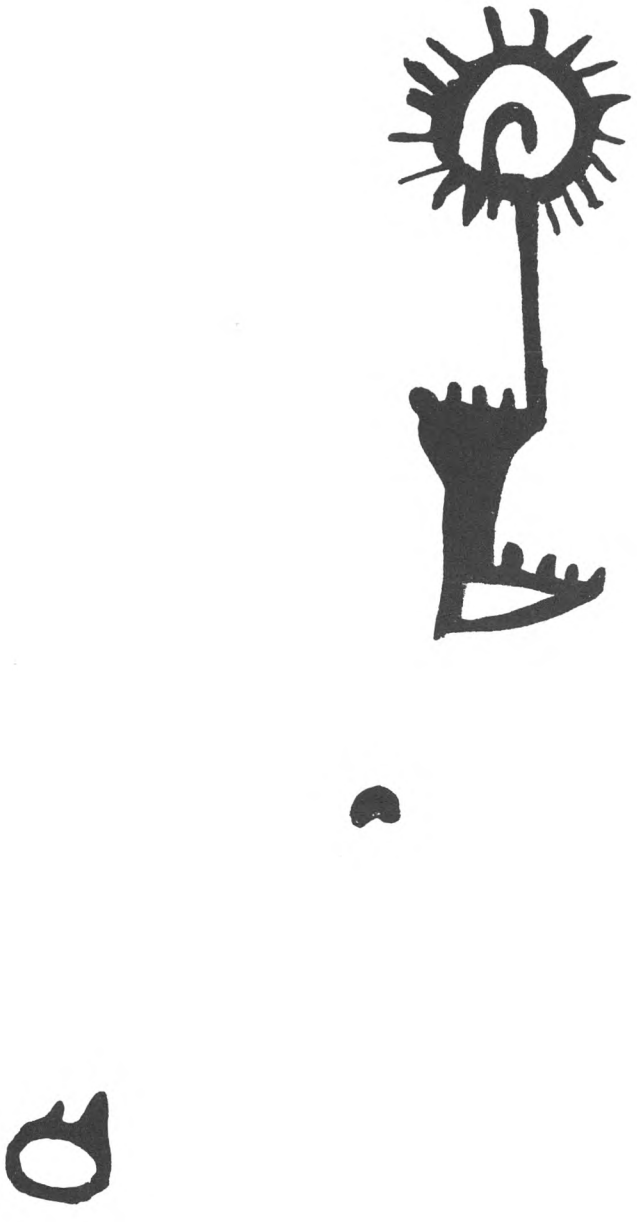

Fig. 9. An abstract composition.

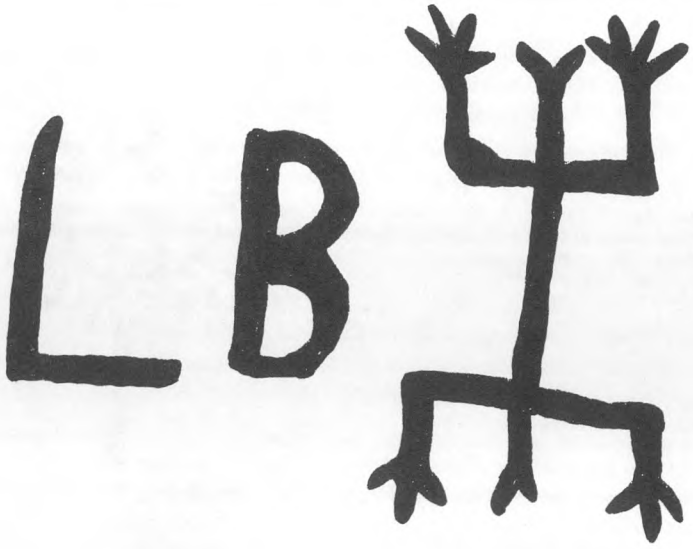

Fig. 10. Lizard-like anthropomorph and 1930 initials.

speculation. My initial thoughts focused on the occurrence of what appeared to be a matched anthropomorphic pair (male and female) of petroglyphs, possibly created by the same individual. Based on these assumptions one might suggest Sun Father and Earth or Moon Mother; however, although the figures occur at the same site, they are not side by side, and consequently, the argument is weakened. I would note, however, that the interior design of the female may take on added significance if one goes beyond mere description of the maze-like quality of the design and the opposing stepped elements (mountain/sky) coupled with curvilinear elements. I view this combination of rectilinear and curvilinear as symbolic of duality, purposefully executed. It seems to occur primarily on ceramic vessels (and other items?) having probable ceremonical use or associations. Stirrup spouted and other uncommon shaped vessels fall into this category (Frisbie 1975). However, I shall not consider the aspect of duality further herein (see Lamphere 1983).)

The other aspect worthy of mention is the overall maze-like treatment of the body. To most people the maze immediately brings to mind Pima, but more usually Papago baskets with this design. Contrary to general belief it is an old design; one, for example, was noted carved into a wall at Casa Grande ruin in Arizona. Robinson (1954:27) relates the Piman myth associated with the maze which features Elder Brother's house and the road leading to it (maze). His house is located in the mountains and is reached via an obviously devious route. According to legend he moved away when he was no longer popular with the people, but would periodically reappear as a vagabond. His retreat to his home always deluded his followers. DeWald (1979:4) provides the Papago related version. It is possible the overall theme relates to a Mesoamerican counterpart -- the legend of Quetzalcoatl. Whether the anthropomorph's body design was meant to carry a related theme is debatable; however, I strongly suggest the overall treatment carries more meaning than "an interesting design."

The most commonly occurring figure at the Veteado Mountain site is what I termed "lizard-like anthropomorh." Illustrations of similar petroglyphs and pictographs are numerous and widespread within the Southwest. They are called lizards, lizard-like anthropomorphs or anthropomorphs by various researchers. Young (1985:11-12) provides the following:

> Several Zunis identified these figures as "the way the Zunis looked at the time of the beginning" or "in the fourth under-

world," often adding "when we still had tails." A few people even launched into telling the part of their origin myth in which these creatures, "moss people," are described as having tails and webbed hands and feet.

If, as suggested earlier, Veteado Mountain is ancestral to modern Zuni because it is within the sustaining area, then their contemporary interpreations are appropriate and fitting. A second example, the spiral, may be cited as well. Young (1985:16) notes the Zunis explain spirals, particularly the more elaborate ones, as the mythic search for the "center." She (ibid.) states,

> ...the myth is recited in a ritual context at the "center" of the Zuni year: the winter solstice. In this instance, the Zuni do not use the word "center" to mean middle, but rather, in a more spritual sense to mean a beginning.

What is of particular interest to me is the fact that the fuller implication involves the sun, a frequent interpretation of spirals in rock art. Young (ibid.) continues:

> The winter solstice marks the beginning of the Zuni year, the time when the sun appears to "stand still" for four days and then "turns around" in its journey and starts back along the horizon.

The double spiral the most southerly in the series of petroglyphs atop Veteado Mountain (Figure 3), given the above, might thus represent a complete sun cycle. In this instance both summer and winter solstices might be indicated, just as they are on two different points on the horizon. Given this possibility, one might expect the more important winter solstice to be emphasized because it marks the beginning of the year. The right spiral is, in fact, larger and more heavily dinted than the left. Whereas a single spiral indicates the summer solstice at the outer edge or beginning of the spiral, the double one reflects more accurately the dual aspect of the solstices; each has a central point within its own spiral.

As indicated at the outset, this paper has taken on a completely different character than the one initially intended. Because I permitted myself to be duped by what I wanted to believe -- essentially the exceedingly rare and exciting occurrence of two pairs of near-identical complex petroglyphs, a near disaster might have manifested itself. This has proved to be a learning experience <u>par excellence</u>; the mystery was solved by discovering my recall of the geographic location of the pair was incorrect. In the process I had an opportunity to foray into rock art and to consider yet another aspect of the

Fig. 11. Only other historic addition to petroglyphs on Veteado Mountain besides initials in Fig. 10.

Fig. 12. Female anthropomorph.

Fig. 13.Anthropomorph in same style as shown in Figs. 7 and 12.

archaelogical record. The result, in fact, was more exciting than would have been the case had recall about geographic location proven true.

Whether or not the petroglyphic record atop Veteado Mountain might be further clarified through ethnographic field research remains to be seen. Clearly, the work of M. Jane Young at Zuni offers some hope. If combined with minimal excavation, the prehistoric activities at the site could well be enumerated. I believe such research might well prove fruitful.

ACKNOWLEDGEMENTS

First and foremost, I would like to thank Doug Fischer for encouraging me to visit his ranch and Veteado Mountain. This not only solved the mystery, but provided the data for this paper which he also encouraged, wholeheartedly. To my Zuni comrade, Allison Lementino, goes deep appreciation not only for accompanying me during the quest for the truth, but more significantly, for adding immeasurably to the feeling that we

Fig. 14. Pair of anthropomorphs.

were traversing sacred ground.

To Jim Bain go special thanks for providing a reason, unbeknownst to him, to solve the original mystery. Were it not for this opportunity to honor his many contributions to the study of rock art, the "curiosities" hanging on my wall would have remained precisely that -- curiosities.

Comments provided by Curt and Polly Schaafsma, J. J. Brody, Stew Peckham, Regge Wiseman and others relating to the original pair of anthropomorphs are gratefully acknowledged; suffice it to say, I apologize to each of them for erroneously suggesting a second pair existed. I accept full responsibility for this assumption and trust that the data contained herein will rectify the situation. The interpretations presented are my own, unless otherwise stated in the text.

The (projected) slide to (traced) drawing aspect of petroglyph reproduction is often a difficult task. The illustrations contained herein benefitted immeasurably from the input of my Southwestern Archaeology Class. Each line of each figure was scrutinized prior to the final stage of inking. Thus, I would like to thank Bryan Bond, Katherine K. Durbin, Janet Johnson, Jan Lowis, Stephanie Shank and Bill Wollbrinck, as well as John LeMaitre and Don Booth. Their efforts are very much appreciated.

Finally, I would like to thank the SIUE Graduate School for providing a Summer Research Fellowship which made this as well as other research possible during 1985.

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THREE PAINTED ROCK SHELTERS IN THE DRAGOONS

JANE KOLBER

James G. Bain's influence on rock art research and recordings has not been limited only to New Mexico and the areas he visited. He has inspired and trained innumerable people to carry on this work in varied regions. Without his instruction and encouragement, my work would not have been initiated.

On the rugged, boulder-strewn slopes of the Dragoon Mountains of southeastern Arizona, three pictograph sites have been located. Each is an assemblage of large boulders. Several support each other and thereby form rock shelters, on the underside of which the paintings have been placed. These chosen surfaces appear in a protected location on an elevated level above the bottomland. All are situated at an elevation between 5,100 and 5,200 feet. They occur to the north of an east-striking fault zone that divides the north from the south section of the mountain block. A mine yielding copper, lead, zinc, tungsten or placer deposits of gold is located within a mile of each site.

The Dragoon Mountains are contructed mainly of Stronghold Granite. The section north of South Pass where two of the sites are located has a very craggy, deformed terrain. To the north is the third site, which is north of Dragoon Pass where Texas Canyon appears with its intrusive jumble of exfoliated Quartz Monzonite (Callender et al. 1978:45). Vegetation in the area is composed of the Desert Shrub biotic community and includes mesquite, yucca, manzanita and bear grass. Intermittent examples of oak and cottonwood are also found. The Colorado National Forest administers the land.

Two sites are within 4 miles of each other; the other is about 10 miles to the northeast. A petroglyph site was created between these locations, north of the town of Dragoon. It consists of figures pecked into a fairly flat ground rock and is approximately 3 m. square. Stick figures, spirals, and tracks of different animals are the dominant motifs, together with a ladder-like form, an outlined cross and various indistinguishable markings. Most elements are from 5 to 25 cm. in length; a depth of approximately 1 cm. is average. Execution shows a moderate amount of care, although no detailing is evident. The setting is without distinction and would probably not have been noticed except that it is situated beside the road to a mine. Destruction appears imminent because heavy earth-moving equipment is parked alongside, and several scrapes are already in evidence. Soil has been cleared from part of the area to reveal more figures and parts have been repecked recently. These carvings, their style, and placement are a complete divergence from the painted sites.

The northernmost site is in the Little Dragoon Mountains. A large boulder has fallen diagonally against another, forming a protective area open at both ends. Record of the site was first made by Charles DiPeso, Gloria Fenner, and Mike DeZonia in 1969. At that time they collected Benson red-on-brown and Trincheras red potsherds, ground stone fragments, chipped stones, debitage, and two quartz crystals. To the west beyond a ridge, a tungsten and zinc mine is located. Directly north and below the boulder is a dry wash, which flows into a periodic stream in about 100 m.

Paintings are found on the undersurface of the balanced rock, the

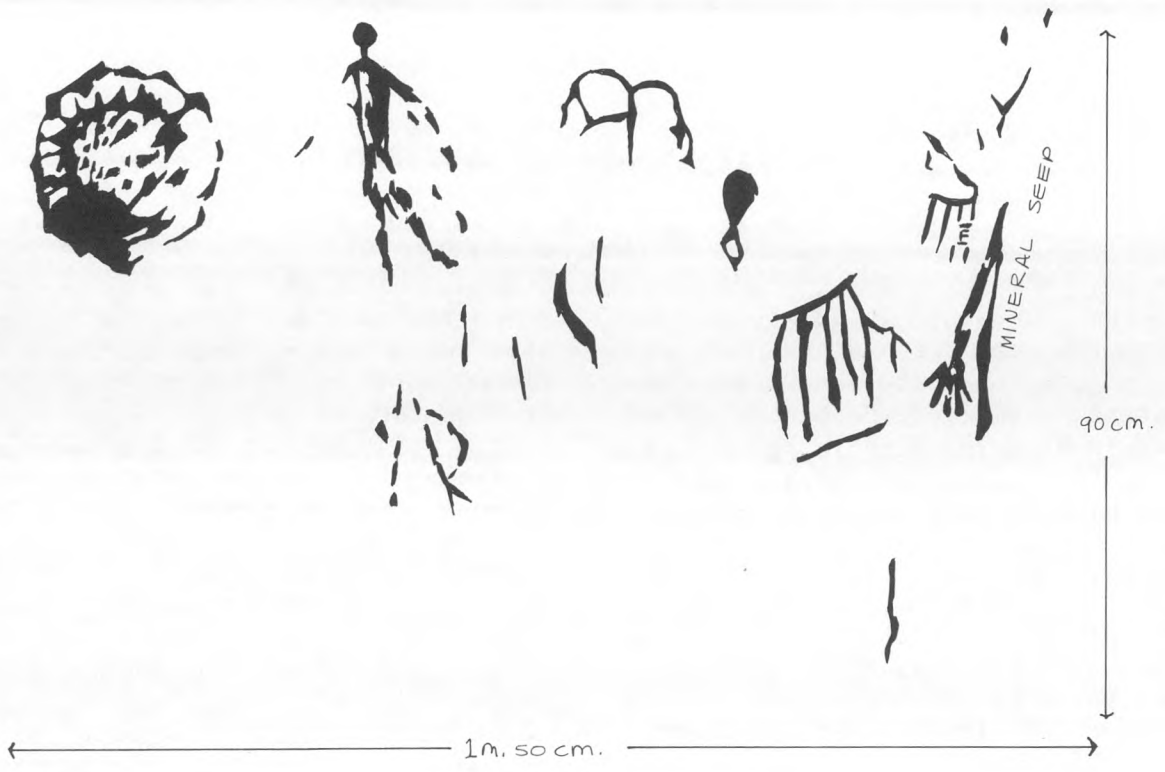

Fig. 1. Paintings in tones of red and red-orange from the Little Dragoon Mountains. Mineral Seep

shaded surfaces of the supporting rock, and in a natural indentation on an adjacent rock. There are several tones of red and red-orange, possibly because of kinds of binders and amount of pigment. Application was apparently by brush made from yucca, found locally in abundance. Subjectively, the paintings appear to have been executed with some care, while displaying little artistic talent or attention to detail.

The largest figure is possibly a human or animal, the arms, hands, legs, and feet of which have remained in good condition, whereas the body and head are, curiously, completely eliminated or perhaps never were there (Fig. 1). There are three other similar figures; two are phallic and all have assorted numbers of phalanges. A more realistic human-like form was difficult to decipher because of flaking. Two human-like arms and hands occur, one on each wall. One was possibly part of a full figure that has been obliterated by mineral seepage from above (Fig. 2). A circular form is the most dominant. Flaking has obscured it, but it possibly included several enclosed rings that were decorated with serrations. Three rake-like forms with long prongs, an hourglass, two other forms connecting two shapes, a zigzag, an arch of dots, and a row of evenly spaced, similar sized dots ascending up the balanced rock and gradually fading out are all that can be descriptively defined. There are many other markings which are mostly linear. Due to exfoliation, these lines and spots were perhaps originally parts of representative figures, but are currently indecipherable. Natural deterioration is obscuring much of the art at this site.

Cupules are found on a rock wedged underneath the paintings and protected by the balanced rock. Some seem to contain paint traces. Metates

Fig. 2. Paintings in tones of red and red-orange from the Little Dragoon Mountains. 10 Dots Up Ceiling, Same Size, Evenly Spaced

are on the floor. Mortar holes are placed in boulders about 6 to 8 m. both to the east and the west of the shelter. Beneath and within the supporting rock is a cave shelter approximately 8 by 5 m. and 1 1/2 m. high. Within a 10 mile radius there are several ruins of pithouses and cremation sites.

About 10 miles to the southeast are three rock shelters that contain paintings. They are positioned along the south side of a wash into a canyon on the east side of the main Dragoon Mountains. Huge granite boulders have scattered over the slope. Paintings occur in a shelter that is about one third of the way up the mountainside. The shelter was formed by a balanced rock diagonally crossing a supporting one, similar in construction to the Little Dragoon site. Red, black, grey, and white forms appear on the underside of the balanced rock and consist of four vertical, parallel squiggly lines, four concentric circles, a curve, an oval, a four-pronged rake figure superimposed over a smudge, two arrows, a circle with three curvilinear rays and a double vertical zigzag (Fig. 3).

About 8 m. below and to the east is a small cave on the north wall of which a complicated pattern of opposing sets of parallel, zigzag lines is painted in red, with a small amount of black (Fig. 4). Below is another cave that has parallel zigzags and rake designs painted on its south wall and ceiling. The small cave paintings are best preserved because they are more protected from the inclement weather. There are no representative figures in this area, and linear abstract forms predominate. Some modern scratches have been produced over the old forms. White was inserted between the red concentric circles at a later date. Evidence of historic or prehistoric habitation in the immediate area is lacking. On the summit between

Fig. 3. Paintings from a rock shelter in the East Dragoons, 10 miles southeast from site shown in Fig. 1.

this and the west side is a mine.

Four miles east on the western side of the Dragoons is the most varied site. A large boulder field rests on top of a long, low talus spur, which affords an expansive view of the area. Two panels of paintings appear on the south and west vertical faces of a boulder that fronts the entrance to a three-chambered, interconnecting rock shelter. The rough, cracked granite has heavy, white patination staining several portions, and spalling has broken off much of the surface. Yellow-orange, orange, and red were used to create the pictographs. Panel one contains one six, one four and one two appendaged figures, each with a head. There are zigzags, attached rectangles, a rayed solid form, concentric circles, linear designs, a sawtooth and a rayed head, human-like figure (Fig. 5). Panel two has a human-like figure, abstract forms, eleven zigzags, and three stick figures (Fig. 6). A single linear form was found 100 m. east of the main site area, under a large isolated boulder on the ceiling of an animal den with a water cache. Seven mortar holes are located near the rooms. Metates cover the top of a nearby boulder, which is shaded by another. The ruin of an historic building is situated within one-half mile. In 1978, Norman M. Wahlen (for the Arizona State Museum) dug a test pit that yielded plain potsherds, stone flakes and radiocarbon dates 210 B.P., 340 B.P., and 870 B.P.

As these dates indicate, it is most difficult to uncover the origins of the artists of these paintings. Although evidence of the early man Cochise culture has been established in this region, the likelihood of their paintings enduring in such exposed areas is negative. The Hohokam and Mogollon-Mimbres Indians resided in villages north of and between the Little Dragoons and the main Dragoons.

Fig. 4. Zigzag lines in red in a cave near the shelter shown in Fig. 3, East Dragoons.

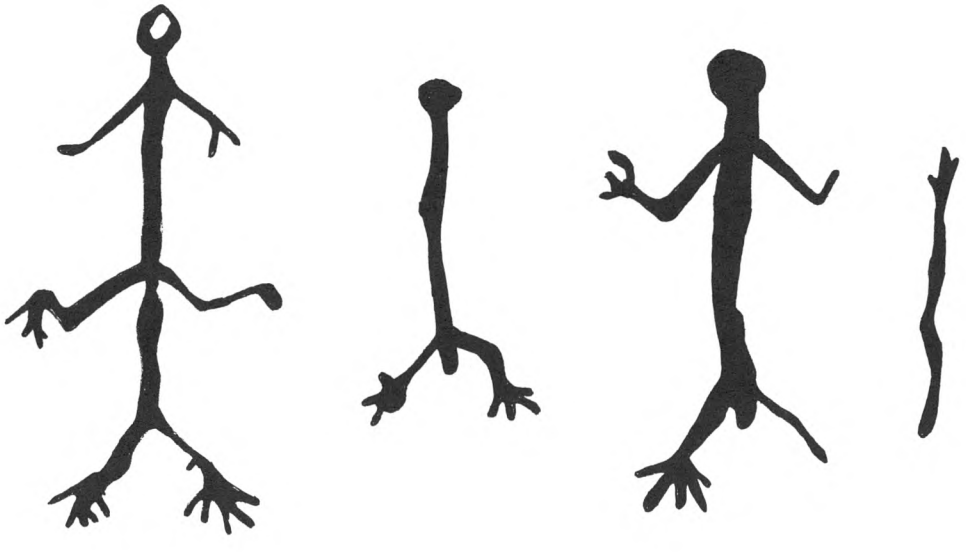

Fig. 5. Panel 1 on a boulder face, West Dragoons.

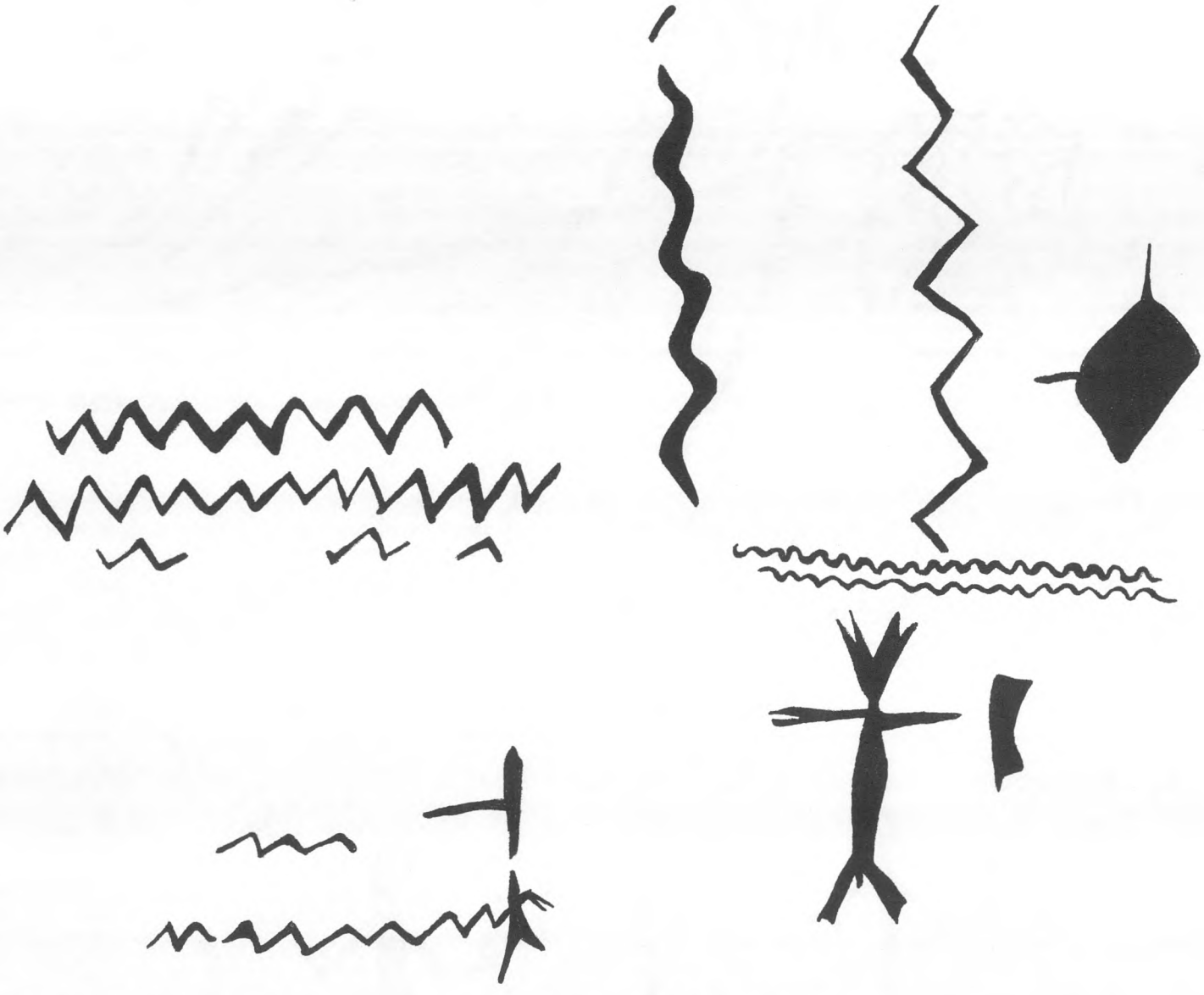

Fig. 6. Part of Panel 2, pictographs in same location as Fig. 5.

To the south and east Hohokam habitation sites have been excavated. To the east, the Sobaipuri lived. The pottery found at the Little Dragoon site had red paint, which was the predominant wall paint color. The linear patterns are not dissimilar to some Hohokam pottery designs (Haury 1976: 211) (Wormington 1969: 133, 138), nor are they unlike some Apache basket designs (Tanner, 1982: 56). The petroglyph site bears even more resemblance to Hohokam pottery and is definitely distinctive from the pictograph sites. Local tradition attributes the region to have been a hiding place for Cochise and his band of Apaches. The Chiricahua Apaches, who inhabited southeastern Arizona until 100 years ago, built no permanent structures and did not manufacture pottery, precluding the finding of any remains. The subject matter gives no clues as to its origin. Zigzags are most prevalent. Stick figues and circular designs are also frequent. Peculiar are the long raked forms, the six appendaged figures, and the two human-like form with no bodies. Two sites in the vicinity, which Schaafsma claims are Apache, bear no resemblance (1980: 337). An hourglass is the only related form to Schaafsma's list of common Apache subjects (1980: 335).

Similarity of subjects, styles, choice of setting and placement indicates that a related people created the paintings on the rocks of the Dragoon Mountains. Archaeological and historical evidence found in the area could lead toward the determination that either of two distinctive groups executed the paintings. Lack of definitive information denies the ability to assert who their creators were until further knowledge can be obtained. At all three of these very isolated sites, campfires and smoke stains are visible. Their vulnerability may preclude any further investigation.

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TWO FEET ON ONE HIND LEG: AMBIGUITY IN SOME PREHISTORIC PICTURES

JOHN CLEGG

Jim Bain is one of the world's great recorders of prehistoric pictures. I wanted to produce a recording for him, but I ran into technical problems at the last minute (I tremble to admit that I have mislaid the originals). Instead, I am writing this paper on how careful recording can lead to new ideas about whole aspects of prehistoric pictures, aspects which have previously escaped consideration.

BACKGROUND:THE AREA AND THE PICTURES

The white invasion of Australia began in 1788, when the First Fleet landed in Sydney Cove. Great Britain needed somewhere to send her convicts, because the American Colonies were becoming unsuitable for the purpose. Sydney Cove is part of one of the world's great natural harbours. It is a drowned river valley cut into Tertiary sandstones, themsleves deposited as the delta of a large river system. The Sydney Basin extends for 50 miles or so around the present city, and consists of a dissected plateau of Sydney sandstone, ranging to 600 ft. or so around the edges, and only about 200 ft. in the center of the basin. The climate is mediterranean, marked by great variation and unreliability. The native plants and animals are adapted to fire. The sandy soils are not rich, but the area was well provided with both animal and vegetable foods. Especially in areas near the coast, where marine and terrestrial resources were both available, there was plenty of food for a substantial population.

Sydney sandstone is typically honey-coloured and fairly durable, but soft enough to work. Throughout the last century it was the preferred building material for institutional architecture. It occurs as outcrops over most of the Sydney Basin on valley sides and the tops of ridges. Horizontal areas of several hectares are common. Many of them have petroglyphs. In Australia we use the term 'engraving' for petroglyph, and drawing, stencil, or painting for pictograph. There are many pictographs in the Sydney area, but this paper is about some of the engravings.

More than two hundred sites, each of which contains a score or so of figures, are known from the Sydney area. There are many more smaller sites, and the total number of known engraved figures is in the thousands. Most of the engraved figures look like simple, life-sized outline drawings of people, animals, and tracks. The outline is formed by a shallow groove, up to half an inch deep, and perhaps several inches wide. Individual pits are often found within a groove, and it is thought that grooves were made by drilling holes, which were later joined by abrasion. I have been able to make satisfactory grooves in sandstone using a drill of bone, shell, hard or soft stone, or even hard wood. Wet sandstone works faster than dry. I was able to produce a groove at the rate of between 2.5 and 2.25 metres per hour (say 8 - 10 ft. of groove per hour), which can be used to guess how much effort had to go into the making of engravings (Clegg 1979:42-43). The engravings are rapidly eroding through both natural and unnatural causes. Many are very difficult to see and record. A very low light (preferably a controllable artificial light, used at night, though sunlight, controlled with shades and mirrors can be used) is necessary to see the engravings

well enough to record them.

Very little is known about the cultural contexts of the making or use of the engravings. What information there is suggests that they were made by dreamtime characters at locations which had religious meaning and were used by people and mythic beings for ritual and educational activities (Berndt 1974:27 -31).

Sometime after the the engravings were made, the metropolis of Sydney was built. Some engravings are comparatively safe in national parks; others are underneath houses and roads. Many are known to have been destroyed. I shall be referring to figures from two sites: Devil's Rock in Murramurra National Park and Fishman, beneath several suburban houses and their gardens.

Several theories were produced about Australian prehistoric pictures during the 19th century. The erroneous idea that so-called "advanced" activities like picture-making could not be indulged in by so-called "primitives" like Aborigines, did not fit with pictures which the Europeans recognized as Art. Such pictures were found, and their discovery (in the Kimberley particularly) led to the romantic notion that the continent had been visited by people of higher cultures who made the advanced pictures. At least one author (Sir Charles Nicholson, Bart.) denied the Aborigines of the Sydney area the authorship of their engravings and implied the possibility that present Aboriginals were degenerate descendents of some more advanced ancestors (Nicholson 1880:34).

The work of recording the Sydney engravings was first done professionally at the turn of the century (1884-1899) by R.H. Mathews, and W.D. Campbell, two surveyors who made good use of their professional expertise and opportunities to conduct scientific observations of the engravings. Campbell made the best recordings, but clouded his observations with interpretation. Mathews avoided interpretation altogether. He worked in many parts of Australia and published widely (95 different papers in a decade) on many Aboriginal subjects. His attitude was one of careful observation. His motivation in doing the work seems purely scientific; primarily for its intrinsic interest, which he wished to share and pass on to others. Mathews was open to many explanations of Aboriginal prehistoric pictures.

Various conjectures have been made as to the meaning of these drawings, some of which are rather wild and far-fetched. In the present paper I shall abstain from all such theorising, which at this stage of the enquiry would necessarily be premature. I may, however, suggest that perhaps some of these pictures are idiographic expressions of events in the history of the tribe: certain groupings of figures may portray some well known legend: many of the animals probably represent totems: some of the drawings were, perhaps, as Mr. Angas states, sacred to the Koradjee, or conjurors: but it is likely that a large number of them were executed for pastime and amusement. Thorough and systematic collection of data respecting this part of the subject can alone give a reliable groundwork for generalisations (Mathews 1895c: 58).

From his wide knowledge of ethnography, Mathews formed the opinion that individual pictures are individual totems, or so he said in a paper read to the Royal Society of Victoria on 12 July 1894.

Most, if not all, of the animals painted or carved upon rocks may have been intended to represent the totems

of the different divisions of the classes of forming the community. It is well known that the Australian tribes were divided into classes, which were again divided into groups bearing the names of animals, as kangaroos, opossum, iguana, emu, black snake, codfish, etc. The figures of animals and other objects, as well as groups of hands, may also have had some symbolical meaning in connection with the myths and superstitions of the Australian aborigines, or were drawn with the idea of conveying some kind of knowledge. These points require further investigation before any conclusion of a definite character can be arrived at (R.H. Mathews 1895b:143-4).

Most of the figures of animals were probably intended to represent the totems of the different families; but it seems reasonable to suppose that some of the drawings and nondescript devices are the result of idle caprice. The production of some of the larger groups -- both of carvings and paintings -- has been the work of immense labour, and it is unlikely that the natives would have taken so much trouble for mere amusement (R.H. Mathews 1897b:467).

The other licensed surveyor who published work about prehistoric pictures in the Sydney area at the turn of the century was W.D. Campbell. His motivation was primarily preservation; the pictures were in danger from natural erosion and development; they should be recorded before it was too late. In 1896 the government employed him for 6 months to extend private work he had done from 1893-1896 to the rest of the Sydney area (Campbell 1899:1,2). The work was duly published as a Memoir of the Geological Survey of New South Wales.

The acknowledged authority on the engravings of the Sydney area in F.D. McCarthy. He was ethnographer at the Australian Museum for many years, and, as the first professional to study the engravings in detail, he had much more knowledge and experience than had either Mathews or Campbell (though he lacked Mathews' opportunity for first-hand observation of ritual in south-east Australia). In the four decades between the work of Mathews and McCarthy, the methods used to identify the subjects of pictures did not change. The main criterion is "what does the picture resemble" with subsidiary confirming questions like "what pictures like this are known from Aboriginal work in the Sydney area, and what do they represent" and "what do we know from documented ethnography and material culture which can shed light on the subject?" The answers to these questions summarise the meagre information available from ethnographic and documentary sources. The method contains a set of circular arguments; each identified picture becomes information for the identification of further pictures. One person's opinion is a self-fulfilling prediction. Should that opinion be wrong, the only way of discovering the error would be through discussion with some other person who holds a different opinion; both may be wrong.

There is always a need for apologists, interpreters, or critics to help us to appreciate pictures. Some of the best of that sort of interpretation is done by poets, like the late David Campbell, who wrote poems about the Sydney engravings. One person may write sometimes as an interpreter or apologist, and at other times as an academic or scientist. The scientist should not be blamed for the sins of the apologist, nor vice versa. Unfortunately, it is not always possible to tell whether any particular work is designed to be apology or science, so it's not easy to be fair

at all times to all authors.

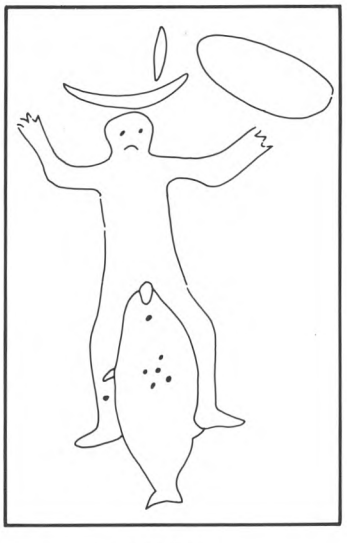
FISHMAN

The site I call Fishman was recorded by Mathews and Campbell. Mathews published individual figures in several different journals; Campbell shows the whole site as a unity. In 1974 a group of people working under Anne Ross traced accessible figures as a student and management exercise designed to investigate how many of the figures recorded by Campbell survive. This paper is concerned with only one of the many figures at the site. I will deal with the descriptions, recordings and comments on it in order of publication. It was published by Mathews (1895c:67-70, Fig. 10) [see Fig. 1 below] and Campbell (1899:26, plate 11) [see Fig. 2, below], and described by McCarthy (1984:443,444) from previous records. David Campbell wrote two poems about it (David Campbell 1978:15).

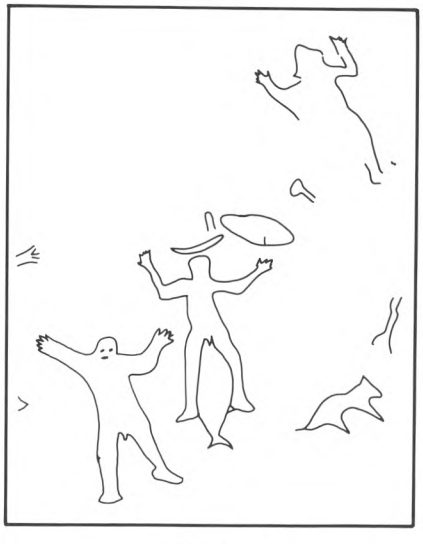
The recorders had different interpretations as well as different attitudes to the engravings. Campbell presented the figures from one site in their correct relative positions on one plate, and ventured an interpretation of the site as a whole. Mathews mentions 45 (of the 65 engravings counted by McCarthy (1983: 444) which he figures in half a dozen different papers. Here is Mathews' description of the Fishman figure:

> This carving represents a native, 5 ft. 5 in. high, holding up his hands, and having close to him a boomerang, shield, tomahawk, and an object 10 in. long which I am unable to identify. The space between the legs has been utilised to form the outline of a fish about 4 ft. long. This is done by continuing the lines forming the inner side of each leg downwards for about 15 in., and connecting them in such a manner as to indicate the tail of a fish. Two fins, one on each side, and an eye, were then added, as well as five dots which were probably intended to represent the gills (1895e: 67-70).

Mathews' and Campbell's recordings of each individual figure differ in de-



FISHMAN
Figure 1: Mathews' recording
4 feet to the inch



FISHMAN
Figure 2: Campbell's recording
8 feet to the inch

tail, but no differences in the graphic recording seem particularly significant. The written descriptions are very different. Here is Campbell's:

> The second man represents a curious combination of a man and a fish, the latter having been formed by extending the inside lines of the legs so as to form the posterior portion of a fish; this is possibly done to economise the labour of cutting the lines (Campbell 1899: 26).

Almost a century later, F.D. McCarthy provides even more detailed and confident descriptions and diagnoses.

> Man (10, next to 9) 5'6" tall, convex topped head with straight sides, no eyes, neck suggested, right arm bent steeply upward at pointed elbow, left arm bent upward at 45' at rounded elbow, 5 pointed fingers on each hand, short body widening from armpits to hips, legs curved outward but not very wide apart, feet outward, left foot flat and pointed, right foot convex and conical, pointed penis.
>
> Fish (11, sharing its outline with 10) between the legs of the man (10), using his penis for its mouth, and the inside outlines of its legs for 3/4 of its body, it has no eyes and a good tail and 1 fin is added by a short bar from its back to the man's left foot (McCarthy 1983:438).

He comments on the work of his predecessors:-

> ... - the set could also represent a hunting or fishing party comprising 2 women and 2 men, and the placing of the large fish between the legs of the man could be a real life incident in which a man got tangled up with a fish between his legs in the water, or it could represent a mythological incident;... (McCarthy 1983:444).

The Fishman site seems to fit well with the general model of Australian Aboriginal religion, in which engravings are probably the expressions or results of ritual, myth, and totemism, but there is precious little evidence or agreement on questions of precise interpretation, and there are any number of conflicting or compatible interpretations of some figures. I, for instance see the fishman figures as a visual pun. The compatible and various interpretations now add up to a real-life incident in which a fisherman became entangled with a fish which became a story incorporated into a myth. The picture was made as it was in order to save effort, and to create a visual pun.

The site has been developed, and has suffered accordingly. David Campbell wrote the following poems about it:-

> FISHMAN
> An artist pecked out a man, and maybe smiled
> As he added a tail to the heels.
> The warrior stands with a fish between thighs--
> Perhaps the first pun. The phallus serves for jaws.
>
> SUBURBIA
> They built a bungalow beside the man
> Of brick veneer. The trench
> For the septic tank cut off the tail of the fish.
> A Picasso may yet be used to bung a wall.
>
> (David Campbell 1978: 15)

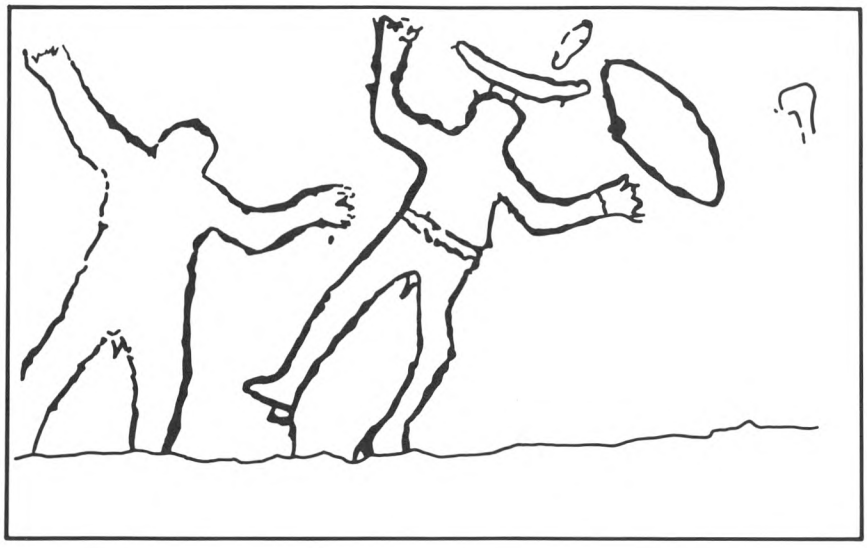


Fig. 3. Fishman recorded in 1973.

The groove which defines the fish, like the groove which defines the man, is clear and deep. There is no doubt that it is intentional, and no doubt that it is of aboriginal origin. As the 1974 recording shows, Fig. 3, most of the fish's tail has been destroyed in cutting a trench for a sewer pipe. Europeans have added a belt and buckle, making the figure appear clothed. I have heard a local comment that Aboriginals did not have buckled belts, yet this is an aboriginal engraving, so it must record an extraterrestrial visitation during precontact times.

The Fishman figure was of interest to the authors I have mentioned. They thrashed about more and less credibly looking for explanations- but the various guesses do not seem to be serious; the picture is an object of amused speculation rather than scientific study. Two explanations come to mind: the figure is unique, so there is no apparent body of comparable data; and the relevant data, dealing with deliberate ambiguity in pictures (and/or puns) is, with one or two exceptions (Megaw 1967:395), not generally known to students of prehistoric pictures.

Artists are often interested in ambiguity, and ambiguous pictures crop up quite often over the centuries, including the Melanesian carvings and Iron Age jewellery mentioned by Megaw, Flemish Rennaissance paintings of faces made of vegetables, and Dada and Surrealist examples this century. Salvador Dali used ambiguity in several works, for instance "The Slave Market with Disappearing Bust of Voltaire," 1940 (Hunt 1982:20).

Ambiguity is basic to all representation. A painting can be at once both blobs of colour on canvas, and a landscape. Picasso once made a sculpture of a bulls' head from a bicycle saddle and handlebars. French palaeolithic art is full of examples in which natural features have been turned into pictures of things.

In this century, scientific psychologists have taken an interest in two particular types of visual ambiguity; illusions and figure-ground. Artists and scientists have become aware of some of the art-oriented work. (See, for instance, Arnheim, 1974; Gombrich 1960; Gregory 1966; Teuber 1974).

Some figure-ground ambiguities depend on the fact that a line can represent and be seen as the edge of an object. Without further information, one cannot tell which side of the line is figure, and which side is ground. Human perceptual apparatus offers both alternatives alternately in so-called self-reversing figures: it is quite easy to see the fish, or to see the man, but very difficult to

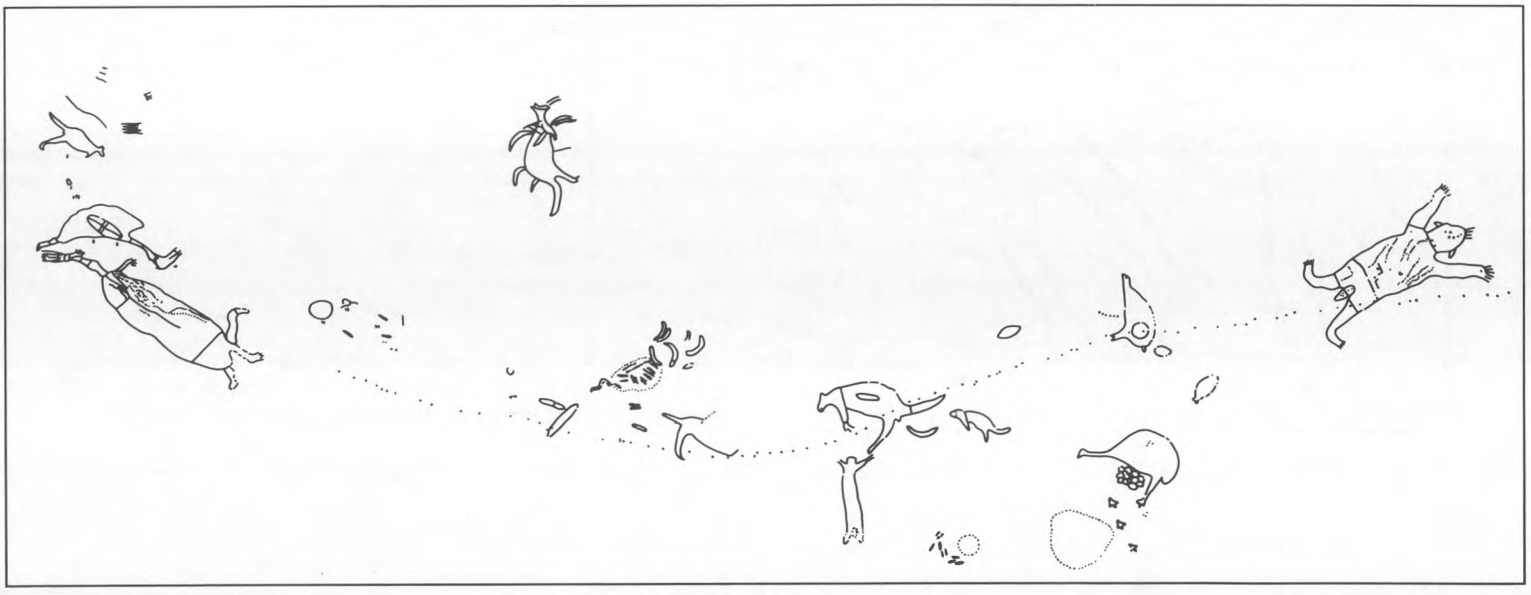


Fig. 4. McCarthy's record of Devil's Rock.

see them both together as a representation of a fish with a man's penis in its mouth.

I have seen somewhere a reproduction of a mediaeval representation of the Christian Trinity as Father, Son, and Holy Ghost all in one head. The one head had two eyes shared by a full face flanked by two profiles. As I recall it, the picture was not perfectly successful, but the attempt to use pictorial ambiguity in order to express the mystery of one being at the same time three, is very clear.

Perhaps the Fishman figure had some deliberate meaning, and is not merely a playful pun (or any of the other possibilities mooted above). In accepting this idea, one automatically asks whether ambiguity is a common feature of Sydney rock engravings. The answer is No, so far as we know at the moment. But another source of information appeared in August 1985 when Devil's Rock, which is perhaps the best-known Sydney rock engraving site, was being recorded for the first time since McCarthy's professional work of 1943.

DEVIL'S ROCK

Devil's Rock was known through the 19th century, or so Walton claimed (1932) and its graffiti of a sailing ship, man in a top hat, and girl in a crinoline confirm this. Figures from the site were published by Mathews (1895e, 1896a). McCarthy published the whole site in 1959 [Fig. 4] and a revised description in 1983. There is a proposal to incorporate the engravings in a museum, planned for Australia's bicentennial in 1988. Jo McDonald took the contract to record the site and worked on the recording using night-recording techniques in August 1985, where I visited her. On that occasion, she pointed out the shape of the foot of one of the

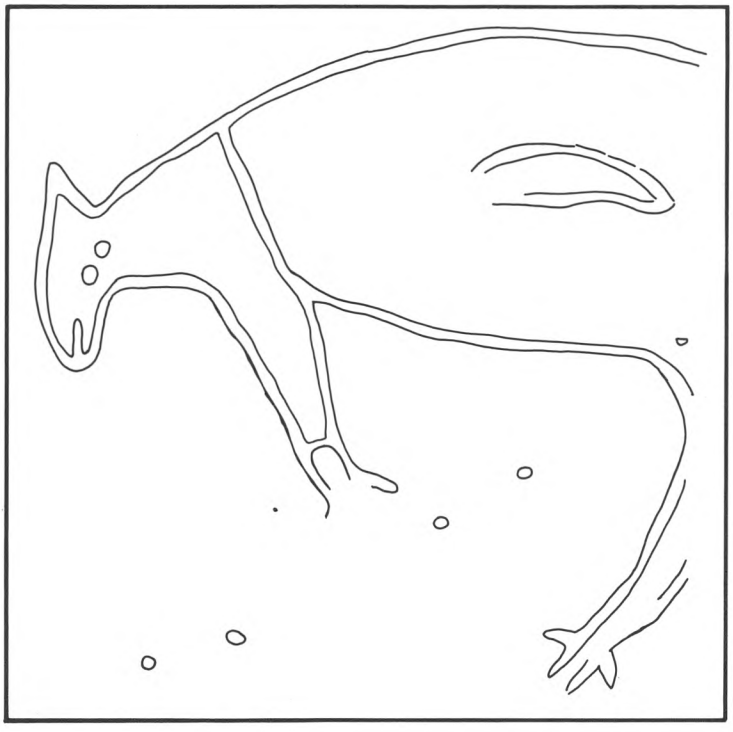


Fig. 5. Jo McDonald's tracing of kangaroo at Devil's Rock, 11 ft nose to tail.

engraved kangaroos (See Fig. 5, McDonald's tracing, reproduced with permission)(McDonald 1986: Part II, Volume II).

This figure appears to have two feet on the one leg. Kangaroo hind feet [Fig. 6: diagrams of Kangaroo tracks] have one long toe, and a smaller toe on the outer side of the foot. Two further tiny toes, on the inside of the foot, used for grooming, are so small that they often escape notice. They are almost never shown in pictures. The lines (grooves) which are interpreted as the sides of the kangaroo's hind leg each have a branch line on the outside of the leg, some six inches from the end. Where the hind leg joins the body, it is shown in outline, with grooves demarcating its two sides. At the foot end, the two legs and feet are shown as parts of a stick-figure.

The feet on the hind leg of this kangaroo had not been observed before McDonald's discovery and are not shown on either Mathews' or McCarthy's recording [Figs. 7 and 8].

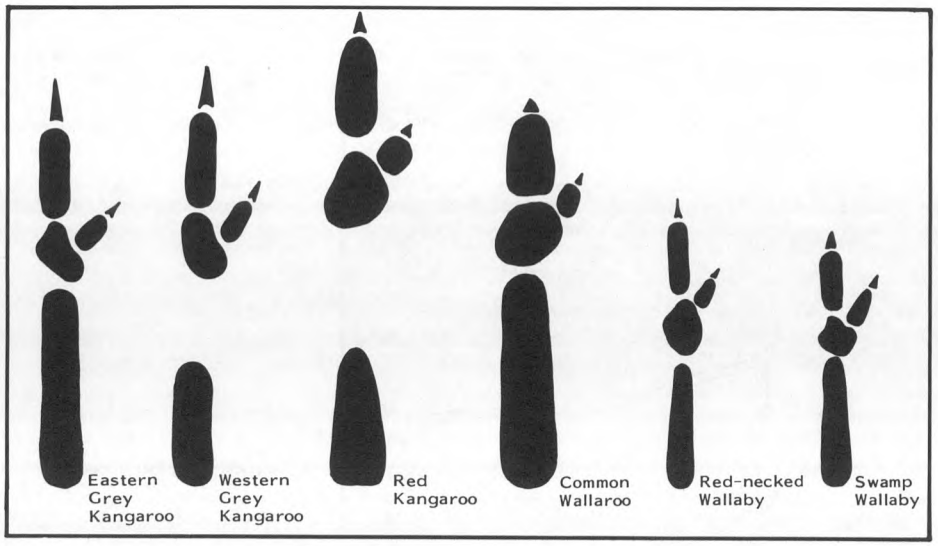


Fig. 6. Macropod tracks, from Triggs, 1984.

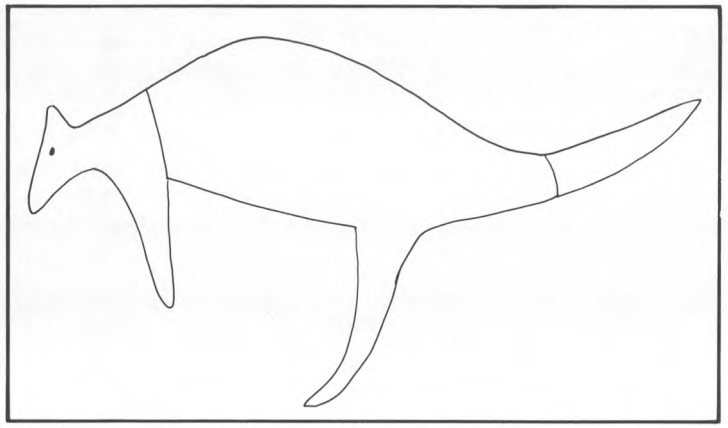


Fig. 7. The Devil's Rock kangaroo recorded by Mathews, 4 ft : 1 in.

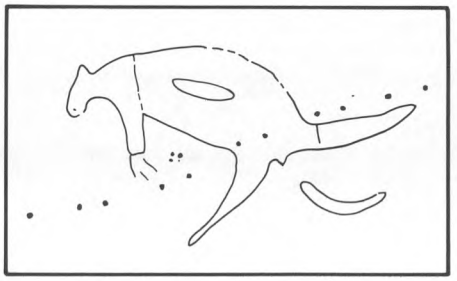


Fig. 8. The Devil's Rock kangaroo recorded by McCarthy, 8 ft : 1 in.

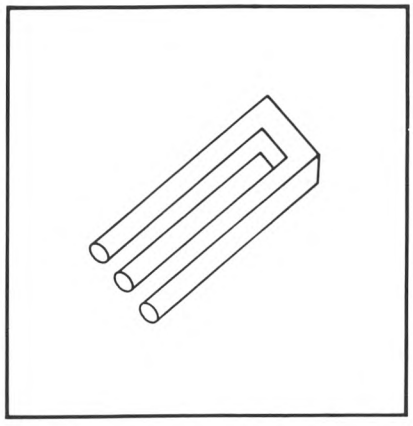


Fig. 9. Devil's tuning fork.

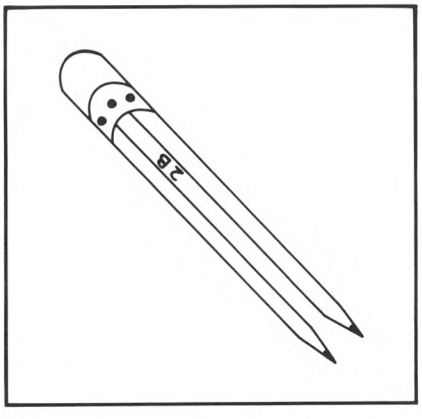


Fig. 10. Devil's pencil.

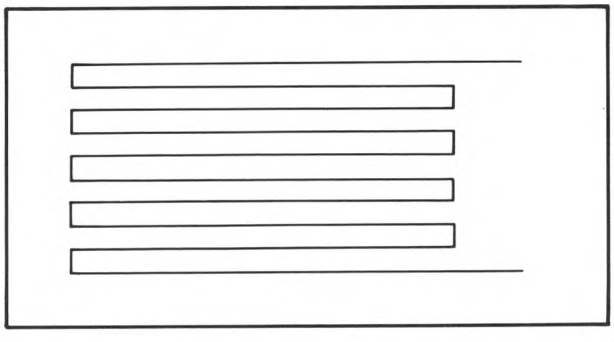


Fig. 11. Drawings of hands (or snake) seen in the heater element on the rear windshield of a car.

The Kangaroo leg seems like the psychologists' ambiguous figures, Devil's Tuning Fork, which has three tips to two tines, and Devil's Pencil, which has two points but only one eraser [Figs. 9 and 10]. Both of those well-known figures are ambiguous because the lines are read as edges, and the picture contains contradictory information about which side of the line is object and which is background. I noticed a simpler example of the same phenomenon on the rear windscreen of a car the other day [Fig. 11]. The windscreen had one of these demisting heaters which are thin foil printed circuits, in a long winding pattern, stuck onto the windscreen. It seemed that the circuit could represent the five fingers of two hands, the fingers of one being the space between the fingers of the other. As I draw the figure I realise that the left-pointing hand has five fingers, the right-pointing one has only four. The windscreen hands are triply ambiguous (triguous?), for beside reading as the two opposing hands, the element reads satisfactorily as a snake - a long bent line. This draws our attention to a second source of ambiguity: lines need not be edges: they can be entities (snakes, wires, or sticks) in their own right. It is the ambiguity between lines-as-edges and lines-as-sticks which the kangaroo leg exploits.

If the newly found figure is ambiguous, clearly we want to know whether the ambiguity is intentional, as a step toward asking whether it might be meaningful. Two questions appear: what about the feet of other figures at the site? and, are there any simpler (if duller) explanations which could account for the way the feet are shown?

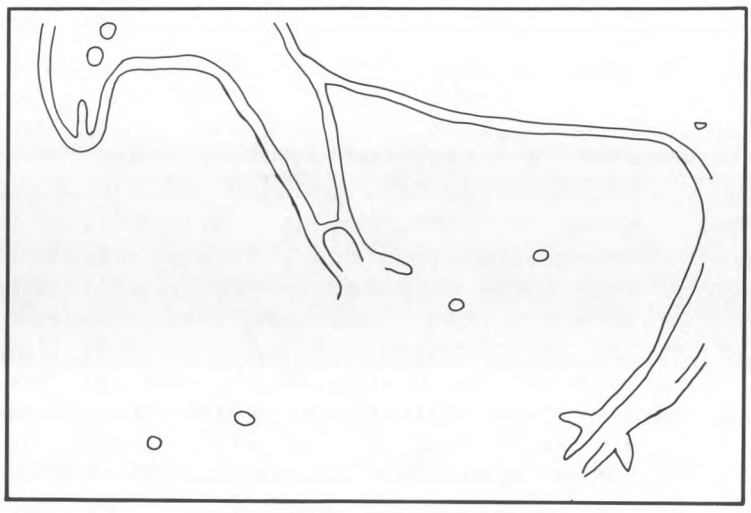


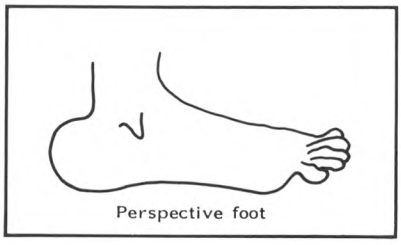
Fig. 12. Detail of Fig. 5.

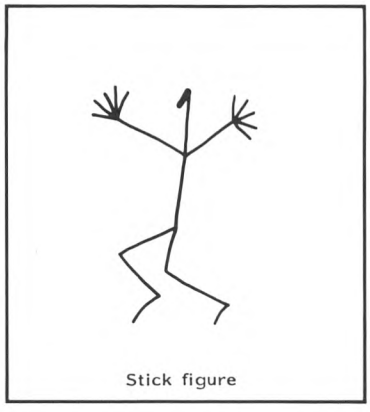
(This problem does not occur for the Fishman figure: there is no doubt about the intention to make Fishman as it was made; there are many other explanations, which have been reviewed; and the figure is unique, which suggests that this particular type of figure was not of great importance to its society.)

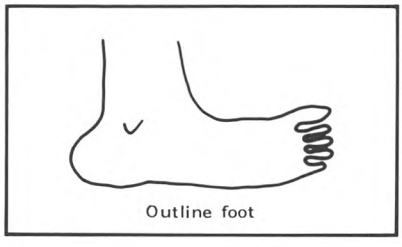
There are three possible explanations of the two-footed hind leg.

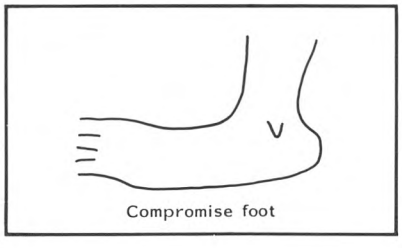
1. The figure is so poorly preserved that some natural or accidental feature is mistaken for the original engraving.
Comment: This possibility must be accepted.
2) The figure is a deliberate use of ambiguity.
Comment: This is the interesting idea.
3) The mixture of outline and stick-figure drawings in one figure, especially the use of stick-figure techniques for small features like digits in a generally outline drawing is a common feature of pictures, and may be stylistic, or conventional, rather than deliberate.
Comment: This possibility is worthy of attention, and seems more likely than the second explanation, so it should be investigated first.

In Fig. 13, I illustrate the difference between stick-figure drawing, where the line is an entity in its own right, and outline, where the line describes a figure by circumscribing its edges. My drawings of human feet show other possibilities: there is an outlined right foot in 'true perspective' (i.e., all the features are shown as if seen from the same viewpoint) (below); an outlined right foot in 'twisted perspective', in which the toes are shown as if seen from above, and foot is in profile (above left), and a left foot (top right) shown in twisted perspective, with the foot outline, and the toes stick-figure. Notice that the number of lines to be placed in the restricted space available for the toes varies from 5 (stick-figure) to 6 ('true perspective') and 10 (outline).









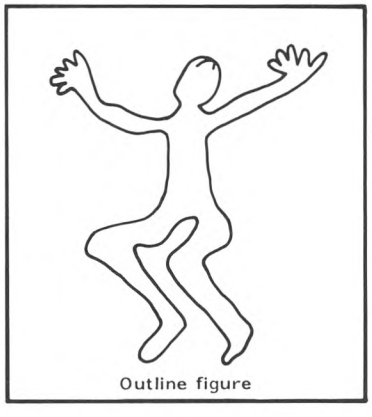


Fig. 13. Outline and stick figure pictures.
Outline foot
Perspective foot
Compromise foot
Stick figure
Outline figure

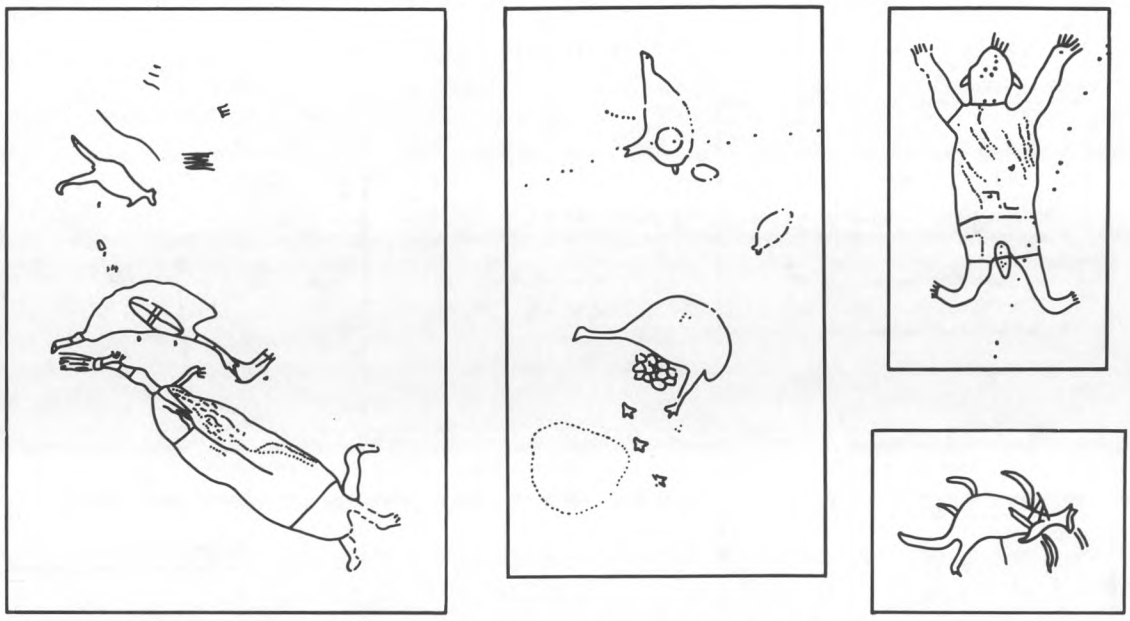


Fig. 14. McCarthy's versions of some Devil's Rock Figures.

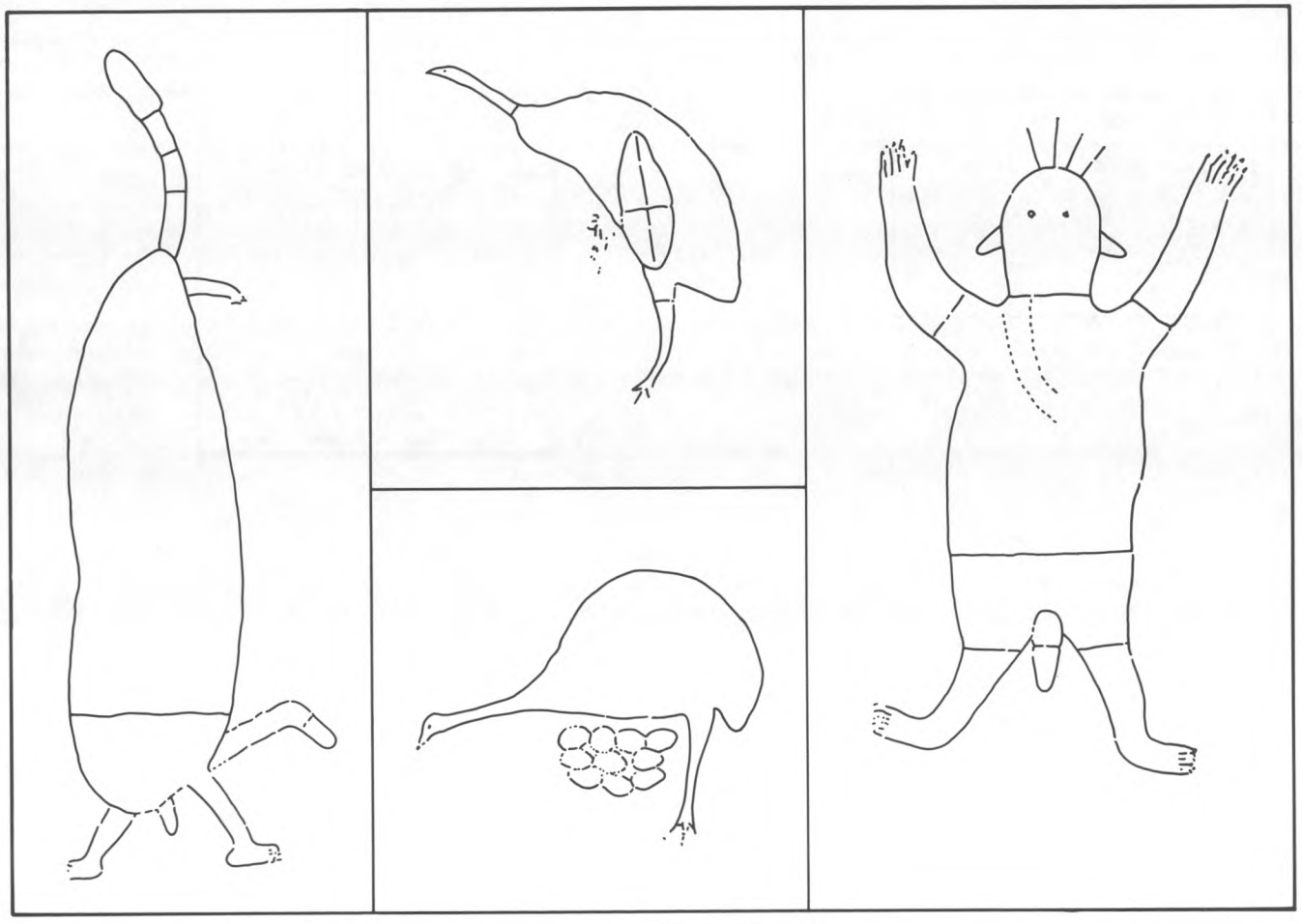


Fig. 15. Mathews' version of some Devil's Rock figures.

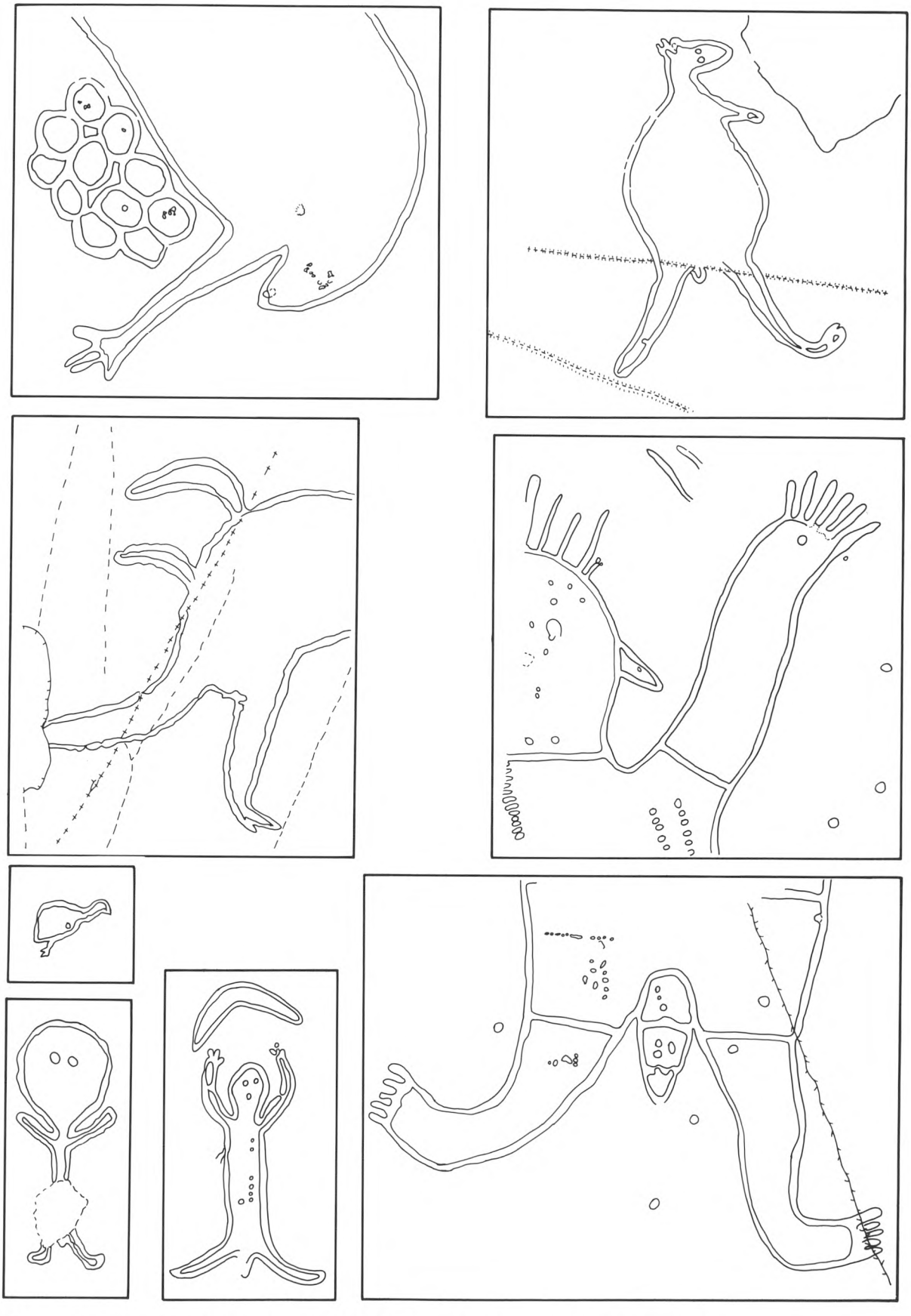


Fig. 16. Some details of McDonald's version of Devil's Rock engravings.

The compromise, in which stick-figure digits are appended to an outlined limb, has advantages of simplicity and economic use of cramped space. It does not seem difficult to read as what it's intended to represent. From these observations, we might expect to find examples of the compromise style universal, or at least common, at one site, so it makes sense to examine the other figures at Devil's rock, in order to determine how the digits were shown. Figures (14) and (15) show McCarthy's and Mathews' versions of figures at the site.

Mathews' rendition has all digits in outline (where digits are shown); McCarthy's version has stick-digits on the gigantic man. The state of the giant man's digits could be resolved (if preservation and visibility are good enough) by reference to MacDonald's recording or re-examination of the site, but we need not go to so much trouble to answer the question about whether stick-digits usually appear on outlined limbs at the site: stick-digits are certainly not the norm. They could be a particular style, evidence of a particular period of engraving, or an individual artist, and they could be a deliberate use of an ambiguous device.

In either case, it seems to me that the study is worth pursuing, perhaps as a part of a study of all sorts of ambiguity in rock art. Up to the present, there has been very little study of prehistoric pictures from a technical art viewpoint. (That is one of the reasons I prefer to call them prehistoric pictures, not Rock Art -they are seldom treated as art). In Australia, as I have shown in the review of the literature about Fishman, there have been a few desultory isolated comments about one particular ambiguity.

I hope it is not stretching the term too far to include two other aspects of art that appear in the Sydney engravings, and have also had isolated, cursory treatment. The first is the making of composite figures--often part human, part animal, and of gigantic size. These composites are thought to represent mythic beings, who were animal and man at the same time. (Fig. 17, from McCarthy 1984: Vol. 2, p. 31 for example). The second is the use of 'twisted perspective,' in which one figure is ambiguously seen from two or more directions at once--as engraved women seem to wear their breasts beneath their armpits, not in front of their chests.

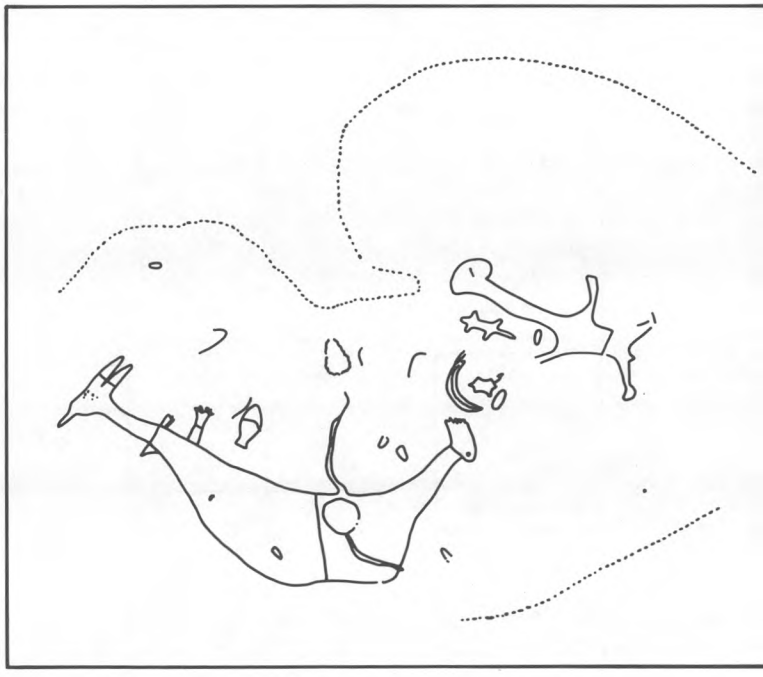


Fig. 17. Composite "anthropomorphs" or "culture hero."

CONCLUSION

The time is ripe for a study of ambiguity in prehistoric pictures. Although this contribution has mentioned Australian examples, such things are by no means confined to this continent. I believe that the study would be just as relevant in America, or Europe, as it is here. The subject has been hardly tackled since Schafer's work, first published in 1919, and Boaz, yet we now have a greatly increased knowledge of perception, and how art, and other aspects of representation, work. Such studies are now fashionable again (Baines 1985). Above all, we now have good recording to work from, thanks to Jim Bain, and his colleagues in other countries.

I hope someone reading this wants a life's work, or a thesis topic --or both.

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THE COSME GARCIA HOMESTEAD (LA 42880)

PHYLLIS S. DAVIS

INTRODUCTION

In March of 1978, the U.S. Forest Service asked members of the Albuquerque Archaeological Society to participate in a survey of archaeological sites in the Sandia Mountains as part of the Forest Service's program to record all cultural resources within the National Forest system. The area selected was Jaral Canyon on the west face of the mountain. This report covers but one of the many sites surveyed -- the Cosme Garcia Homestead. Others included many prehistoric and one other historic site -- a Forest Service Ranger Station. Prehistoric sites were located on both the mountainside and the colluvial slope and comprise room blocks, rock shelters, garden terraces, and water control systems.

PROVENIENCE

Jaral Canyon, local Spanish for "canyon of the sandbar willow thicket" (Cabos 1983), consists of a colluvial slope transected by several small east-west arroyos. Small flat areas on the slope were farmed both prehistorically and in historic times. In addition to receiving run-off water from the mountain, the canyon has several springs and seeps, both permanent and ephemeral; a permanent spring at the homestead supports a large stand of willows, undoubtedly the inspiration for naming the canyon.

Jaral lies within the Upper Sonoran Temperate Scrubland with areas around permanent water exhibiting the vegetation of Riparian Scrub (willow) and open slopes showing some Desert Grassland vegegation (yucca). Cottonwoods fall within the Riparian Deciduous Forest region and the junipers and pinons within the Rocky Mountain confier woodlands region (U.S. Forest Service, n.d.).

The factors that influence this diversity of regional flora are the canyon's position on the sunny west face of the mountain, the elevation, protection from north winds by the mountain, protection from northwest winds by the Juan Tabo ridge, permanent water, seasonal run-off and slope (drainage). Ranging from 6,370 to 6,520 feet in elevation, the canyon lies in a zone that receives between 10-12 inches precipitation annually (Cordell 1978: Map 6) and affords a 160-180 day growing season (Cordell 1978: Map 3). Corn requires about 120 days to mature, putting Jaral well within the climatic requirements for that crop. However, edaphic conditions (soil condition and nutrients), primarily decomposed granites, would seem to be poor. If this is so, then agriculture has always been marginal and natural resource (Pinon nuts, acorns, seeds, fruits) exploitation heavy.

Historically, irrigation seems to have supported a marginally productive farm with occasional crop failures. Cosme Garcia, the homesteader, states in an affidavit supporting his final proof for the homestead patent, "Out of the whole 57.171 acres 3 1/2 acres are under cultivation. Since 1902 I have raised a small crop of beans, corn, chili and vegetable (sic) on this land and have even irrigated 1/4 of an acre from a nearby spring. Ordinarily I have a fair crop. This year (1922) my crop is a total failure due to lack of rain." In answer to another question, he also states "there is nothing but rock and sandy soil on all of the above described land except about 3 1/2 acres in the

bottom of the canon. the (sic) balance, or about 54 acres, is rocky, steep, broken and fit only for grazing. Even as grazing land goats are the only domestic animals which do well on it. Ther (sic) is no timber of any value. There are scattering pinon and cedar growths which are no more than bushes and which will never attain any greater growth. The homestead about (sic) 6000 feet above sea level." Perfecto Zamora's statement (1983) that the homesteader raised sheep may refer to a later date and possibly to the period of ownership by Jacobo Garcia.

Today the canyon receives moderate to heavy use and housing developments have encroached along three sides. A riding stable is lcoated about one-half mile downstream from the entrance to the canyon and the horseback trails cut through or pass by nearly all sites on the colluvial slope. During good weather, the survey crew noted these trails received considerable usage, particularly on weekends. The homestead, on private land, has experienced some vandalism as well as normal deterioration through time.

HISTORY

The history of Jaral Canyon is the history of the National Forest system, homesteads, and Sandia Pueblo. The latter enters the picture by way of its claim to all lands that lie between the present Sandia Reservation east boundary and the top of the Sandia Mountains. Although the land in Jaral Canyon is currently either privately owned or falls within the Cibola National Forest, it is also entirely within the area claimed by Sandia Pueblo.

Occupation of the canyon dates to about A.D. 1425, and except for a ceramically dated gap between about 1490 and A.D. 1515, appears to have been continuous to about A.D. 1700 (Hayes, 1981:92; Warren, 1969:39). Thus, the canyon was probably occupied at the time Coronado was in the Middle Rio Grande area (1540-1542) and it has been suggested that refugees from the valley may have fled to Jaral during this period. Bolton (1949) cites three occasions when Indians left the Rio Grande pueblos during Coronado's stay. Further work, especially excavation, would be required to establish Jaral as a refugee site for this period because nothing on the surface indicates a sudden influx of people. Another period during which Jaral could have been used as a refuge was at the time of the Pueblo Revolt. Otermin, while at Isleta during his unsuccessful attempt to reconquer New Mexico in 1681, reported that two Indians from Sandia approached and told him "all their people - men, women and children were in the sierras." (Hackett, 1942:CXXXIX). Again, further work is needed to establish Jaral as a refuge site for this period also.

The year 1680 marks not only the year of the Pueblo Revolt, but also the date of an important law enacted in Spain -- "Laws of the Indies." This guaranteed that "Indians should be left their cultivated lands and pasture..." (Engstrand, 1978). Whether this was meant to include <u>all</u> the lands traditionally used by the pueblos is unclear. If it did, then this would appear to be a very early acknowledgment of Sandia Pueblo's claim to all land to the top of the mountain. Jenkins (1972) states that "No genuine land grant documents to the Indian Pueblos during this period have come to light." She is referring to the Pre-Revolt period. She also states "The only original title for a Pueblo Grant is that made by Governor Juaquim Codallos y Roybal, May 5, 1748, to the Pueblo of Sandia." She further says that there is much

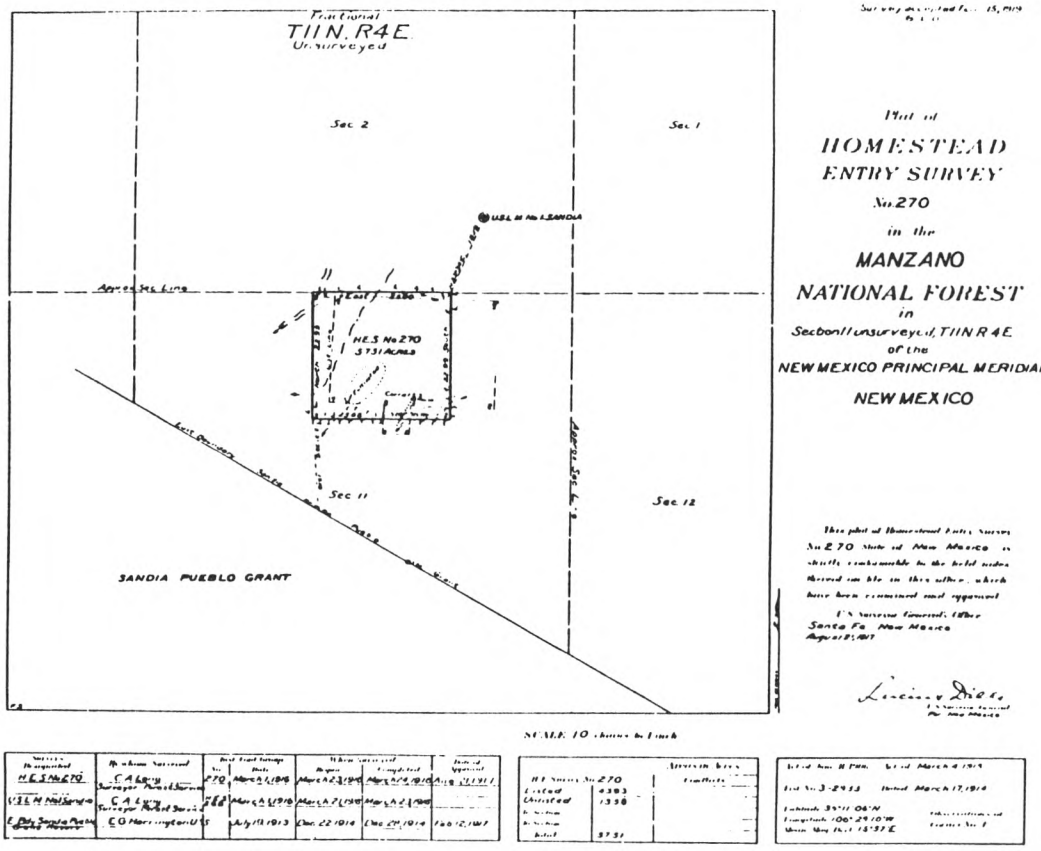

Fig. 1. Plat of homestead entry No. 270.

evidence that each pueblo had the rights to all the lands its "Members effectively used and occupied." This could possibly apply to the mountain lands claimed by Sandia. Roybal's title for Sandia was not located in the research for this report, but a document issued in 1762 by Governor Tomas Velez Cacupin (translation by David V. Whiting, 1867) guarantees that "the Indians of the Pueblo of Sandia, newly settled among the nations who came from Moqui" would be allowed to build their village, guard their stock, and cultivate the soil with specific limitations placed on their labor by "the Senior Justice, his Lieutenant or other person." No mention is made of the extent of the Sandia Pueblo Grant. At the time Whiting translated the Cacupin order for the Surveyor-General of New Mexico, that office surveyed Sandia Pueblo. The plat of this survey establishes the eastern boundary of the Pueblo at the base of the Sandia Mountains -- not at the top. In 1864 President Abraham Lincoln affirmed the Sandia Pueblo land claim as established by this survey.

The area next enters the records when Cosme Garcia applied for a homestead patent on August 11, 1914, with most of the land requested lying within Jaral Canyon. In his affidavit he states he moved into the canyon in 1900 (another affidavit states 1902). At that time the land was designated as "Manzano National Reserve, the name being changed to Manzano National Forest in 1907 with the establishment of the National Forest system. In 1931 the name was again changed -- to "Cibola National Forest" by Executive Order No. 5752, signed by President Herbert Hoover, December 3, 1931 (Singer 1984).

The Homestead Entry Survey No. 270 Plat (Figure 1) was approved in 1917, and after much misunderstanding, misinformation, misfiling, and other

delays, President Warren G. Harding signed the Homestead Patent for 57.51 acres (more or less) on February 19, 1923. This is the date the land enters into the records of Bernalillo County.

It is genrally thought that all homesteads were established at 640 acres (or in even divisions thereof: such as 320 or 160). However, it was not unusual for the Hispanic homesteaders of the southwest to acquire smaller portions (Snow 1985). Thus, Garcia received 57.51 acres, and two other homesteads in the vicinity were of similar size. Also, since in his affidavit Garcia states that he owned land by the river, it is probable that the Jaral property was used only seasonally. This also was a relatively common practice among the Hispanic homesteaders (Snow 1985).

In 1933, President Franklin D. Roosevelt created the Civilian Conservation Corps (CCC) in the depths of the depression to give jobs to young men while making improvements on public lands. By 1935 several CCC camps had been constructed in the Sandia Mountains, including one at the entrance to Juan Tabo Canyon not far from Jaral Canyon (Albuquerque Museum 1981). Several persons who were connected with the Juan Tabo CCC camp have furnished information that applies to Jaral Canyon.

Perfecto Zamora was born on a ranch in Juan Tabo Canyon and states there were four ranches between what is now the tram and the upper reaches of Juan Tabo Canyon, and that Cosme Garcia lived closest to the tram in Jaral Canyon. This gave me the name of the homesteader -- information I did not have until then.

Tony Sanchez, a CCC worker at the Juan Tabo camp, worked on soil erosion projects in the area.

Jack Dyer, another Juan Tabo worker, gave the name of Ed Cottom as the U.S. Forest Service Ranger at Jaral at the time.

Further information was furnished by Homer Pickens, retired from the New Mexico Game and Fish Department. He worked in Jaral (as well as in other nearby areas) on projects conducted jointly by the New Mexico Game and Fish Department, the U.S. Forest Service, and the CCC. In addition to re-introducing bighorn sheep into the Sandias, they improved the land for the quail population and set up water sources for other wildlife.

On January 8, 1941, Cosme Garcia deeded the entire homestead to Jacobo Garcia, who may have been his son. No record search was made to establish this. Since then, the acreage has been divided into smaller parcels. The most recent ownership change has been to a local developer.

THE HOMESTEAD

Upon entering Jaral Canyon from the west, the first site encountered is the Cosme Garcia Homestead (LA 42880). At an elevation of 6,410 feet, it is also the lowest of the Jaral sites.

The original patent covered 57.51 acres with much of the homestead lying outside the canyon boundaries. The house and associated features are in the canyon and are situated in the triangle formed by the confluence of the two large arroyos. There is evidence that the southern arroyo has washed away some of the agricultural field that was a part of the homestead complex.

The elements of the homestead (Fig. 2) are: Access road, two-room house, corral, loading chute, latrine, chicken coop, garage, irrigation system, and trash area.

The access road enters the canyon from the west and served both the homestead and the Jaral Ranger Station. It is situated on a low bench on the north side of the arroyo

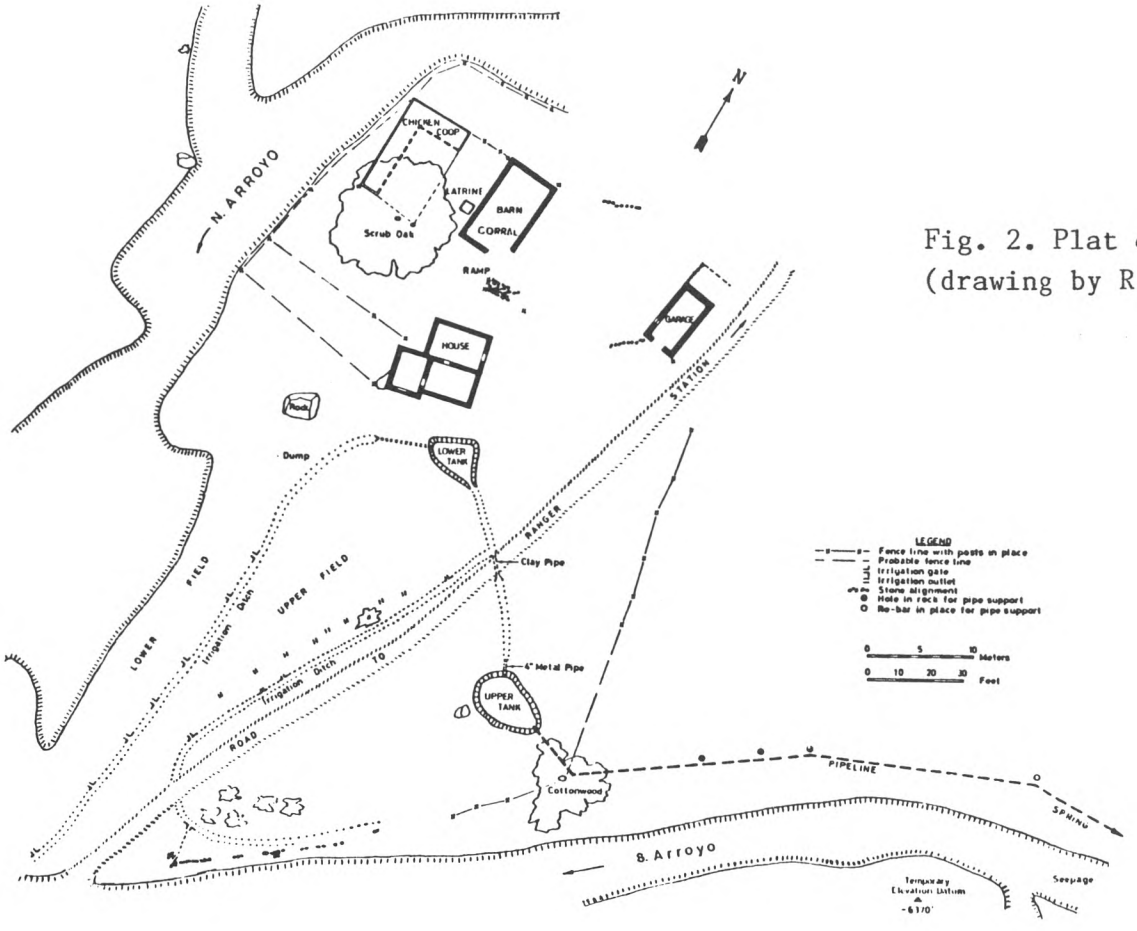

Fig. 2. Plat of homestead (drawing by R.A. Bice).

channel and enters the homestead at the southern end of the upper field. It crosses the pipe connecting the two water tanks, and passes to the east of the garage before turning eastward toward the ranger station. It is unimproved.

Although the house is shown as having three rooms, the southeast portion was evidently a covered porch. This means each of the two rooms open to the porch only, necessitating going outside in moving from one to the other. However, this is not an uncommon feature in rural Southwest homes. The porch concept is supported by the nature of the remains. A stone foundation was noted, but not the amount of stones or adobe needed for outer walls. The amount of wood debris accommodates both roof and porch flooring.

The southwest room was constructed of local granite stones chinked with adobe. The interior walls were covered with adobe and concrete plaster. No paint was evident, nor were the exterior walls plastered. The shed-style roof slopes to the west and was supproted by 2 foot by 6 inch beams spaced 2 feet apart. There are a few sections of stamped metal ceiling panels still in place, with more in the general debris outside the structure. The floor is undeterminable. A window appears in the south wall, and a former window in the north wall has been filled in with adobe bricks.

The northeast room is far more deteriorated because it was constructed of adobe bricks. It is likely that the southwest room was constructed when the homesteaders first moved into the canyon and used the available local material. The northeast room was probably added later when the settlers were able to obtain adobe bricks. There is no known source for adobe within the canyon. The porch could have been

Fig. 3. Cosme Garcia homestead.

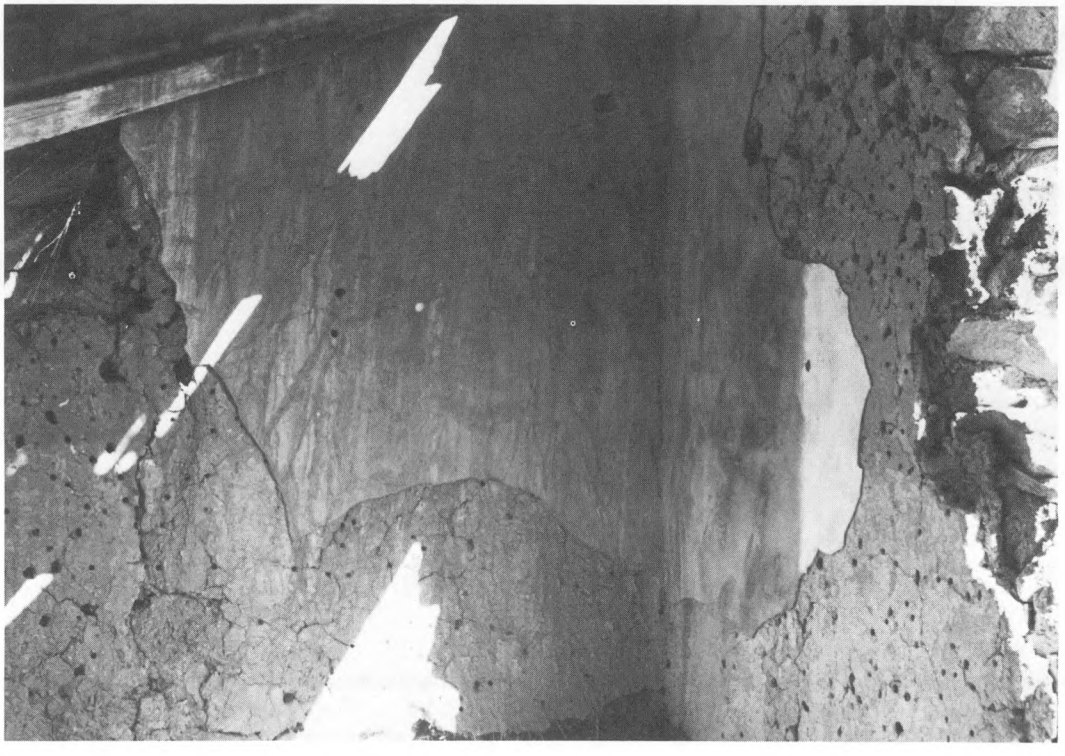

Fig. 4. Southwest room showing wall plaster.

Fig. 5. Corral at the Garcia homestead.

Fig. 6. Chicken coop at Garcia homestead.

built at the same time as the northeast room or added later. It is impossible to tell due to the advanced state of deterioration.

The corral, north of the house, was the only structure, apart from the house, on the property when the homestead entry survey was made. Only these two structures appear on the plat of the survey. It was a typical rural New Mexico corral, consisting of an area enclosed by a stone wall with a wooden shelter at the north end.

Between the house and the corral is a small loading chute with a ramp of stone. The size would agree with one informant's statement that the homesteaders raised sheep (Zamora 1983). It also fits Garcia's statement that the land was fit only for goats. The chute consisted of two pairs of upright wooden posts set in concrete about 3 feet apart. Stones were piled up behind these posts. Although it is possible they represent fallen walls,

Fig. 7. Stove at Garcia homestead.

it is more likely they formed a loading ramp. Between the upright posts, a small log forms a gate. Another argument for a loading ramp is the positioning of one long log attached to the posts and slanting down to the ground at the rear of the structure, where it is imbedded in concrete. The structure is about 2.5 m. long, open on the back end, and shows much decomposed animal manure between the stones.

The latrine is located immediately to the west of the corral. It is not standing, but the shape and size of the debris say "outhouse."

Further west is the chicken coop. The chicken yard was fenced and remains of wooden coops are strewn about on the north and west sides.

Northeast of the house is the garage, constructed entirely of rock with a wood roof. The purpose of small rock alignments from the northwest and southwest corners is not known.

The outstanding feature of the homestead is the system that captured, stored, and distributed water. Like the prehistoric peoples before them, the historic settlers were drawn to the canyon by permanent water. For the homestead, this consisted of seepage from under a granite outcropping on the north side of the south arroyo, about 73 m. east of the house. The north bank of the arroyo is formed by this outcropping for a distance of about 70 m., disappearing just east of the upper storage tank. At the eastern end of the outcropping, water is forced to the surface and forms a spring or seep about 10 m. long that disappears into the sands of the arroyo. Cottonwood trees in the general area of the seep are evidence that water is never very far below the surface.

The water source was tapped by laying a pipe into the seep and transporting the water through the pipe to the upper tank. Although the seep is in the arroyo bottom, and the tank is on top of the north bank, the arroyo bed drops steeply enough that the seep is 1.61 m. higher in elevation than the tank inlet, allowing for gravity flow to the tank. As the pipe passed along the face of the granite outcrop, it was tied to metal bars set vertically into holes drilled in the rock. Four of these holes can be seen, with the metal bar still in place in the easternmost hole.

The upper tank was built of stone and dirt with stone lining the inside surface, supplemented by mortar and originally painted with tar. It is 1.03 m. deep at the center. The pipe from the spring simply dropped the water into the tank from ground level. A 4 inch diameter metal pipe, set into the bottom of the tank wall on the west side, connects to a clay pipe that carried the water under the road and into a ditch to the lower tank. Slightly past the mid-point, a

Fig. 8. Lower tank at Garcia homestead.

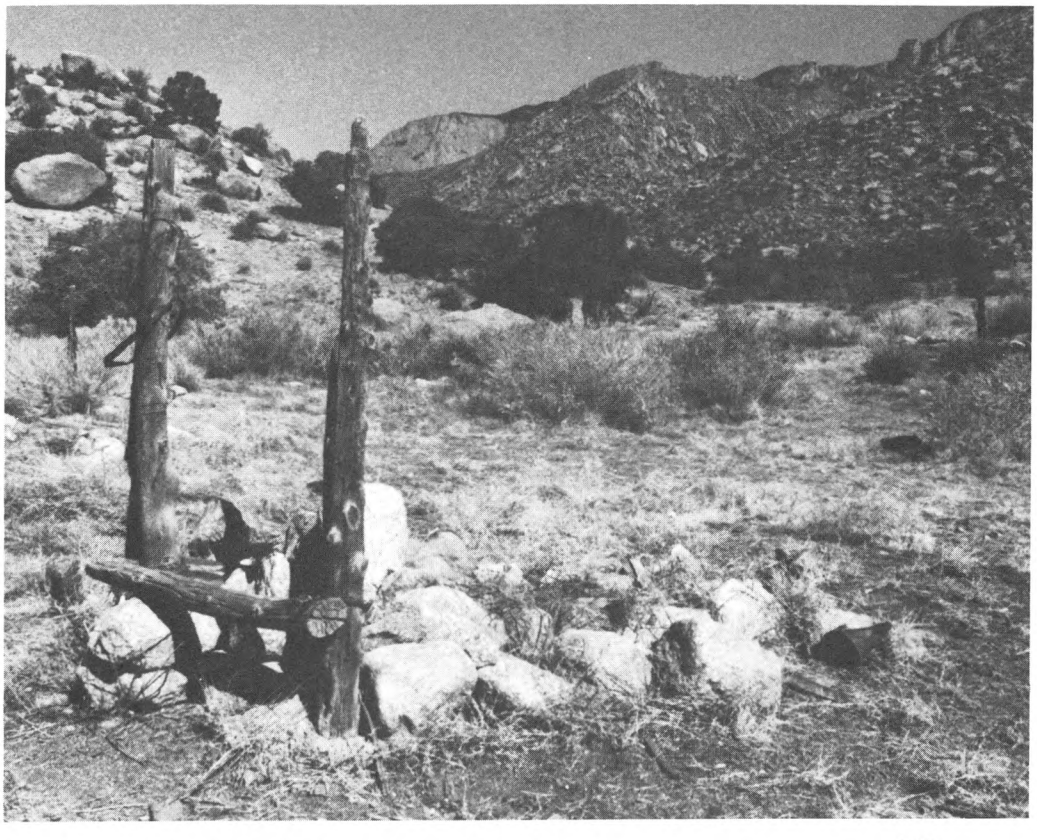

Fig. 9. Ramp, probably for sheep, at Garcia homestead.

Fig. 10. Sluice box at Garcia homestead.

second ditch to the south carried water parallel with the road and then turned eastward for 13 m. along the north edge of the arroyo. Remains of four wooden gates and eight sluice boxes are still found on the downslope side of the irrigation ditch. These controlled the flow of water to the upper field and to an area southeast of the road that has evidently been washed out by increasing arroyo widening. Of interest at this latter location are five exotic trees -- "Tree of Heaven" (Ailanthus altissima).

From the lower tank, water was let out at the western end into a ditch that carried it south 54 m. It probably went further, but it presently disappears into the south arroyo. Seven wooden gates are still to be seen along this ditch. These controlled the water flow into the lower field.

The upper and lower fields are the cultivated areas that are visible today. However, the 1917 homestead entry survey plat shows only a large area to the northwest as being cultivated. This appears to lie on the other side of the ridge forming the western boundary of lower Jaral Canyon. The fields adjacent to the house were probably kitchen gardens.

It is unlikely that water for household use was taken from either open tank in spite of the lower tank's proximity to the house. It was probably used for watering stock as well as for irrigation. Several 2-3 gallon jars found in the trash area possibly were used to carry water directly from the spring to the house.

The trash area is located about 6 m. southwest of the house at the northern end of the lower field. With the canyon being occupied continuously since about 1900, it could be expected that cultural material would be found dating back to that period, but nothing was found predating the 1930s,

or possibly the late 1920s. However, since the original home- steaders and subsequent owners appear to have used the same area for trash, it is likely the older material is buried under the later material. In addition to barbed wire, the oldest material appears to be several sections of very narrow automobile tires, corrugated metal roofing material, and stamped metal ceiling panels. The largest items are a stove and a hot water tank. Other artifacts include lard buckets, flashlight batteries, mason jars, bottles, cans, sardine cans, washtubs, metal pans and boxes, and baling wire.

SUMMARY AND CONCLUSIONS

For at least 500 years, and probably longer, Jaral Canyon has attracted people who either settled permanently or came into the canyon seasonally to take advantage of the varied resources offered by the unique properties of the canyon -- west facing, slope, water, drainage, and the variety of flora and fauna to be found in an area where two distinct zones meet -- the mountain and the plain. Not only did people simply use the available water in the canyon, during all periods of occupation they modified its course in one manner or another to suit their particular needs.

Thus, the prehistoric inhabitants built a diverson system, the home- steaders piped water from a seep into a system of tanks and ditches, undetermined people constructed a long containment system of rocks along the arroyo, and the Forest Service piped water underground to the ranger station. This ability to control the water, both from springs and from mountain run-off, enabled a farming subsistence to be practiced, if only marginally. This would undoubtedly have been supplemented always by hunting and gathering. Deer were fairly abundant in the area into re- cent times, and acorns, pinon nuts and grasses would have been harvested.

Human occupation has undoubtedly had an influence on the canyon from the very beginning. Diverting water flows will encourage new vegetal growth in a new area while discourag- ing it in the deprived area. Nearby presence of people will drive wildlife away from the core area and ultimately out completely.

With the homestead now part of a large residential complex, it can be expected that the cultural remains noted by this survey will not survive much longer and another element of New Mexico's colorful history will disappear forever

Albuquerque Archaeological Society

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Particular appreciation is given to Sterling Edwards, owner of the Homestead at the time of the survey,

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And especially, John.

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THE BRONZE TRAIL SITE GROUP: MORE EVIDENCE FOR A CERRILLOS-CHACO TURQUOISE CONNECTION

REGGE N. WISEMAN
AND
J. ANDREW DARLING

Introduction

Few recent concepts in Southwestern archaeology have captured the interest and engendered controversy like the so-called "Chaco Phenomenon" (Judge 1979; Kelley & Kelley 1975; Tainter & Gillio 1980; Frisbie 1983; Mathien 1983; Riley & Hedrick 1980; and Weigand et al. 1977: 21-22). Although there has been considerable polarity in the interprepation of the remains and the system they represent, few researchers would deny that turquoise was an important, perhaps integral part of that system (Kelley & Kelley 1975: 183, 202-204; Judge 1979: 902; Snow 1973: 33-35; and Weigand et al. 1977). However, one of the major problems in any attempt to delineate the role of turquoise has been the inability to discover the means by which it was brought into the Chaco system. That is, where did the turquoise come from, who mined it, and how was the distribution organized and activated.

In considering the origins of Chacoan turquoise, investigators rather quickly looked toward the well-known Cerrillos Hills some 30 km. south of Santa Fe and about 185 km. southeast of Chaco Canyon. Although there are reasons to believe that other sources were also used by the Chacoans (cf. Mathien 1981 and sources cited therein), the use and importance of the Cerrillos source is well documented historically, extending back at least into late prehistoric times (Judd 1954: 82-83; Judge 1979: 902; and Lang 1982: 166). Some researchers have suggested, either explicitly or implicitly, that the turquoise was mined by Rio Grande locals and traded to Chaco through intermediaries (Dittert 1968: 9; Mathien 1983: 203-205). Others suggest that the Chacoans mined the turquoise themselves from sites such as the Pojoaque Grant Site (LA 835) located 20 km. north of Santa Fe (Frisbie 1983: 221; Judge 1977: 7-8).

The problem until recently has been that the evidence in the Cerrillos area for 11th and 12th century exploitation of turquoise, during the height of Chacoan vitality, was largely lacking. In a recent paper, Warren & Mathien (1985) detail prehistoric mining of Cerrillos turquoise during that period by identifying specific mine locations and their associated ceramics. They identify two localities in particular - Mount Chalchihuitl and Mina del Tiro - as well as lesser used localities, all of which have yielded numerous sherds of Gallup/Prewitt Black-on-White pottery (Warren & Mathien 1985: Tables 2 & 3 and others). The sherds were found scattered about the various mine pits, but there were no known architectural sites found which date to the Developmental Period.

The situation has now been at least partially solved by the discovery, by Curtis F. Schaafsma of the Museum of New Mexico, of a group of small pueblos in the rolling hills a kilometer or so east of the mines. The present report describes these sites, including one sherd and lithic area which may be a pithouse village; compares them to contemporary Rio Grande Developmental Period sites; and attempts to place them in perspective with the Chacoan system as it is currently perceived.

The Physical Setting

The Bronze Trail Site Group is

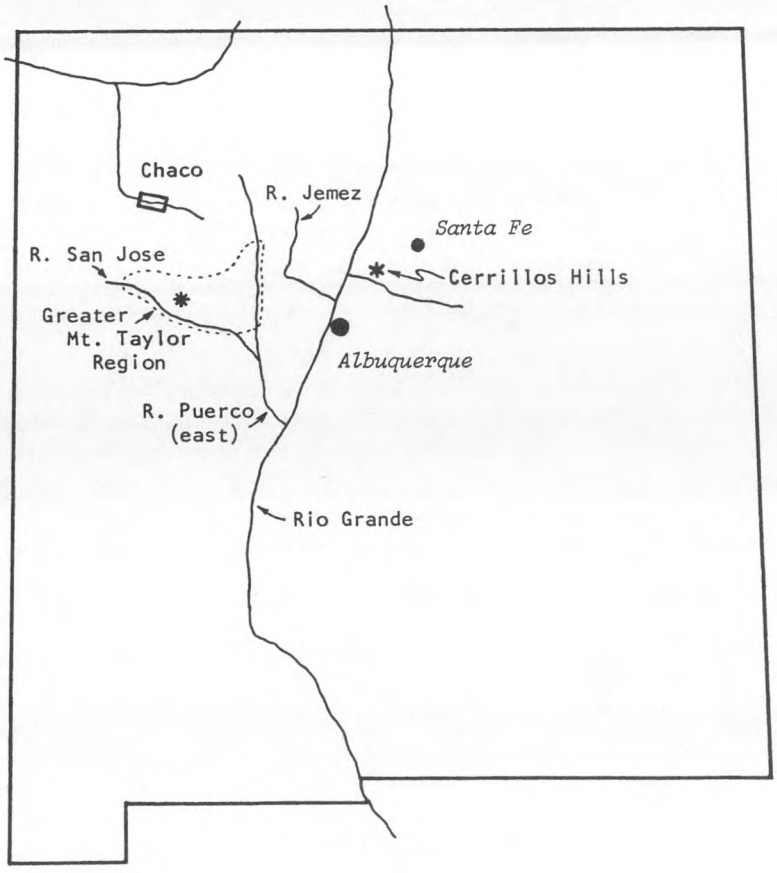

Fig. 1. Project location map.

located in a zone of rolling foothills on the southeast side of the Cerrillos Hills, west-central Santa Fe County, New Mexico (Fig. 1). The Cerrillos Hills, a small, isolated group of peaks reaching nearly 2130 m. (7000 ft.) elevation, are located immediately north of the Galisteo River where it leaves the Galisteo Basin on its way to the Rio Grande. The hills were formed by the intrusion of a monzonitic stock into sedimentary units which have since eroded away, leaving the stock exposed. Fractures in the monzonite became mineralized, creating numerous exposures of turquoise and other minerals throughout the several peaks (Warren & Mathien 1985: 94).

There is virtually no level land in the vicinity of the sites (Fig. 2), and the drainages, in addition to being small and intermittent, lack alluvial deposits except within the stream channels themselves. Springs are to be found scattered about the hills with one of the best being in Gallina Arroyo 1 kilometer to the east of the sites (C. Schaafsma 1985: personal communication). The Galisteo River lies 5 kilometers to the south.

The soils of the area are classified as Stoney Rockland (Folks 1975). The association has little agricultural potential, even under dry-farming conditions, because of moderate to strong slopes, stoney textures, and minimal loam development.

Temperature data for the village of Cerrillos, located immediately south of the Cerrillos Hills, are meager. An annual average temperature in the low 50's (degrees F), a January average in the high 20's, and a July average in the low 70's are indicated (Gabin & Lesperance 1977). Modern annual precipitation averages about 300 mm. with the current regime being about equally split between winter and summer (U.S. Department of Commerce, Weather Bureau 1967). The average

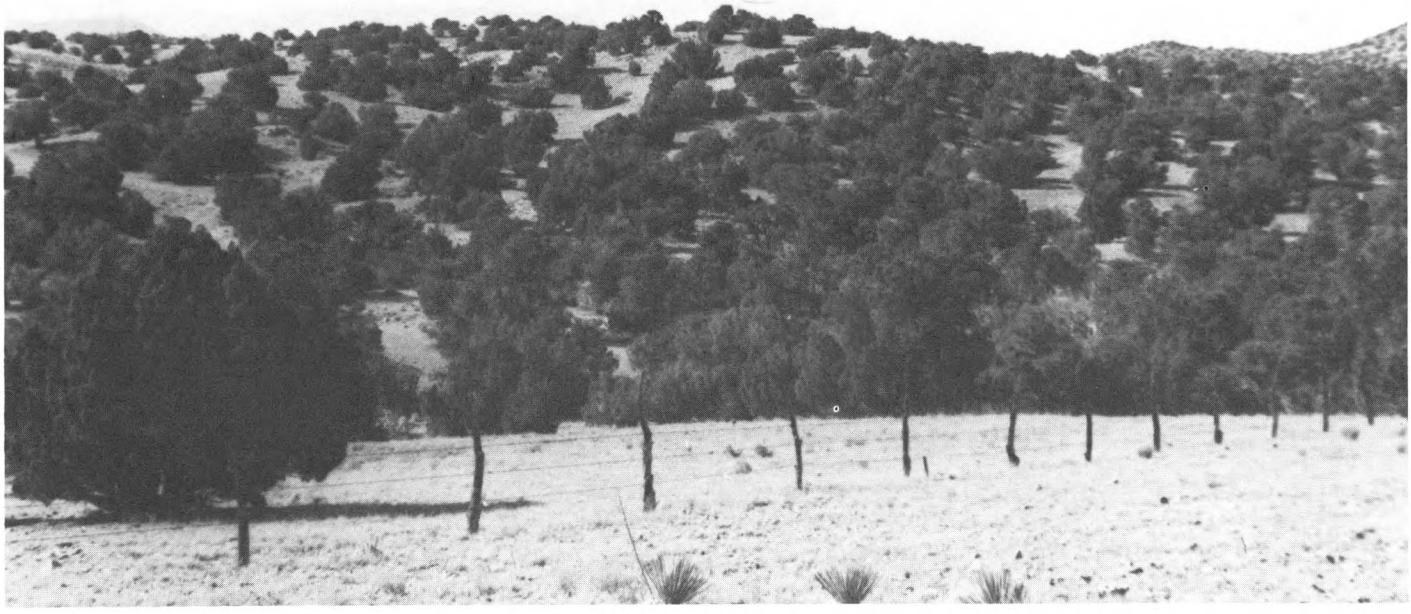

Fig. 2. General view of terrain, looking southwest Site #5 just to right of tree in left foreground; Site #2 on hilltop in center.

frost-free season is 160 days (Tuan et al. 1973: Fig. 38).

The foothills are cloaked in a juniper-dominted, pinon-junier woodland with a spotty grama grass understory. Animals which could be expected to frequent the area include mule deer, coyote, jackrabbit, and a variety of smaller rodents, birds, and reptiles. Antelope would have been available on the plains a few kilometers to the east (Findley et al. 1975).

The Sites

The Bronze Trail Site Group is composed of five small pueblos and one sherd and lithic scatter (Table 1 and Figs. 3 - 7). The pueblos range in size from three to eight or ten rooms each. All but one are linear, and the exception may be C-shaped. Evidence for kivas was noted at two of the pueblos, and two others have what appears to be walled courtyard areas. Pithouses may be present in the sherd and lithic area. Each site has been assigned a Laboratory of Anthropology site survey number, but for ease of reference, the field numbers will be used in this report.

The major type of pueblo construction is masonry, though jacal walls are suspected at Site #4. The rubble mounds vary from 25 to 100 cm. high; the placement of Site #3 on the side of a hillock makes its mound appear higher than it is (Fig. 6). The variations in rubble mound heights indicate that the masonry components of the walls vary from site to site. Some are estimated to be as little as 1/4 full height (or 1/2 m.) at Site #1 and others to be full height (1 1/2 to 2 m. - Site #3). The walls of Sites #2, #4, and #5 fall in between. A deep vandal's pit in Site #3 shows the masonry there to consist of closely fitted, undressed field stones; little or no adobe mortar was used to hold

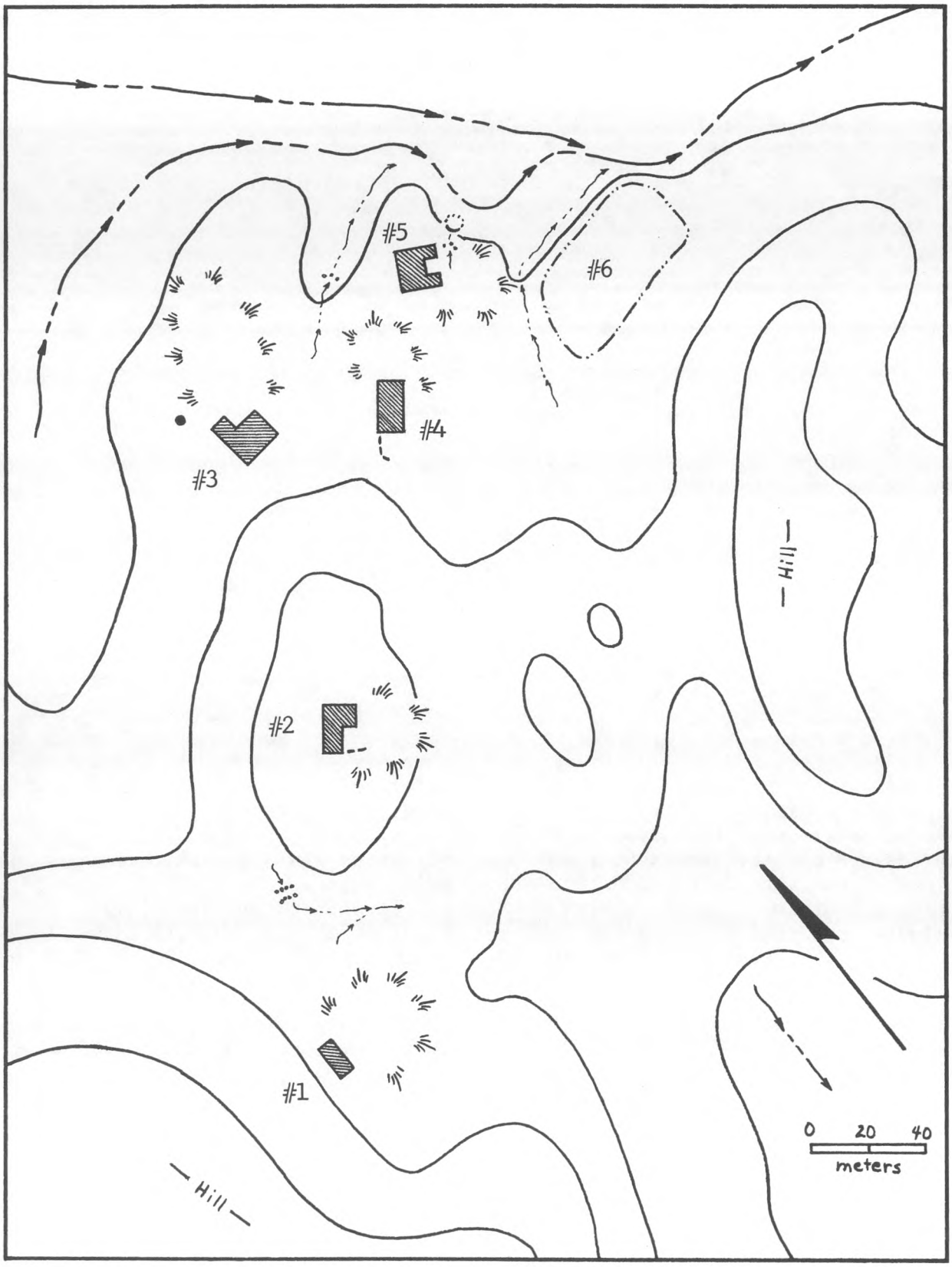

Fig. 3. Bronze Trail Site Group map.

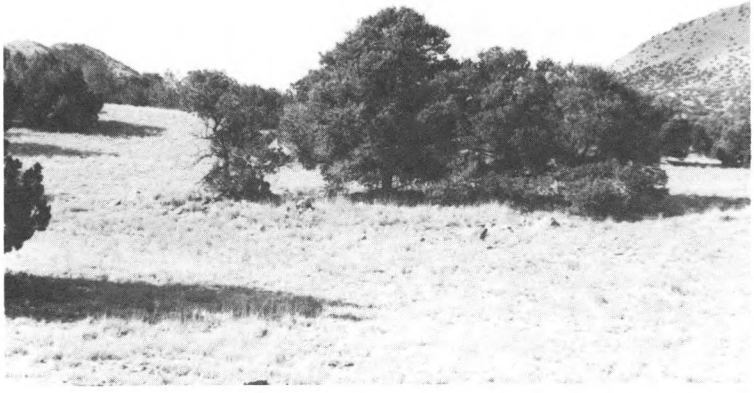

Fig. 4. Site #1, looking west.

Fig. 5. Site #2, looking southwest.

the oddly shaped stones in place (Fig. 8). The upper portions of partial-height masonry walls were, presumably, flimsy jacal or adobe which have left no appreciable accumulations of dirt among the fallen stones. The suspected jacal walls at Site #4 are located at both ends of the masonry section and are denoted by a few rocks in slightly raised earth extensions of the pueblo.

Only two kivas were noted, though the presence of others cannot be ruled out. One, as exposed in the east-central part of the Site #3 pueblo, apparently consists of at least one straight and one curved wall in a roughly square or rectangular area of the rubble mound. The second kiva, at Site #5, is a 1 1/4 m. arc of masonry exposed in the stream bank northeast of the pueblo (Fig. 9). The sediments of the stream literally lie against the wall, indicating that the kiva was at least partially placed within the drainage. The surface of the sediments lies 3 m. below the level of the pueblo.

The partially enclosed courtyards are at Sites #2 and #4. In both cases, they appear as relatively flat areas bounded on two or three sides by pueblo rooms and low rock walls; one side, the downhill one in both cases, is open. The one at Site #2 possibly indicates a kiva location, but there is no depression per se, and the underlying bedrock is close to the surface over the entire hill.

The refuse areas vary considerably in terms of size, density of artifacts, and location with respect to the pueblos. That of Site #1 is the sparsest of all and lies broadcast to the east. Refuse at Site #2 is also quite sparse and generally lies scattered down the slope to the southeast. The Site #3 refuse is the densest (estimated to number in the hundreds of items) and lies principally along the back of the ridgelet which extends northeast from the

Fig. 6. Site #3, looking northwest.

Fig. 7. Site #5, looking southwest.

Fig. 8. Wall construction at Site #3.

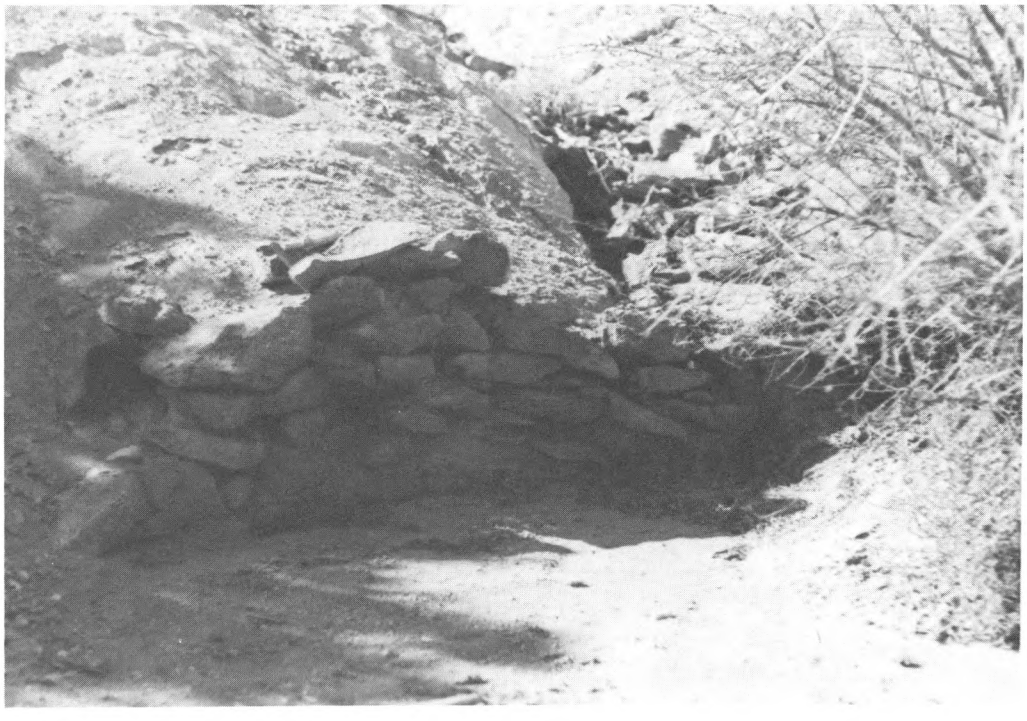

Fig. 9. Kiva wall exposed by drainage, Site #5.

pueblo. That of Site #4 is an elongate accumulation of several dozen items which spreads mainly to the north of the pueblo, and that of Site #5 is broadcast to the northeast, east, and southeast.

The sherd and lithic scatter, Site #6, is located along the valley margin on the north side of a small hill and to the east of the other sites. Items of material culture are common in all eroded/deflated areas in and around the shallow blanket of sand which covers the sites. The presence of several pithouses (2-6?) is suspected, but there is no direct evidence of them.

Two other kinds of man-made features are present within the site group. Short, linear rock alignments are found on small, shallow drainages at three locations (Fig. 2). Those between Sites #1 and #2 consist of 4 meter long alignments spaced 5 meters apart. These one-rock-wide, one-rock-high arrangements are like those found commonly throughout the Southwest, thought to be water and soil control devices built by prehistoric Indians. The other two groups are located to the east and to the west of Site #5. They are less convincing as prehistoric soil and water control devices because they are each less than 2 meters long and the rocks are irregularly placed, even when taking displacement by erosion into account.

The last kind of man-made feature is a 2-3 m. diameter 1/2 m. high circular concentration of unmodified field stones. Located within a few meters of the northwest corner of the Site #3 rubble mound, this pile could be either an Indian shrine or a miner's claim marker. The latter does not seem too likely because the remains of an old, dead juniper, partly concealed by an old, live juniper are in its center.

Formal Tools and Other Artifacts

Mining Tools

Five gray monzonite stones were selected for their generally elongate forms and were edge modified (chipped) to produce hafted hammers suitable for breaking rock during mining oprations (Fig. 10 and Table 2). Three have prefunctory to well-defined pecked-and-ground notches on two or four edges to facilitate hafting. The three similar specimens were recovered from a cache found eroding into the stream bed at Site #5; two show slight battering on one end, but none of the cache specimens or the large tool were used to any great extent. The fifth specimen is broken just in front of the hafting notches. All are made from the locally available gray monzonite porphory.

The three cache specimens are very similar to mining tools recovered by members of the Albuquerque Archaeological Society during their excavation of a prehistoric lead mine in the Cerrillos Hills. The other two are larger and heavier than any recovered by the society (W.M. Sundt, 1985: verbal communication).

Lapidary Stones

Abrading stones which would have been useful for working turquoise or other materials are common on most of the sites. Only two specimens were collected (Fig. 11 and Table 2). Both are thin sandstone slabs with little or no modification other than small grinding depressions on one surface.

Another type of abrader was noted but not collected. One was a chunk of coarse-grained sandstone with three distinct grinding channels or grooves with diameters of ca. 2-3 cm.

Bead

A single white, discoidal calcite bead was recovered from the surface of the refuse area of Site #5 (Fig. 12). The centrally perforated disc is 6 x 2 1/2 mm. and has a 2 mm. diameter hole.

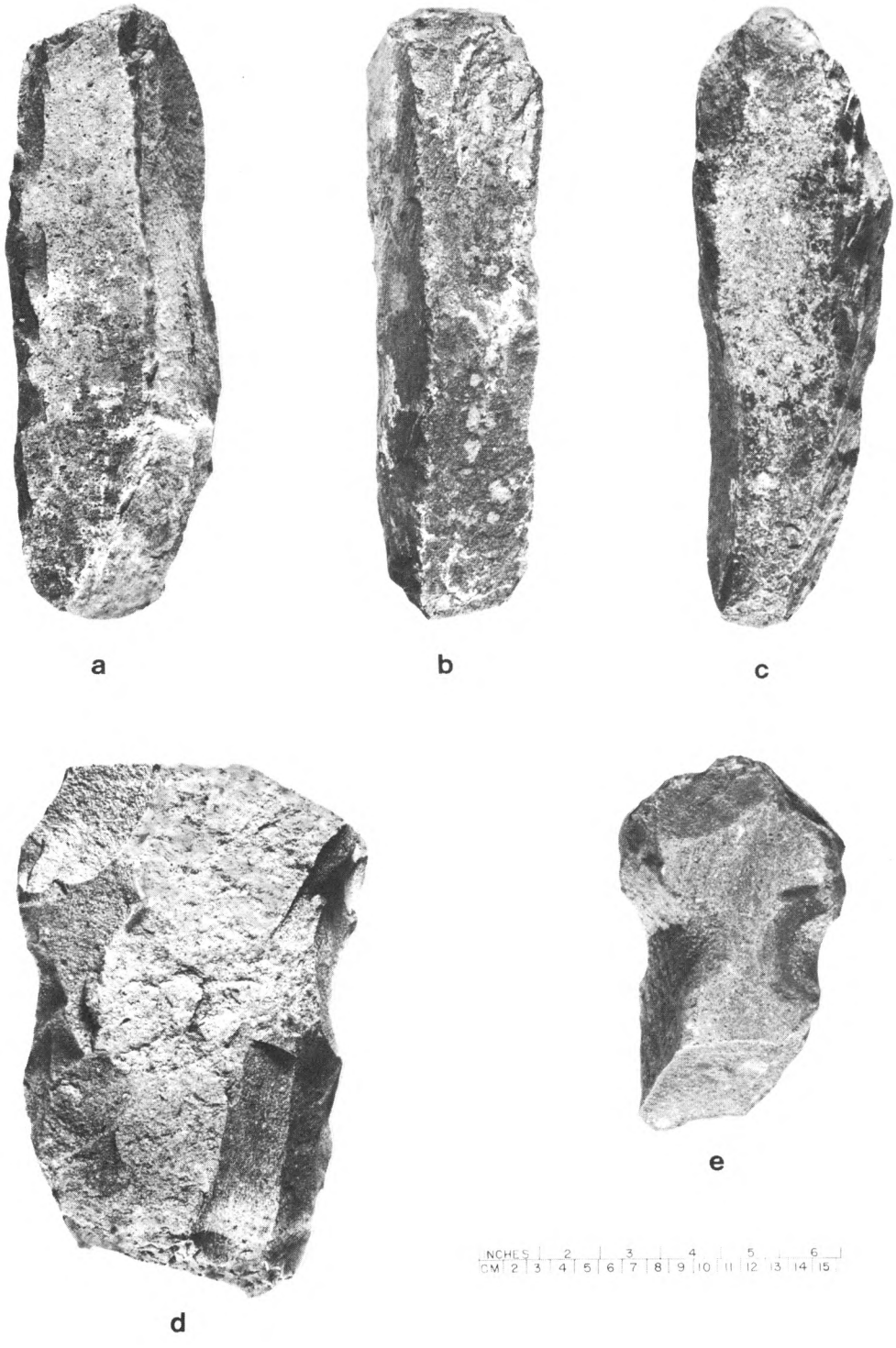

Fig. 10. Mining tools. Cache tools (a-c) and larger tools (d-e).

Metate

Only one piece of seed-grinding equipment (manos and metates) could be found on any of the sites in spite of an intensive effort to locate such tools. The one specimen, of burned (reddened) gray monzonite porphory, is apparently an end and edge fragment of a little-used slab metate. It was not collected but instead was left in situ among the wall fall of the Site #1 pueblo.

Ceramics

The grab sampling of ceramics took place on two or more occasions at each site. The first sampling was made with the intent of obtaining a number of identifiable sherds with as broad a representation as possbile. The representation, hopefully, included all of the variability present at each site. In reality, the general paucity of potentially identifiable black-on-white sherds was a major factor, and we essentially collected all of these sherds which could be found at Sites #1, #2, #4, and #5. Sites #3 and #6, however, have comparatively large numbers of surface sherds, and not all potentially identifiable sherds were collected.

The second sampling was specifically intended to locate types and varieties of sherds which were shown to be absent in the first collections but probably should be present on the basis of the assemblages. A major focus, as will soon be discussed, was the acquisition of presumed locally made types such as Kwahe's B/w and the distinctive micaceous utility wares. Thus, these last two types/categories, especially the utility, are numerically over-represented in the collections.

In general, the grab sample technique of collection does not result in quanitatively reliable samples. We believe, however, that the samples obtained on this particular project do have general temporal usefulness because of the attempt to collect at least one example of each type by thorough scanning of the sites' surfaces. Additionally, because most of the sites have so few diagnostic sherds, the representativeness of the collections as a whole could probably not be improved significantly even by total collection.

The analysis of the sherds reported herein was accomplished with a 30 power binocular microscope and Laboratory of Anthropology comparative collections from sites in the San Juan Basin, the Rio Puerco of the west, the Rio Puerco of the east, and the Rio San Jose drainages. At best, the results presented below should be viewed as tentative and subject to modification pending the results of a more detailed analysis currently in planning.

The analytical units (Tables 3 & 4) are based upon several criteria. Observations included: characteristics of paste fracture, paste color, presence/absence of a carbon streak, and temper type. Painted wares, where possible, are typed according to established descriptions, and vessel forms are noted.

Most of the type assignments are relatively straightforward. It should be noted, however, that those typed as Late Red Mesa B/w and Escavada B/w, and any combinations thereof, could well refer to the same body of ceramics in most instances. It is difficult to tell whether a small sherd bearing a comparatively large, black unticked solid element on a chalky white, easily eroded slip belongs to one or the other type. Temporally speaking, the difference matters little to this analysis. Also, the black-on-white sherds from the Mount Taylor region in Table 4 could undoubtedly be assigned one of Hargrave's type names (1962), but this

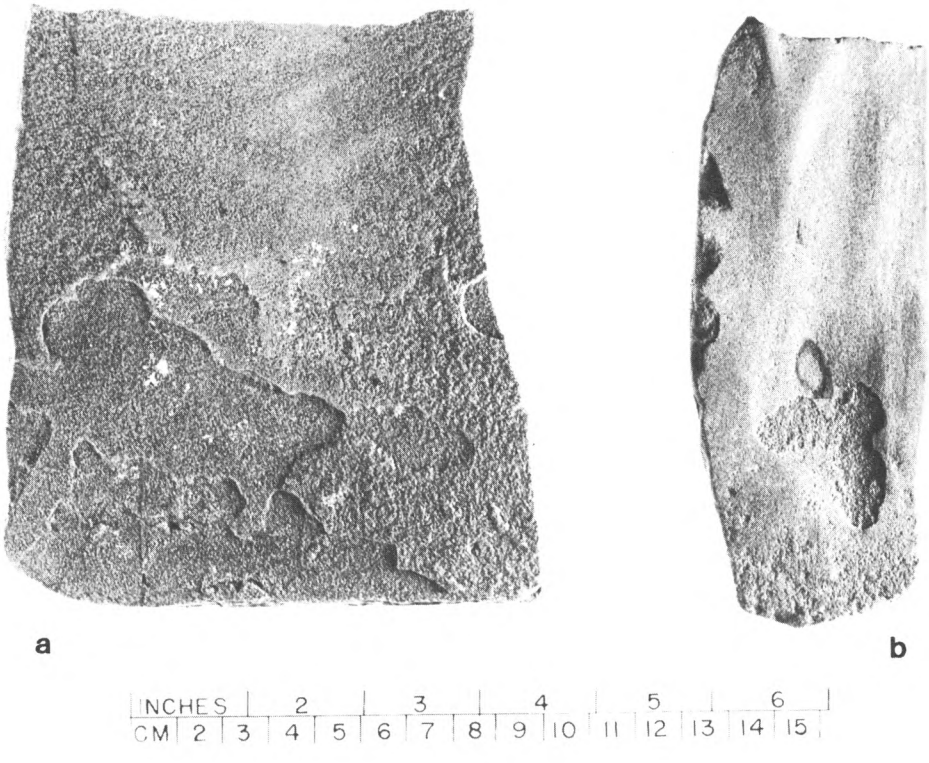

Fig. 11. Lapidary stones.

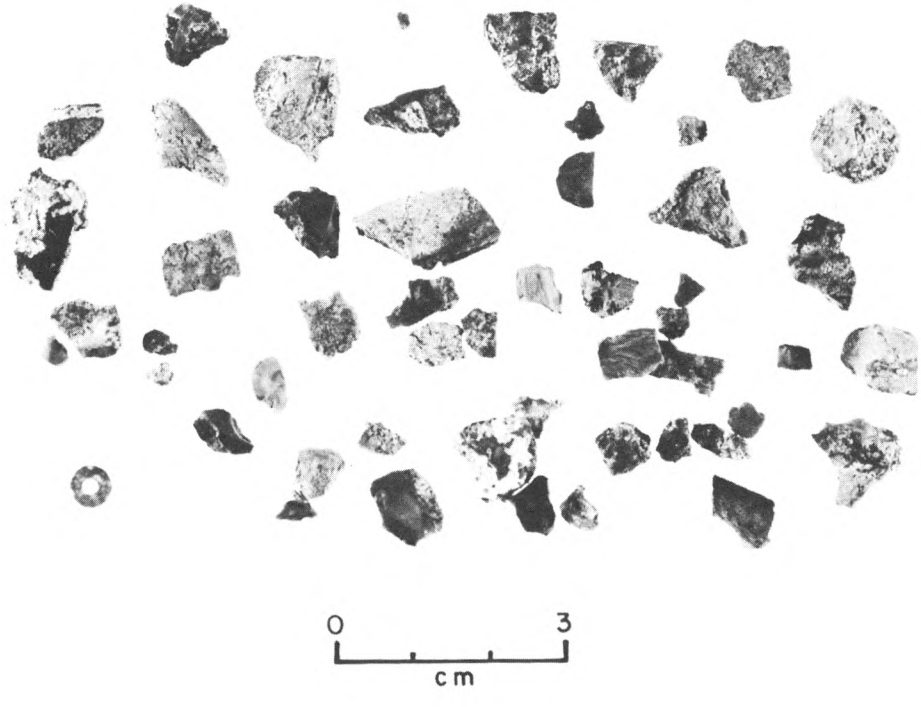

Fig. 12. Disc bead and turquoise fragments.

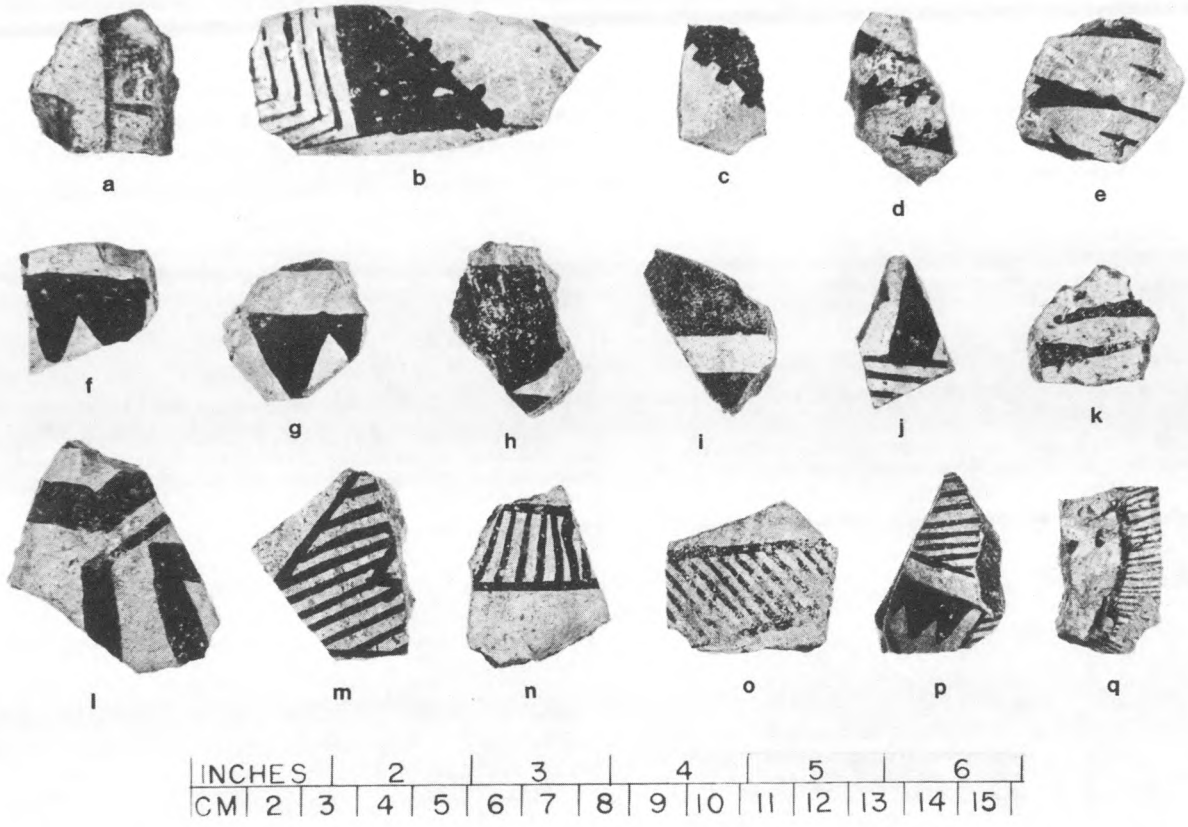

Fig. 13. Red Mesa, Late Red Mesa, Escavada, Gallup, and Chaco Black-on-white sherds. (Reduced 70% of actual size.)

was not done for reasons of simplicity. See Figures 13 - 17.

Utility ware categories are based upon general surface treatment styles. That is, sherds denoted by wide bands are assumed to be analogues of Kana-a Neckbanded, and those bearing narrower, clapboard style banding are assumed to be essentially equivalent to Tohatchi Banded and similar, named and unnamed ceramics of the general Pueblo II - Pueblo III span. Indented corrugated sherds are classified as Pueblo II (PII) if they have the wide coils, deep indentations, and prominant relief of Exhuberant Corrugated. Pueblo II - Pueblo III (or PII-III) sherds have narrower coils and generally less relief than the PII style but greater relief and somewhat wider coils than the flattish indented corrugateds of the Pueblo III (PIII) group. While these categories are subjective, they do provide a characterization of temporal distinctions, assuming essential accuracy of unilineal surface treatment development in Anasazi utility ceramics. See Figures 18 - 20.

The initial examination of the collections showed a major Late Developmental Period affiliation (A.D. 900 - 1200) and that a surprising number of the sherds are of either certain or possible western and southwestern origin. That is, on the basis of present evidence and beliefs, the vessels most likely were not made locally and probably were produced no closer to the Cerrillos area than the Albuquerque District and the Rio Puerco of the east. This is not particularly surprising about the painted wares (Lang 1982: 165), but it is with respect to the utility pottery, given the time period under consideration. Other middle to late Developmental Period sites (especially the period A. D. 900 - 1200) characteristically produce large quantities of distinctive micaceous utility

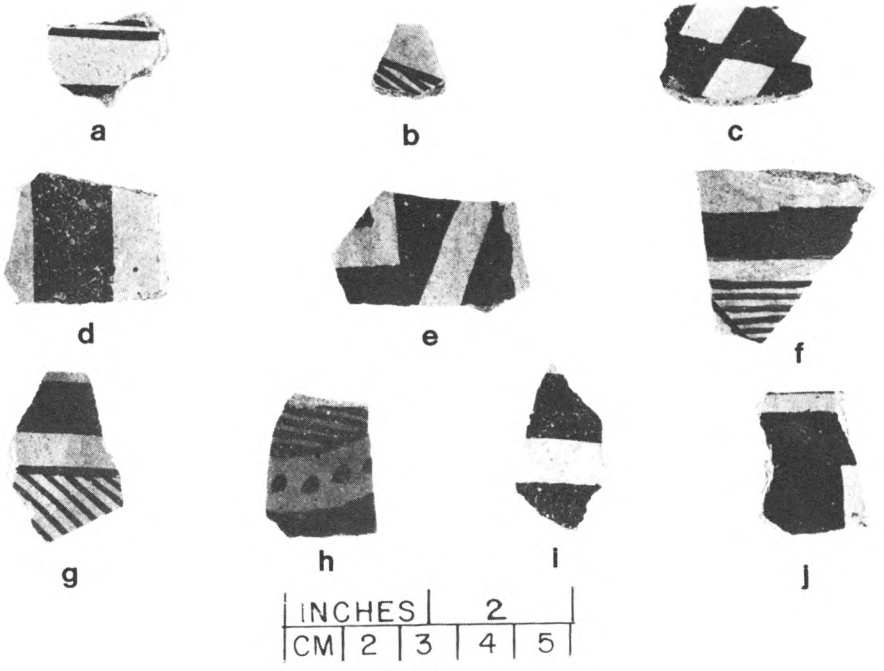

Fig. 14. Possible Snow- flake, Cebol- leta- Socorro, Cebol- leta, and Socorro Black-on-white sherds.

ceramics which soon became the hallmark of Rio Grande utility pottery, even into the historic period (cf. Mera 1935).

The major identifiable painted ceramics are four in number and include Late Red Mesa and/or Escavada B/w, Gallup B/w, and Socorro B/w (Table 3 & Figs. 13 & 14). All four are fairly well represented in all of the site collections. Late Red Mesa, Escavada, and Gallup sherds include pastes typical of both the Gallup-Chaco and the Mt. Taylor regions. That is, the former pastes are denoted by a dense clay with a sub-blocky to blocky fracture and the latter by the presence of prominent, large, angular clay plates which result from incomplete grinding and soaking during the preparation. Other, sporadically occurring types are 10 in number and include White Mound(?), regular Red Mesa, Chaco, Reserve(?), Snowflake, Cebolleta, and Chupadero B/w's a: Puerco, Wingate, and Puerco/St. Johns B/r's (Figs. 14 & 16). Seven unidentified sherds are carbon-painted black-on-whites which lack attributes that readily allow their classification as to a known type (Fig. 15). Four are from Site #2, two are from Site #4, and one is from Site #6. The possibility that one or more of these sherds relate to Chaco-McElmo B/w should be noted.

The only definitely identifiable, locally made PII-III decorated type is Kwahe'e B/w which is present in small numbers at four sites. In addition, a Late Red Mesa B/w sherd from Site #6 has a Rio Grande-like paste and probably was made in the region (Fig. 17).

Utility pottery possessing the characteristics of western products (dense, sub-blocky to irregular fractures and various kinds of sandstone/sand tempers in very light gray to white clays, frequently with carbon streaks) dominates these

assemblages from all sites. Although a range of variation in surface treatment is present - representing the Pueblo I through Pueblo III styles - the PII-III and PIII styles are clearly dominant at all sites. Among these, one sherd of Captain Tom Corrugated and four sherds of Hunter Corrugated (trachyte-tempered types from the Chuska Valley of northwestern New Mexico) have been tentatively identified. One Hunter Corrugated sherd comes from Site #6 and the rest are from Site #2.

Locally made utility pottery is more common than locally made painted wares. One or more sherds are present at each of the sites, though, as noted earlier, they are far less abundant than known or suspected western products. As mentioned earlier, locally made painted and utility sherds were specifically sought at each of the Bronze Trail sites. Even with this emphasis, a total of only 48 sherds of known or suspected local origin could be found as compared with 210 sherds of known or suspected western origin and 32 sherds of undifferentiated and unidentified types (Table 4). These figures, expressed as percentages of all site collections as a whole are: 17%, 73%, and 11%. Unless the contemplated detailed analysis shows otherwise, painted and utility sherds of western origin clearly dominate the assemblages at all six sites.

Lithics

Chipped stone was grab-sample collected for representativeness of color and material type. All sites, excepting #1, produced a wide range of colors in seven material types: chert, chalcedony, silicified wood, siltite, quartzite, basalt, and porphory (Table 5). Of these, the cherts and chalcedonies are usually dominant, though, as collected, the other materials are well represented at Site #3. Site #1 produced only two flakes, a situation mirrored in all material culture at this site. All items collected are flakes, flake fragments, or shatter.

The cherts show a moderate range in color varieties. Base colors include white and various shades of gray. Inclusions are blacks, grays, oranges, reds, yellows, and browns. Both red and red and gray varieties are not common. A number of chalcedonic cherts, all from Site #4, are present. In general, most (ca. 90%) of the cherts are of good, knappable quality and show little graininess, internal fractures, or internal textural variations.

The chalcedonies are also of good quality for the most part. Base colors are clear, white, and gray with either no inclusions or else white, gray, red, orange, black, or brown ones.

Silicified woods include gray, brown, black and gray-brown varieties. Siltites, or silicious siltstones, come in gray-green, white and gray, and gray. Quartzites are light gray or dark gray, green, and red. Basalts are usually fine-grained and black, and the porphories are of the medium gray type used for mining tools (see above).

Two salient features of the chipped lithic collections should be noted. First is the total absence of obsidian. Second, not one complete or fragmentary projectile point or projectile point preform, biface, or any other formal tool was found. This is in spite of the fact that specific searches were made for these items on several occasions. Only two of the lithics showed some form of intentional retouch and/or thinning, but the purpose of each, if other than knapping practice, is unclear.

Turquoise

Fragments of turquoise are common

on all of the sites, especially Site #2 - #6. The pieces, which range in size from a pinhead to some as large as several millimeters across, come in several forms. Some are exposed on the parent rock, others are fragments of vein material removed from the rock, and still others are partially worked pieces. The ground and/or shaped specimens are uncommon among the collections. Colors noted included various shades of green, blue-green, and blue. Fragments of the distinctive whitish-yellow-orange parent rock, some ranging up to several centimeters across, can be found scattered about the sites.

Turquoise and turquoise matrix specimens were collected from all of the sites (Fig 12 and Table 6). All specimens observed at Sites #1 and #2 were collected, but those from Sites #3 - #6 are only samples of those noted. Clearly, the extraction of this material from the parent rock was a major activity at the sites.

Dating the Sites

Many of the pottery types recovered from the Bronze Trail Site Group are reasonably well dated by tree-ring evidence (Fig. 21). The dates, taken from Breternitz 1966, cluster in the 11th and early 12th centuries A.D. for the main occupations of all sites. The presence of White Mound(?) B/w at Site #3 and Kana-a Gray ("wide banded") at Site #4 suggests brief occupations before A.D. 900. Conversely, the San Clemente G-P sherd from Site #6 and the Jemez(?) B/w sherd from Site #4 suggest brief occupations post-dating A.D. 1300. An attempt to delineate further chronological refinement from the present collections would not be statistically reliable because of the nature of the sampling procedure.

Discussion

Late Developmental Period sites in the Santa Fe District, excluding the two anamolously large sites of Arroyo Negro (La 114) and the Pojoaque Grant Site (LA 835), may be described as small pueblos of one to several rooms each with rather insubstantial walls of adobe or possibly jacal construction. Frequently, all that remains in the way of surface evidence is a very low, almost imperceptible mound with an occasional rock alignment that marks the cobble foundations so common to these structures. Those which have been excavated are usually no deeper than 30 to 60 cm. (modern ground surface to floor) (Smiley et al. 1953: Plate III; McNutt 1969: Fig. 2; Skinner et al. 1980: Figs. 18, 21, and text) with depths of only 10 or 20 cm. being common. Pit structures associated with the surface rooms can be quite deep and are usually thought to be kivas. At least one instance of a room-block kiva has been excavated (McNutt 1969: Fig 2), and others are reported at LA 835 (Stubbs 1954).

Rather than enumerate a long list of material culture traits of Late Developmental sites, we will comment mainly on aspects that contrast significantly with those of the Bronze Trail Site Group. Readers desiring more detail are referred to the appropriate sections of McNutt (1969) and Skinner et al. (1980). The typical late Developmental Period site produces a number of metates and manos, various other types of ground stone artifacts, projectile points and preforms in abundance, painted ceramics of both local and imported types, and locally made utility wares, which normally constitute 80-90% of the total ceramic assemblage. Turquoise in any form is uncommon. Research indicates that most Red Mesa B/w-like ceramics were imported (Lang 1982: 165), and Kwahe'e B/w, frequently

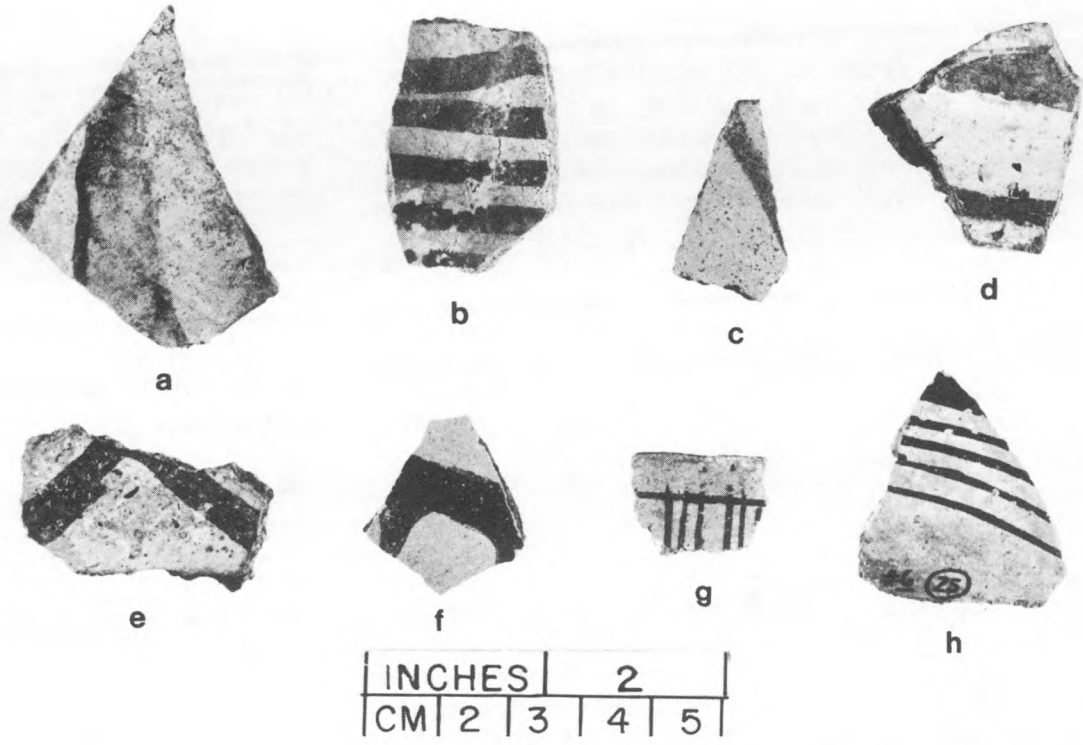

Fig. 15. Unidentified carbon-paint and mineral-paint Black-on-white sherds.

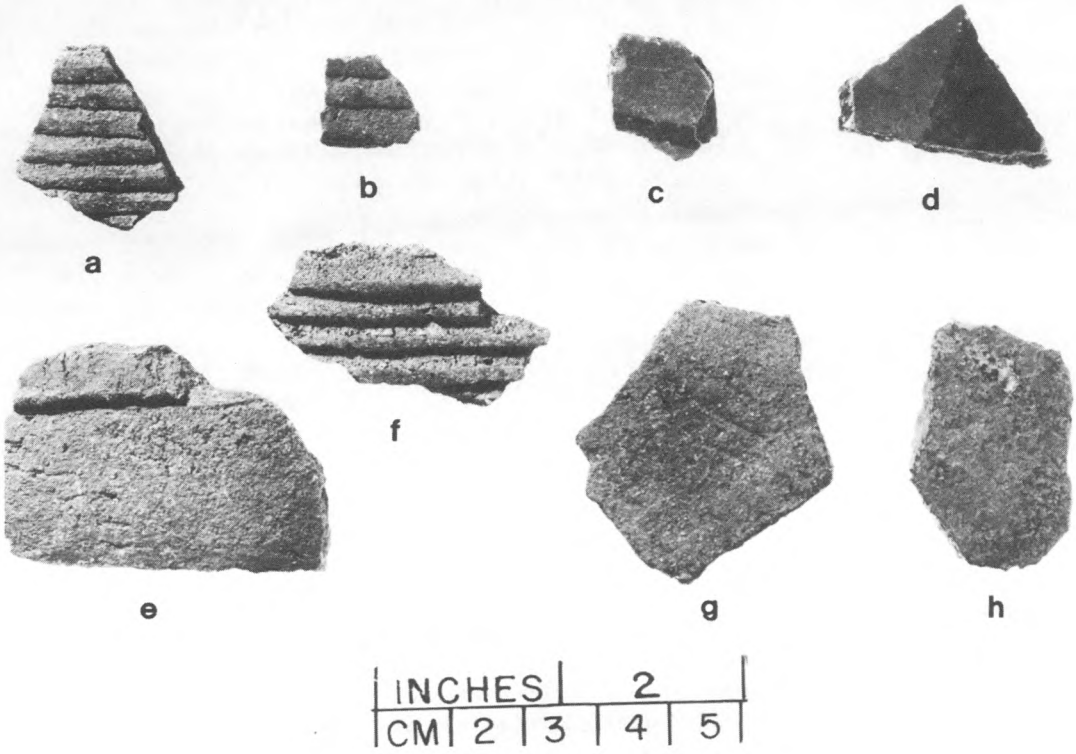

Fig. 16. Pilares Fine-banded, Puerco- St. Johns Black-on-red, Puerco Black-on-red, unidentified brown clapboard, and plain brown sherds.

referred to as the Rio Grande cognate of Gallup B/w (McNutt 1969: 100; Lang 1982: 175), was made locally. Thus, early Late Developmental peoples apparently imported most of their decorated wares, whereas those of the terminal Late Developmental were making them. Although the reported excavations do not always convey the impression, Late Developmental sites frequently produce large numbers of projectile points and projectile point preforms in surface contexts (Laboratory of Anthropology, ARC site collections).

By of way contrast, sites of the Bronze Trail Site Group are standouts with regard to the prominence of the pueblo rubble mounds (cf. Mera 1935: 7). True, this is in large part because substantial portions of the walls are masonry. True also, rock is fairly abundant in the area and good building clays (adobe) are not, at least insofar as we are aware. However, the exposed sections of masonry clearly evidence skill and knowledge in their construction, for the builders carefully selected and fitted the oddly shaped rocks with virtually no mud mortar. This kind of skill cannot normally be attributed to persons unfamiliar with rock-building techniques.

The artifact inventory for the Bronze Trail sites is remarkably different as well. Only one, lightly used metate fragment has been identified at the six sites, and not one projectile point or preform, complete or fragmentary, has been found despite intensive efforts to locate such artifacts. In fact, artifacts other than lapidary stones and mining tools are uncommon at all of the sites, indicating that the normal day-to-day subsistence activities and tool maintenance were either not being carried on or else that they were a very minor activity at best. Indications for full support systems are lacking. Turquoise, mostly in the form of exposed veins on parent rock, veinlet fragments freed from matrix, and partially worked pieces, is abundant on all sites. Parent rock lacking turquoise is also common, indicating that a certain amount of promising, but ultimately nonproductive material was being hauled to the Bronze Trail sites for processing.

The ceramic assemblage of each site contains types known and reported for Late Developmental Period sites in the Santa Fe District. Thus, the presence of Red Mesa B/w, Late Red Mesa/Escavada B/w, Gallup B/w, Socorro B/w, Puerco B/r, Wingage B/r, etc. is not surprising. What is surprising, and of significance, is the fact that locally made painted ceramics (primarily Kwahe'e B/w) are uncommon in a period when they are normally dominant elsewhere in the upper Rio Grande valley. Add to this the fact that most of the utility wares were made elsewhere (i.e., to the west and southwest) and imported to the sites. As the situation now stands, apparently 73% or more of the ceramic assemblage came from outside the Santa Fe District. Though some of the vessels came from as far west as the Chuska Valley and the Gallup/Chaco regions, current information suggests that the bulk of them came from the greater Mt. Taylor region, potentially including the lower reaches of the Rio San Jose valley and the northern Rio Puerco valley of the east (from the vicinity of Interstate Highway 40 and north) Fig. 1).

Last, the Bronze Trail sites are located in hilly terrain lacking arable soils of quality and quantity. Agriculture on a subsistence level would not have been productive, and there are far better locations within a kilometer or more of the sites that apparently were not used at this time.

How does all of this compare with

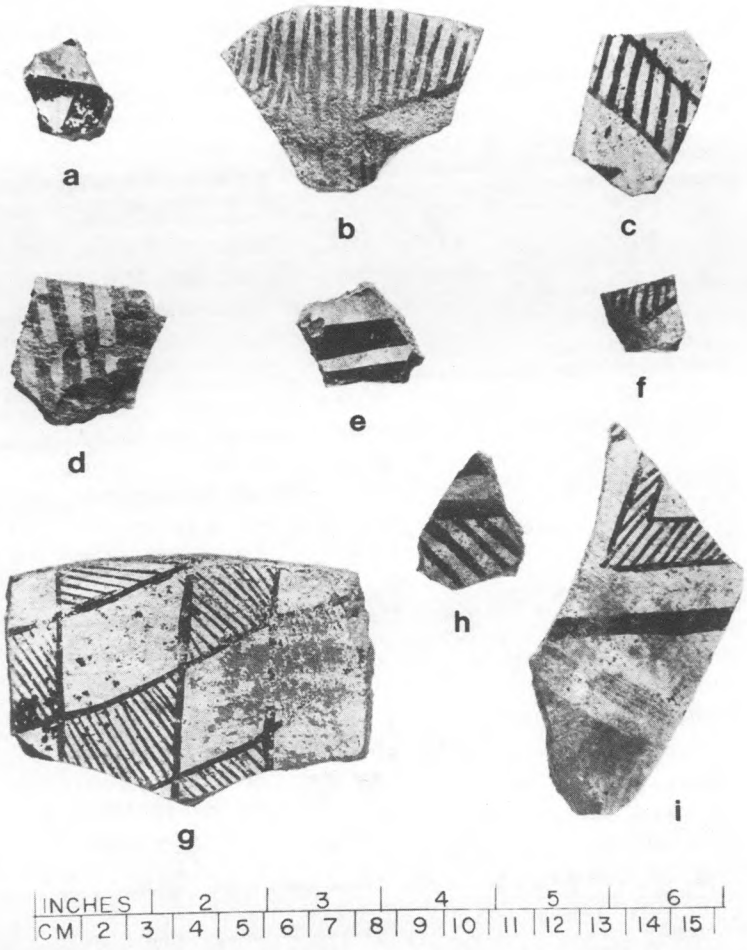

Fig. 17. Rio Grande-made Late Red Mesa (or Chaco II) and Kwahe's Black-on-white sherds.

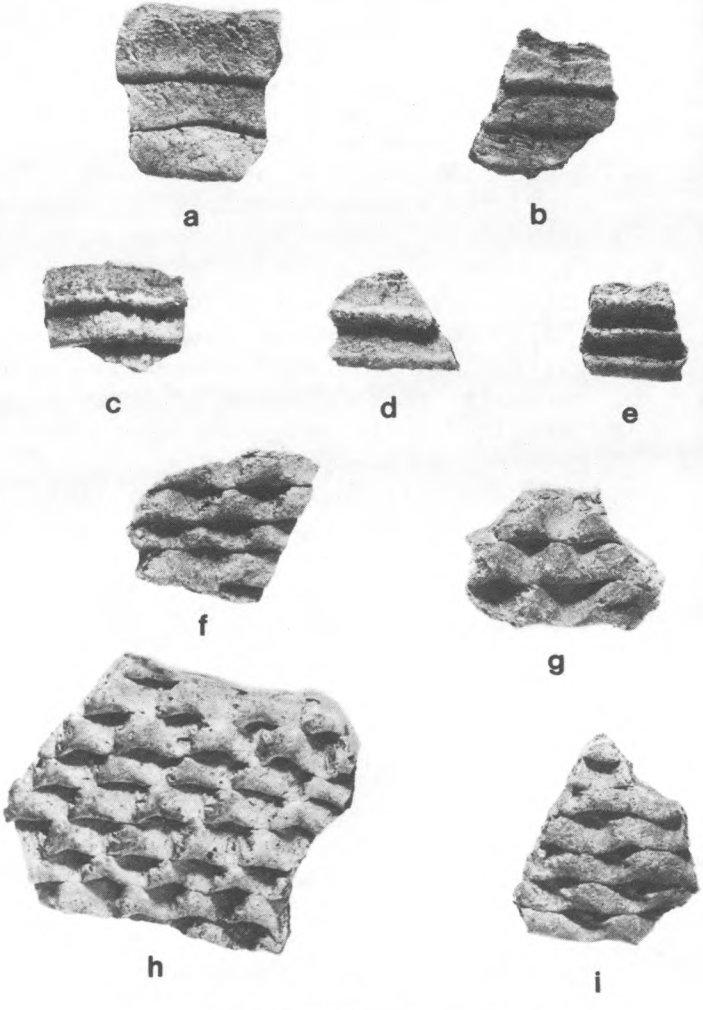

Fig. 18. Western utility wares: wide-banded, clapboard, and Pueblo II corrugated sherds.

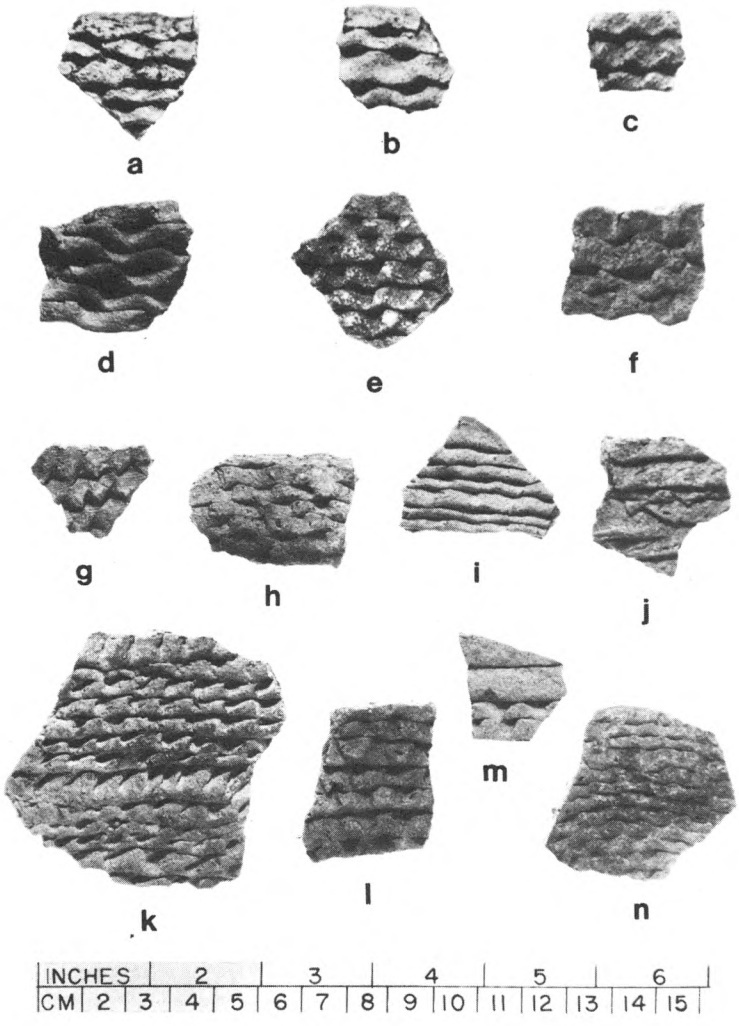

Fig. 19. Western utility wares: Pueblo II-III corrugated and Pueblo III corrugated sherds.

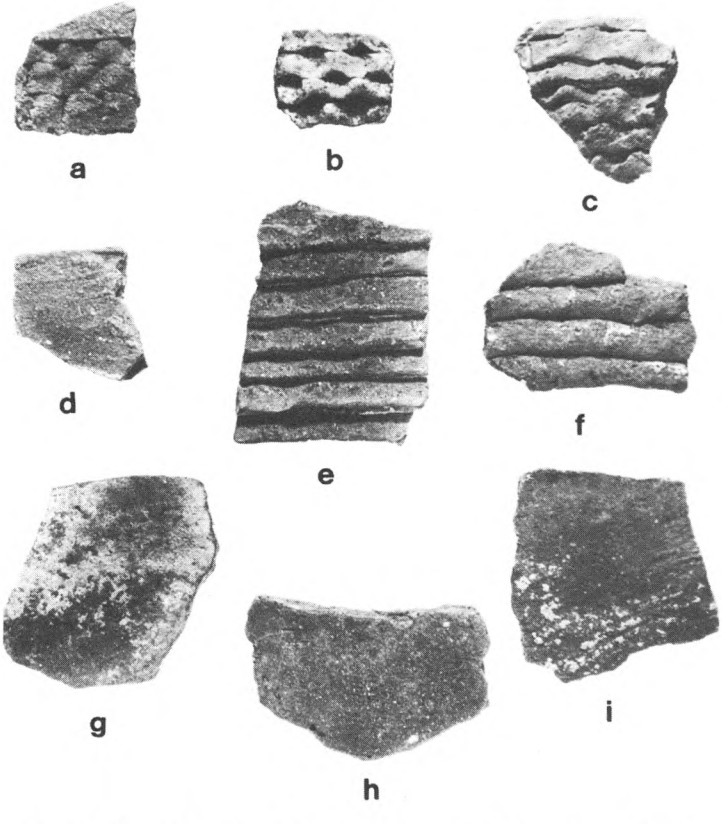

Fig. 20. Rio Grande-made utility ceramics.

the archaeology of the greater Mt. Taylor region? A perusal of the literature shows masonry architecture to be common and the 11th and 12th century ceramic assemblages to be dominated by Red Mesa, Escavada, Gallup, and Chaco-McElmo B/w's (and/or their local cognates; cf. Hargrave 1962) and Puerco and Wingate B/r's, among others. Socorro B/w is also common in the eastern part of this region (cf. Tainter & Gillio 1980 and references therein). This region may well have been the source of contacts and influence of San Juan Basin societies on Rio Grande settlements starting as early as the A.D. 800s (Lang 1982: 164). One route of this contact was up the Rio Puerco of the east, over the drainage divide into the Rio Jemez, and down that stream to its juncture with the Rio Grande. This physical connection was open for several centuries as demonstrated by the distributions of several pottery types including Red Mesa and Kwahe'e B/w's (McNutt 1969: 62ff; Tainter & Gillio 1980: Table 5).

Furthermore, a number of Chacoan outlier sites - namely, Guadalupe, Coyotes Sing Here, Casamero, Casemero Lake Group, Andrews, Kin Nizhone, El Rito, the three Haystack sites, San Mateo, and Las Ventanas - are present in the region, especially in the Rio San Jose valley and its tributaries west of Mt. Taylor (Marshall et al. 1979: 12a; Tainter & Gillio 1980: 102-103). Three of these outliers - Kin Nizhone, El Rito, and San Mateo - are connected both among themselves and with Chaco Canyon by a network of roads, suggesting that they were "closely linked with the Chacoan Interaction Sphere" (Tainter & Gillio 1980: 74). Although many aspects and details of these outliers are in need of elucidation, current data indicate that at least some of these outliers (Andrews and Casamero) saw rather intensive working of turquoise (Mathien 1984: 182; Lester & Neller in Tainter & Gillio 1980: 105; Warren & Mathien 1985: 122).

Summary and Conclusions

In summary, several aspects of the Bronze Trail Site Group set it apart from other Late Developmental Period sites in the Rio Grande. Although the degree of significance is arguable, the masonry construction is quite at variance. Additionally, there is an absence of what might be considered to be "normal" subsistence-related artifacts (manos, metates, projectile points, projectile point preforms). This evidence, plus the site locations away from arable land, indicates that the occupants were not engaged in subsistence pursuits to any great degree. On the other hand, the dominance of tuquoise debris, lapstones, and mining tools indicate the procurement and initial working of turquoise to have been the main activity at the sites. Most of the painted pottery and a large percentage of the utility pottery was imported from outside the region.

At the present time, the ceramic evidence indicates primary ties of the Bronze Trail sites with sites in the greater Mt. Taylor region. The presence of several Chacoan outliers in this region, including the upper Rio Puerco Valley of the east, and ceramic and roadway evidence indicate rather close ties between them and Chaco Canyon. Also, current information shows that at least two of the Mt. Taylor region outliers engaged in intensive turquoise working, a phenomenon which is also true of several sites in Chaco Canyon.

Thus, a link in turquoise traffic between the Cerrillos source and Chaco Canyon is quite viable on grounds other than by direct turquoise sourcing. Furthermore, this link extends through the somewhat circuitous route

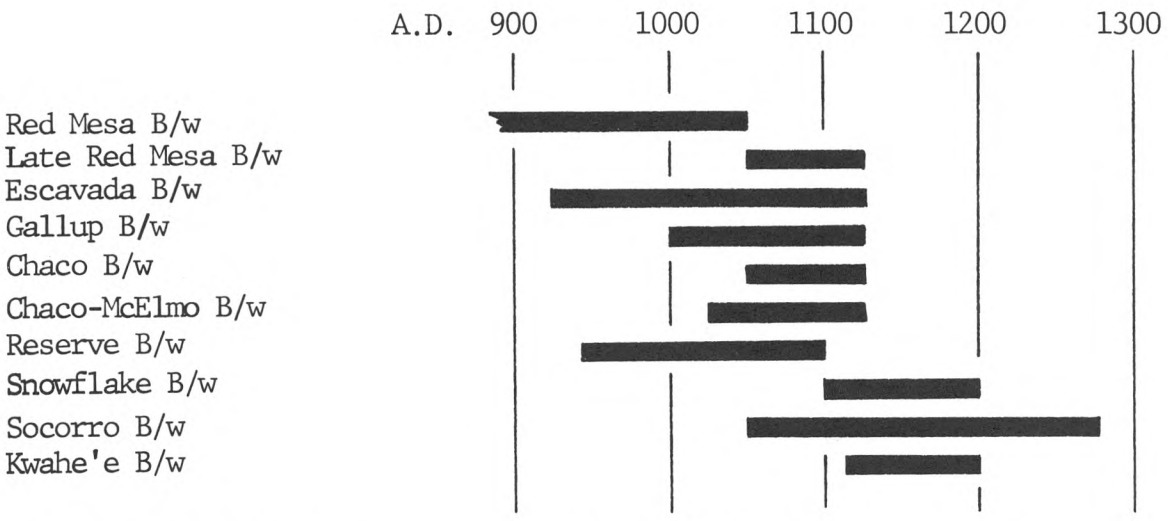

Fig. 21. Tree-ring dates for selected pottery types.

via the Mt. Taylor region. The Bronze Trail sites are anamolous with regard to contemporary Rio Grande sites. As far as can be determined from survey data, they are special activity loci for the extraction and preliminary processing of turquoise from the Cerrillos Hills. We therefore propose that the Bronze Trail sites were established and used by miners from the greater Mt. Taylor region.

Before this proposition can be accepted, several points must be investigated. These can be outlined as follows:

(1) The Bronze Trail ceramics must be more thoroughly studied to confirm, or negate, that the bulk of them were traded in from the Mt. Taylor (or any other) region. Plans for such studies are currently being formulated.

(2) Turquoise sourcing of Chaco Canyon and Mt. Taylor region samples must be completed to confirm, or negate, that Cerrillos turquoise was being used in those places.

(3) Much more will have to be learned about the Bronze Trail sites to determine whether the observations, made under survey conditions, are accurate. That is, are subsistence-related artifacts either totally or largely lacking?

(4) If #3 holds true, how were the Bronze Trail occupants supporting themselves during their mining activities? Did they bring their food with them (not considered likely except on a very limited basis) or were they obtaining it from local peoples (and hence, the presence of the few locally made pottery vessels?)?

(5) Why are the Bronze Trail sites located so far from the mines (1 km. and more)? Why are they located in hilly terrain and in the opposite direction from the indicated "homelands"? (cf. Frisbie 1983: 221)

(6) If the Bronze Trail site

occupants were "outsiders" to the Rio Grande populations, how, if at all, did they relate to the local peoples? How did they relate to the occupants of LA 835, the Pojoaque Grant Site north of present day Santa Fe?

While the answers to these questions, and doubtlessly others to follow, require attention in future research, it is clear that archaeologists now have the sites at hand with which to answer several important questions concerning the dynamics and relationships of the Chacoan Phenomenon.

Acknowledgements

We would like to thank Steve Lekson, Joan Mathien, and Curt Schaafsma for commenting upon an earlier draft of this report. The artifact photographs were taken by Nancy Hunter Warren of the Laboratory of Anthropology, Museum of New Mexico staff.

Laboratory of Anthropology
Museum of New Mexico
Santa Fe

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TABLE 1 : SITE DESCRIPTIONS

Site #/ LA#	Elevation	Site Dimensions	Est.# Rooms	Wall Construction	Kivas	Est.Artifacts
#1, LA 53452	1884 m.	40 m.E-W,30 m N-S	3	Masonry lower, adobe upper ?	?	low 10's
#2, LA 53453	1890 m.	40 NW-SE,25 NE-SW	7	Masonry lower, adobe upper ?	?	low 10's
#3, LA 53454	1878 m.	60 NE-SW,30 NW-SE	6	Full-height masonry	1	100's
#4, LA 53455	1875 m.	45 NE-SW,25 NW-SE	7	Masonry lower, adobe upper? in 4 rooms; 3 jacal with rock bases	?	high 10's
#5, LA 53456	1872 m.	40 NE-SW,35 NW-SE	8-10	Masonry lower, adobe upper ?	1	high 10's
#6, LA 53457	1872 m.	75 NE-SW,35 NW-SE	2-6?	Pithouses ?	?	low 100's

TABLE 2: ARTIFACT DECSRIPTION

Tool Type	Shape and Modifications	Material	L.	W.	T.	Wght	Remarks
Mining Tool (Fig. 10d)	Elongate with lenticular cross-section; edge-chipped; 2 well-defined notches; no use wear.	Gray monzonite porphory	245mm.	155mm.	90mm.	5.1 kg.	Complete; Site #5 refuse
Mining tool (Fig. 10a)	Elongate with rectangular cross-section; edge chipped; slight use-wear on 1 end.	Gray monzonite porphory	265	80	75	2.8	Complete; Site #5 cache
Mining tool (Fig. 10b)	Elongate with rectangular cross-section; edge chipped; slight notches on all 4 edges; no use-wear	Gray monzonite porphory	260	65	58	1.9	Complete; Site #5 cache
Mining tool (Fig. 10c)	Elongate with triangular to oval cross-section; edge-chipped; slight use-wear on 1 end.	Gray monzonite porphory	273	82	75	2.9	Complete; Site #5 cache
Mining tool (Fig. 10c)	Oval poll and tapering bit; rectangular cross-section; 4 well-defined notches.	Gray monzonite porphory	170+	100	70	1.8+	Broken; I.O. 15 m. SE of Site #5.
Lapidary stone (Fig. 11b)	Thin slab with on edge partially ground; 1 oval grind-depression (110x30x2 mm.)	Fine-grained sandstone	135	53	8	-	Complete Site #6
Lapidary stone (Fig. 11a)	Thin slab without modification other than oval grinding depression (50x50x1 mm.)	Medium-grained sandstone	133	119	15	-	Complete(?) Site #5.

Table 3. Ceramics by site and vessel form.

		Late Red Mesa B/w. Rio Grande Paste	Kwahe'e B/w	Plain utility	Wide-banded utility	Clapboard utility	PII indented utility	PII-III indent. util.	PIII indented utility	PIII zoned utility	Totals- Rio Grande	White Mound B/w(?)	Red Mesa B/w	Late Red Mesa B/w	Late Red Mesa/Escavada B/w	Escavada B/w	Gallup B/w	Chaco B/w	Reserve B/w(?)	Snowflake B/w	Cebolleta B/w	Cebolleta/Socorro	Socorro B/w	Chupadero B/w
LA 53452	jars	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	4	-
	bowls	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	unk.	-	-	1	-	-	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
	Totals	-	-	1	-	-	-	-	1	-	2	-	-	-	-	-	1	-	-	-	-	-	4	-
LA 53453	jars	-	1	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	2	2
	bowls	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	
	unk.	-	-	-	-	1	-	2	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-
	Totals	-	2	-	-	1	-	2	-	-	5	-	-	-	-	1	-	-	-	1	-	-	2	2
LA 53454	jars	-	-	-	-	-	-	-	-	-	-	-	-	3	3	2	8	-	-	-	-	-	-	-
	bowls	-	1	-	-	-	-	-	-	-	1	-	-	2	-	-	-	-	-	-	1	-	-	-
	unk.	-	-	-	-	-	4	2	3	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-
	Totals	-	1	-	-	-	4	2	3	-	10	-	-	5	3	2	8	-	-	-	1	-	-	-
LA 53455	jars	-	-	-	-	-	-	-	-	-	-	-	-	3	1	-	5	-	-	-	-	-	1	-
	bowls	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
	unk.	-	-	7	-	2	-	-	2	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-
	Totals	-	-	7	-	2	-	-	2	-	11	1	-	3	1	-	5	-	-	-	-	-	1	-
LA 53456	jars	-	2	1	-	-	-	-	-	-	3	-	3	2	-	-	1	-	-	-	-	-	4	-
	bowls	-	-	-	-	-	-	-	-	-	-	-	1				-	-	1	1	-	-	-	-
	unk.	-	-	2	1	-	-	1	2	1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Totals	-	2	3	1	-	-	1	2	1	10	-	4	2	-	-	1	-	1	1	-	-	4	-
LA 53457	jars	-	3	-	-	-	-	-	-	-	3	-	5	4	1	-	2	1	-	-	-	-	4	-
	bowls	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	1	5	-
	unk.	-	-	2	-	-	2	-	2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-
	Totals	1	3	2	-	-	2	-	2	-	10	-	5	4	1	-	4	1	-	-	-	1	9	-

Puerco B/r	Wingate B/r	Puerco/Wingate B/r	Puerco/St. Johns B/r	Western plain utility	Western wide-banded	Western clapboard	Western smear.-clap.	Western PII indented	Western PII-III indent.	Western PIII indented	West. smeared-indent.	Western PIII zoned	Pilares Banded	Undifferentiated brown	Totals- Western	San Clemente Gl.-Poly.	Jemez B/w	Undifferentiated b/w	Undefined b/w	Undifferentiated red	Totals- Other		Totals by Site
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-5	-	-	4	-	-	4		9
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2		2
-	-	-	-	-	-	-	-	-	-	10	1	-	-	-	11	-	-	-	-	-	-		13
-	-	-	-	-	-	-	-	-	-	10	1	-	-	-	16	-	-	6	-	-	6		24
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	7	-	7		13
-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	3	-	3		7
-	-	-	-	2	-	5	-	2	4	10	-	-	-	-	23	-	-	-	-	-	-		26
-	1	-	1	2	-	5	-	2	4	10	-	-	-	-	31	-	-	-	10	-	10		46
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	2	-	-	2	-	18
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	4
-	-	-	-	-	-	1	-	1	5	8	1	1	1	2	20	-	-	-	-	-	-	-	29
-	-	-	-	-	-	1	-	1	5	8	1	1	1	2	39	-	-	2	-	-	2	-	51
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	1	3	3	-	7	-	17
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	1	-	2
-	-	-	-	1	1	1	1	1	7	7	-	-	-	-	19	-	-	-	-	-	-	-	30
-	-	-	-	1	1	1	1	1	7	7	-	-	-	-	30	-	1	4	3	-	8	-	49
-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	11	-	-	1	1	-	2	-	16
-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
-	-	-	-	-	1	-	-	3	2	17	-	1	-	1	25	-	-	-	-	-	-	-	32
-	-	1	-	-	1	-	-	3	2	17	-	1	1	1	40	-	-	1	1	-	2	-	52
-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	20	-	-	-	4	1	5	-	28
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	1	-	-	1	-	2	-	12
-	-	-	-	1	1	-	-	-	2	13	-	1	-	2	20	-	-	-	-	-	-	-	26
1	-	-	-	1	1	-	-	-	2	13	-	1	-	5	49	1	-	-	5	1	7	-	66

TABLE 4: SHERDS BY PROBABLE SOURCE AREA

	Santa Fe Region	Poss. Santa Fe Region	Possibly Western	Socorro Region	Mt.Taylor Region	Gallup/ Chaco	Other Western	Undiff./ Unknown	Totals
Site #1									
Painted,etc.				4		1		6	11
Utility	1	1				10	1		13
Site #2									
Painted,etc.	2			4			4(*)	10	20
Utility		3	6		7	8	3		27
Site #3									
Painted,etc.	1			4(**)	3	5	10	2	25
Utility	3	8	5		2	5	5		26
Site #4									
Painted,etc.				2(***)	3	5	3(****)	7	20
Utility	9	2	8		1	7	3		30
Site #5									
Painted,etc.	2			6(@)		2	8(@@)	2	20
Utility	5	3	10		1	9	4		32
Site #6									
Painted,etc.	4@@@			15(@@@@)	3	9	6(&)	5	42
Utility	2	4	5		4	7	2		24
Totals									
Painted,etc.	9	-	-	35	9	22	31	32	138
Utility	18	21	34	-	15	46	18	-	152
Grand Totals									
Numerical	27	21	34	35	24	68	49	32	290
Percentages	10%	8%	12%	12%	9%	24%	17%	11%	103%

* incl. 2 Wht. Mtn Redware
** incl. 3 brown/Pilares Banded
*** incl. 1 brown
**** incl. 1 Jemez(?) B/w

@ incl. 2 brown Pilares Banded
@@ incl. 1 Reserve(?), 1 Snowflake, and 1 Puerco/St Johns B/r
@@@ incl. 5 browns.
@@@@ incl. 1 San Clemente G-P

& incl. 1 Puerco B/r and 1 unident. red

TABLE 5 : LITHIC MATERIAL DISTRIBUTIONS

	Chert	Chalcedony	Siltite	Quartzite	Silicified Wood	Basalt	Mazonite Porphory	Other	Totals
Site #1	-	1	-	-	1	-	-	-	2
Site #2	4	9	1	-	-	2	2	-	18
Site #3	9	2	3	1	3	3	2	-	23
Site #4	6	1	1	1	1	1	-	-	11
Site #5	3	5	1	-	1	1	-	1	12
Site #6	6	7	3	1	1	1	-	-	19
Totals	28	25	9	3	7	8	4	1	85

TABLE 6: TURQUOISE DATA

	#	Weight (g.)
Site #1	7	0.4
Site #2	11	2.7
Site #3	51	13.4
Site #4	37	8.4
Site #5	41	13.4
Site #6	70	57.0

LA 4718 - AN ISOLATED KIVA ON MESITA DE LOS ALAMOS

CHARLIE R. STEEN

INTRODUCTION

One of the large research units of Los Alamos National Laboratory is the Clinton P. Anderson Meson Physics Facility (LAMPF) on Mesita de Los Alamos. During a survey of archaeological sites on Mesita de Los Alamos in 1965, prior to the construction of LAMPF, the late Frederick C. V. Worman located a ruin that he designated LA 4718 (Worman and Steen 1978). Worman described the site as a low mound 6 m. in diameter. During a subsequent survey in 1973, I described the site as a small U-shaped pueblo open to the south with a small rock-cut kiva in the plaza. My notes also mentioned probable masonry walls near the northwest corner and on the east side of the mound. So much for the physical indications shown by an unexcavated site.

In 1978, plans to expand an existing laboratory structure at the Meson Facility were approved. The work would have destroyed a large portion of LA 4718, and it was decided to excavate the ruin. Excavations were carried on at the site sporadically from March 1978 to August 1979. In retrospect it seems that seldom has so small an archaeological dig been plagued by so many difficulties; in particular by two labor walkouts and three wet periods of rain or snow.

One of the labor disputes arose because members of Los Alamos Archaeological Society had volunteered to dig part of the site and were hard at work when the labor union shop steward came and saw the society members at their task--and took his men off the job. He claimed that he would not have objected if the society members (mostly women) had been troweling or brushing, but they were also using shovels and a wheelbarrow! The second walkout was due to a general strike.

We began work at the cairn and midden (locations A and B as shown on Fig. 1), then later continued at the ruin proper.

THE EXCAVATIONS

The Cairn (Feature A)

At the north edge of the site was a small, low mound of charcoal-impregnated soil and building stones. Before work began, this feature looked like a collapsed room or a low buried cairn. It proved to be a low pile of building stones, both shaped and unshaped, in and on a midden, and we could determine no reason or purpose for the stones to be there. The midden was no more that 20-25 cm. high. Few artifacts were recovered. No reason for the existence of this pile of rocks or the concentration of ashy soil could be determined.

The Midden (Feature B)

The "midden" turned out to be a good-sized irregular burned zone that had been partly destroyed by earlier laboratory construction of a security fence. At the end of our work, the burn was approximately 2 x 3 m. in extent; the original burn was probably about 3 x 5 m. No recognizable features were noted here, only the roundish area of burned soil overlain by 10-15 cm. of charcoal-laden debris. In this mass were few artifacts.

The Mound (Features C, D, and E)

Two trenches, each 2 m. wide,

were dug across the western side of the mound, and a single trench 3 m. wide was dug through the south side.

On the west the trenches were carried to the tuff, and neither trench revealed any features. West of the central depression (the kiva) loose unconsolidated soil was found (pulverized tuff). It lay 35 to 40-cm. deep over the rock surface of the mesa. A similar deposit on the south side of the site but below the pulverized tuff, and on the stone surface of the mesa, lay a well-packed ancient occupational surface. The mound was created entirely of pulverized tuff, probably the result of the kiva excavation.

The old surface, which lay below the debris on the south side, is interesting because it suggests use of the area prior to the construction of the kiva, but no other indication of such an occupation was found during our excavation.

Near the northwest edge of the mound, the tops of several walls were seen. On excavation, these proved to be the walls of a block of four rooms (Fig. 1C). The walls rested on the tuff surface of the mesa. There was enough fallen masonry to carry the walls to a normal ceiling height, but it was puzzling that not one of the small rooms had a prepared floor, nor were the walls plastered. The only indication of use that we found in the rooms was that about half the floor of Room 2 was rather deeply burned. The appearance of the irregular burned area was that a number of fires had been built on this particular surface of rock and that none had been contained by a pit or other control. The unconsolidated (crushed tuff) covering of the mound extended to and around the walls of the rooms and indicate that the small structure was built before the kiva was dug. The fill within the rooms was of fallen masonry.

The masonry of this building was of both unshaped blocks of stone and of well-shaped stones, which seems to indicate 14th centruy (or later) construction (Steen 1977).

What was the purpose of these unfinished rooms? They appear to have been built sometime prior to the kiva excavation and were probably used during the period of the kiva--but how? The unplastered walls are in contrast to the manner in which dwelling rooms, and even some storage rooms, on the Pajarito Plateau were treated. The rough stone floors with no firepits indicate that the structure was not used as a dwelling, even for temporary shelter. There was no deposit of wood ash in Room 2, and it appears likely that the fires there were built before room construction. It gets cold on the plateau in wintertime, and there are frequent chill days during the summer months, so a fire is an imperative need for comfort as well as for cooking. In this regard we found no evidence of rooftop fireplaces such as are commonly found at habitation sites in this area (Steen 1982).

The Kiva (Fig. 1,D)

The kiva is roughly circular in plan, but it has a straight eastern face. On that side the builders encountered a north-south geologic fault in the tuff and used that easily followed line as a wall (Fig. 2). The walls were hammered and gouged from the tuff. No "bruises" were visible from the hammering, but there are some scars a foot or more in length to show where some sort of stake was used to create the vertical surface of the room. A fairly vertical wall and a symmetrical room resulted. Few features are to be seen in the structure, the floor of which is almost 3 m. below the surface of the mesa. The features are:

1. Firepit. The pit is a large one, 1 m. in diameter at the floor line and 0.9 m. deep. It was ringed by a low (2 cm. high) clay rim. At the time of excavation, the pit was filled with a hard-packed mixture of wood ash and tuff grit and then sealed with a clay cover.
2. Just to the east of the fire pit was a low (three courses high) masonry deflector, about 1 m. long and 0.5 m. high. The masonry was of poor quality.
3. The ventilator shaft ran horizontally, at floor level, for approximately 2 m., then became a vertical shaft to the ground level. No surface feature at the upper end of the shaft was seen.
4. Lying on the floor of the room, but not plastered to it, was a single, shaped building stone. The stone is of a size and shape commonly used in local masonry in Biscuit Ware times and later (Steen 1977). Between this stone and the end of the deflector there lay a small corrugated jar. The jar had been used on many a fire and was friable -- and broken.
5 Two squarish pieces of rhyolite were plastered to the floor at the base of the wall. The upper surfaces of these stones were 3-4 cm. above the floor.

Wall Features

No trace of plaster was found on the walls. The floor plaster was nicely trimmed at the wall line and there was no attempt to "cove" the edge. One notable feature of the wall of the kiva is:

1. Spirit Shaft. A narrow, shallow (roughly 6 x 6 cm. in horizontal dimensions) shaft was pecked into the wall; this extended from the floor to the existing wall top.

(I feel it necessary to explain my use of this term. During the excavation someone visited the dig and said, "You have a spirit shaft there." I nodded agreement, though that was the first time I had heard the term--then began to think of the feature as a spirit shaft and labeled it as such on drawings of the kiva. Now I cannot remember who made the remark, nor have I found published references to spirit shafts. These do seem to be important features of local kivas and there is a short discussion of them in the last section of this paper.)

2. Beam Seat. On the southwest side of the kiva is a rectangular box-like cut that could have held one end of a large roof beam. Unfortunately, on the opposite side of the kiva, the roots of a large juniper tree crumbled the tuff formation so that all traces of a possible opposite seat have been destroyed.

One disturbing thing about this feature is that if it were the seat for a beam, then roof construction was asymmetrical to the layout of other features of the kiva.

No evidence of roofing was found in the kiva fill except possibly for some charred timber fragments found 1.5 m. above the floor. That the kiva was roofed was indicated by several artifacts, notably fragments of a probable hatch cover and a large metate that were found in the fill, in positions that suggested they had fallen with roofing material.

The Garden Plot (Fig. 1,E)

This final feature of LA 4718 is a pleasure to describe because it indicates that some ancient Indians were fooled by the mound, even as I was at a much later date. When I surveyed the site, I described the stone alignments on the east portion of the mound as wall tops. At the time

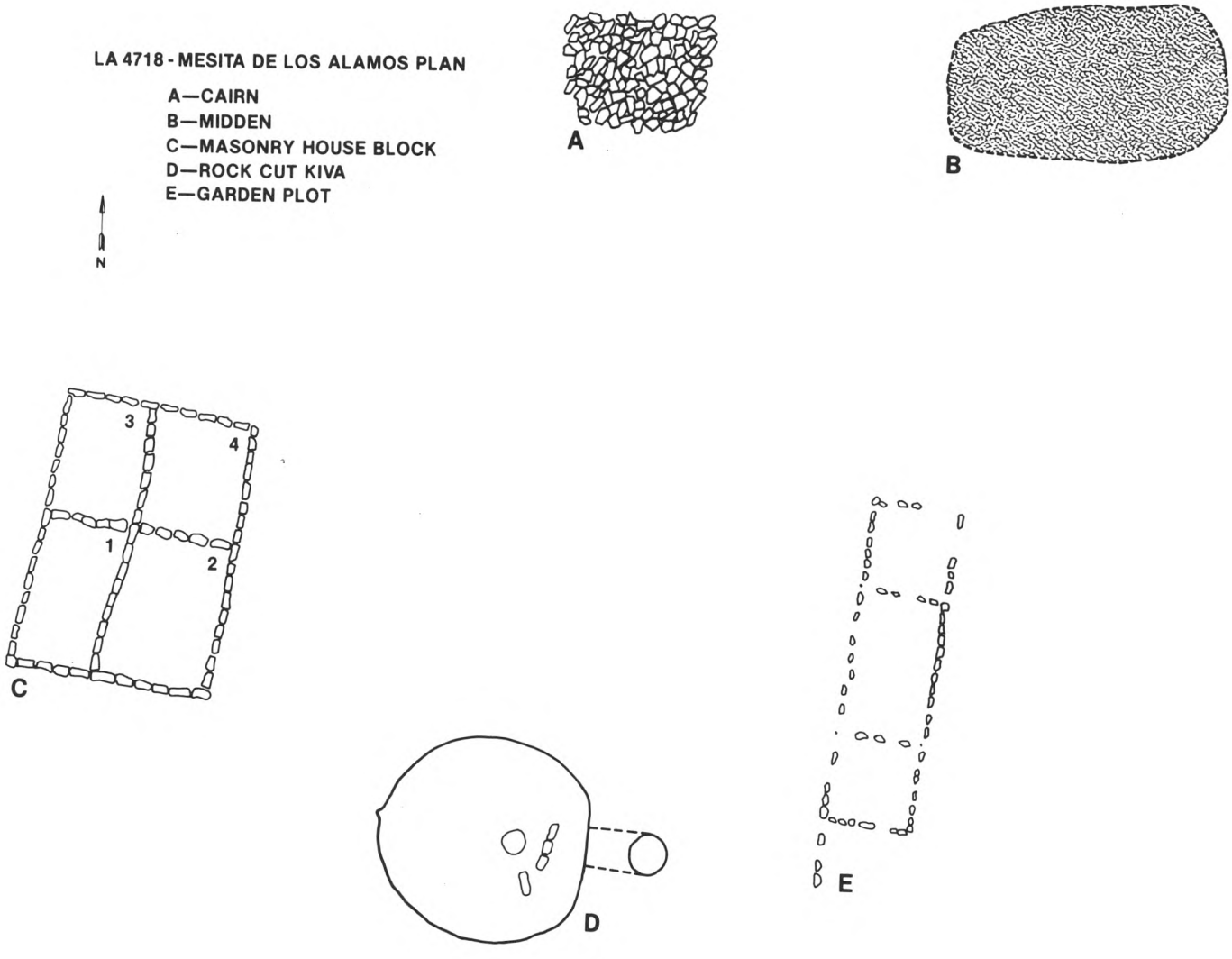

Fig. 1. LA 4718 Mesita de Los Alamos Plan.

of excavation, it was quickly seen that these were stones set into the mound in the same manner as the outlines of garden plots at other Pajaritan settlements (Steen 1977 1982). The difference was that at other sites the plots were laid on the rich humus of human refuse, but here the mound was of pulverized tuff and must have been rather poor food for cultigens.

There was no indication as to when the plot was laid out and used. Other, similar gardens were made after the habitation sites were abandoned, and it is probable that the same happened here. It is also possible that the garden was contemporary with the kiva, though this does not seem likely.

Artifacts

Pottery. I have been unable to make sense of the classification and distribution of the pottery recovered from the site (Table I). In locations where sherds could be expected to be numerous (such as the midden and in the room block), there were few pieces of pottery, but they were more numerous in the kiva fill. Most of the litter would have been washed in from the surface as the kiva filled-- but from where? No structures, at which pottery would be used and broken, were found.

One small corrugated jar, ca 15 cm. high, was found on the floor of the kiva between the deflector and the loose building stone. The jar had been in or on enough fires so that it was over-fired, brittle and broken.

Stone. There is really not much that can be said about the worked stone found in and around the kiva. The tools were uniformly large and crudely made and the rejects revealed nothing of interest.

The materials of which the stone tools were made are of interest. Five of these can be considered of local origin even though one (Pedernal chert) was obtained from quarries some 20 miles away (Warren 1974).

Pedernal Chert - This seems to have been the most favored stone for flaked and pounding tools on the Pajarito Plateau. It came from quarries in the Rio Puerco drainage west and north of the Jemez Mountains. The following tools and spalls were made of this chert:

4 chopping tools
3 hammerstones
1 flaked knife
82 flakes and chips.

Traprock - A fine-grained basalt commonly referred to as traprock is found at a number of localities on and near the Pajarito Plateau. Numerous exposures of this material are also found in White Rock Canyon:

2 flaked knives
28 flakes.

Obsidian - Is found at a number of localities in the Jemez Mountains; one of the best known is on Obsidian Ridge near the upper end of Frijoes Canyon in Bandelier National Monument. The latter site probably furnished most of this stone found at LA 4718.

No tools of obsidian were found during the excavation but 16 flakes of the material were recovered.

Rhyolite - A rhyolitic tuff (Purtymun and Kennedy 1971) is found over the entire plateau and forms a percentage of every tool assemblage from the pre-Columbian sites:

2 portions of what was apparently a single hatch cover.
1 large, crude, axe-shaped tool of unknown purpose.
1 nether stone for grinding.
1 polishing stone-suitable for smoothing or polishing a floor or similar surface.
15 flakes and chips.

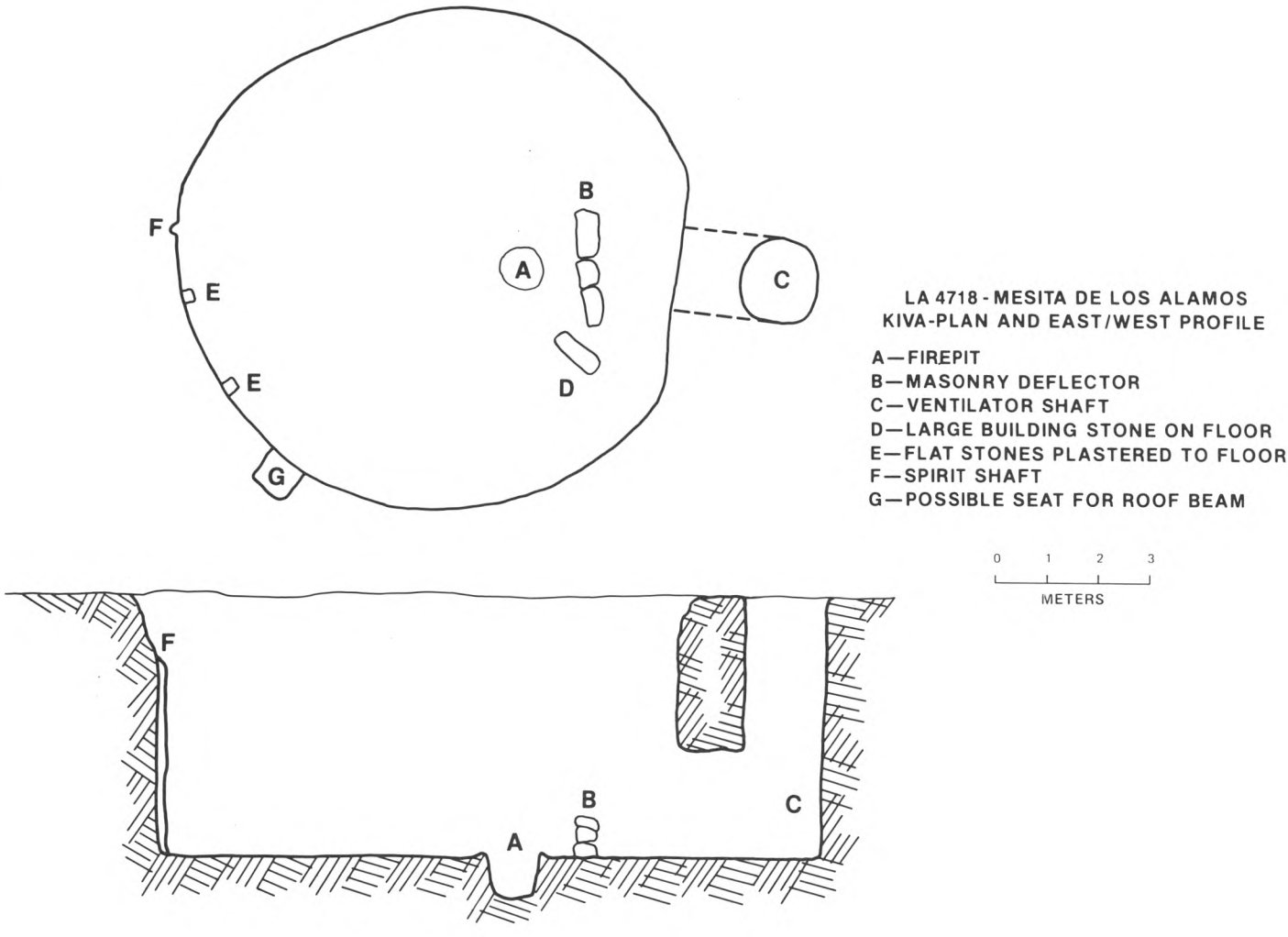

Fig. 2. Kiva at Mesita de Los Alamos.

Basalt - Is common the Plateau. It occurs in numerous small flows as well as in the great exposures in White Rock Canyon:

1 chopping tool
1 one-hand mano
1 two-hand mano
1 fragment of metate
1 nether stone for grinding
34 flakes and chips.

"Foreign" Stones - Sources of these materials are not known but it is probable that most came from the gravels of the Rio Grande or from the greate Miocene lake beds that lie above the White Rock Canyon.

Granite Stones:
4 hammerstones
5 one-hand manos
1 nether grinding stone
1 flake knife

Sandstone
1 one-hand mano
2 nether grinding stones
9 flakes and chips

Quartzite
3 flakes and chips

Quartz Crystal
1 hammer or firestone
3 flakes

Chert, dense white
1 flake

Hematite
1 small piece with abraded surface

Isolated Kivas

Throughout Los Alamos area of the Pajarito Plateau there are a number of kivas detached from room blocks or, in a few instances, isolated, at a considerable distance from any contemporary dwelling.

Approximately 200 m. east of Tsirege ruin (LA 170) is a rock-cut kiva that was probably excavated in the early 1900s, but for which no data are available. Similarly about 200 m. west of the same ruin is another rock-cut kiva (LA 13598). The latter was given a separate number, because on its west side is a small block of rooms. The rooms are unexcavated, but the kiva was dug presumably at the same time as the excavation of Tsirege and the kiva to the east. Painted pottery found at the three locations is the same: predominantly the Biscuit Wares (Abiquiu and Bandelier Black on White) with some glaze paint wares.

A common feature of the plaza sites on the plateau is a kiva east of the village and south of the entrance, if one can be determined (Steen 1977). These detached kivas are in addition to those within the plazas.

On Potrillo Mesa about 150 m. east of the big U-bend in the road to the Kappa-(Technical) Site and a few meters north of the old Buchman-Sawmill Road is a possible isolated rock-cut kiva. This site is at least a hundred meters from a habitation site. Surface indications here were indefinite enough that it was not given a site number.

More than a mile east of LA 4718 is site LA 12603. This site consists of two components. The first is a block of four rooms and a garden plot on top of a small detached mesa that lies to the east of Mesita de Los Alamos. The second is a rock-cut kiva that lies on the saddle between the two mesas. The kiva and room block are a hundred meters apart and probably were not contemporaneous. The kiva has a rock-cut ramp entrance on its east side. A similar rock-cut entrance to a kiva (but on the south side) is at a site on the north side of Canada del Buey at the edge of the San Ildefonso sacred lands. This latter kiva may or may not be associated with some nearby

TABLE I

POTTERY RECOVERED FROM LA 4718

	Santa Fe Black on White	Wiyo Black on White	Abiquí Black on White	Bandelier	Santa Fe Basket	Wingate	Corrugated	Brownware Smoothed	Brownware Coarse temper Not polished	Corrugated Micaceous Paste	Corrugated Smudged
Area A (Cairn)	6	11					41				
Area B (Milder)	7	2					31				
Surface of Kiva	12	1					5	1	1		
Room 1	21	1					35				
2	32	12					76				
3	3	2					14				
4		2					5				
Trench E of Kiva	4	5					24				
Trench S of Kiva	4	2					21				
Kiva (upper meter of fill)	38	6			1	1	177				
1 m to 2 m	72	48	7				237	1	plus 1 miniature brown vessel		10
2m to 3 m	45	129	4	1			373	3			10
								3			
Floor and 10 cm above	21	24			1		284	7		19	

small habitation sites.

There may be other similar sites, as yet unreported, on the Pajarito Plateau.

LA 4718 poses several questions. The first question of course is, "Why?" On Mesita de Los Alamos were 17 other sites (Worman and Steen 1978): six of thse sites were one- or two-room storage or field houses. The others were all small (of eleven rooms or less), and all but two had one or more ceremonial rooms within the room blocks. As is usual, we are unable to determine which of these were contemporaneous. Worman's notes indicate that he believed that at least one of them, LA 4715, was never completed.

Pottery found at these sites is constant in type--Santa Fe Black on White and Wiyo Black on White are, by far, the predominant painted wares. The Santa Fe type was, in nearly all cases, the most common.

The pottery recovered from the ruins dug by Fred Worman indicates a fairly early time in the occupation of the Plateau--middle to late 13th century. An argument for this period is strengthened by the types of wall construction he found. There was one instance of puddled adobe, and all the other sites were built of rough tuff blocks. Both these types of construction indicate early years on the Pajarito (Steen 1977). In addition, these sites all had ceremonial rooms (as opposed to kivas) built on the surface and enclosed in the house blocks. This was also true of the unusual and puzzling LA 4716, which consisted of two kiva-like surface rooms in a block of seven rooms. Although two of the somewhat rectangular rooms had firepits, I would hesitate to call them dwellings (Worman and Steen 1978).

Also, in 1974 I dug another of these small sites, LA 4722, which had no ceremonial room, but showed the same pattern of occupation as those excavated by Worman (Steen 1977).

At LA 4718 the four rooms at the northwest corner were built with masonry of mixed rough block and dressed stone. This, with the single piece of dressed stone that lay on the floor of the kiva (Fig. 2), indicates a slightly later date for the kiva than for the other sites on Mesita de Los Alamos. This is supported by the presence of a small percentage of Abiquiu Black on White sherds recovered during the excavation. These tend to place the construction of the kiva somehwere near the middle of the 14th century (Mera 1935; Hawley 1936).

Spirit Shafts

Whatever the meaning or correctness of the term "spirit shaft," this construction feature seems to have been an important one in rock-cut kivas on the Pajarito Plateau at some undetermined period in the past. Both the excavated and exposed kivas at LA 170 show the vertical groove on the west side of the room. There also were some shafts in the exposed kivas at the Guaje site, LA 12700.

Excavation records are available for two kivas in this area, LA 8681 (Fretwell 1959 and Maxon 1969) and LA 4632 (Worman 1967). At LA 8681 no vertical groove was found, but at LA 4632 Worman found a somewhat comparable feature. In a semi-subterranean kiva, Mr. Worman recorded a rather large vertical shaft, which might have enclosed a wooden post. A.E. Dittert, then of the Museum of New Mexico, told Worman that it was similar to niches on Cebolleta Mesa on the Acoma country, which are termed "Kachina niches," and it was shown in the Mesita del Buey report with that name.

The "Kachina niche" was located in the north wall of the kiva and was sealed with plaster when excavated. I can see no real relationship between

the two types of wall features. I suppose that many such details depended on the man who laid out and built the kiva as well as what was in fashion at the time. We have some modern fancy names applied to kiva features of unknown use.

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HISTORY OF THE ARCHAEOLOGICAL SOCIETY OF NEW MEXICO 1915 - 1983

ALBERT H. SCHROEDER

Although a history of the Archaeological Society of New Mexico covering the years from its founding in 1898 to 1915 was written by Hulda Hobbs and published in El Palacio in 1946, the later history of the society has not been recorded. Unfortunately for such a purpose, the files of the society prior to 1938 were consumed in a fire at Las Vegas Normal University (Lambert to Mauzy, Nov. 20, 1956). Dr. Edgar Lee Hewett had sent the records to Dr. Harry C. Gossard at the university for some purpose, which accounts for their presence there (Lambert, personal communication, 1982). However, a few items of interest prior to 1938 are found in earlier issues of El Palacio mentioned below. Some also are on file at the Laboratory of Anthropology, Museum of New Mexico, and they contain details on numerous items and subjects.

The affairs of the society between 1915 and 1930 were dominated by two officers in particular - John R. McFie, president from 1898 to 1930 (El Palacio, vol. 29, no. 1, pp. 14-22 photo opp. p. 58), and Paul A. F. Walter, Sr., treasurer from 1923 to 1946 (El Palacio, vol. 56, no. 2, pp. 49-51). Annual meetings of the society seem to have been held at various times of the year between 1916 and 1938. However, El Palacio issues of 1916 to 1920 also refer to some monthly meetings, sometimes held jointly with the Santa Fe Society of the Archaeological Institute of America, at which talks by local and visiting scholars were presented to the membership.

At the July 28, 1923 annual meeting, held with the Santa Fe Society, eligible applicants were elected to membership and plans were made for a joint meeting for the coming winter with the Historical Society of New Mexico. Two days later, the society and the Santa Fe Society of the American Institute of Archaeology, along with the Museum of New Mexico Board of Regents and the Managing Board of the School of American Research, held a memorial meeting to the late Alice Cunningham Fletcher (El Palacio, vol. 14, pp. 122-123).

At this time, the boards of these various organizations operated more or less as interlocking units of the Museum of New Mexico. For example, in one year the Museum Board elected John McFie president and Paul A. F. Walter secretary, both of whom held the same positions in the Archaeological Society of New Mexico. Walter also was elected secretary of the School of American Research by its board (El Palacio, vol. 15, pp. 52-53). In addition to the above organizational links, the museum also provided headquarters and interlocking staff for the above groups and for the Historical Society of New Mexico and the state library extension service (El Palacio, vol. 29, pp. 4-10, 139-140).

Prior to 1915, when dues were $1.00, society membership had donated funds to excavation projects in New Mexico as well as toward the rehabilitation of the Palace of the Governors where the society held its meetings. In 1916, at which time the membership stood close to 600, it pledged $200 per year for five yers to the endowment fund for the School of American Archaeology. Two years later, by resolution, members of the Santa Fe Society of the Archaeological Institute of America became members of the Archaeological Society of New Mexico, apparently on a non-dues paying basis. For a few years, the early issues of El Palacio listed the names of the dues paying members. When dues were raised to $2.00 in 1921, the society

joined with the Archaeological Insitute of America and the Toronto Museum of Canada in financing a field expedition to somewhere in Chihuahua and to acquire a collection of Chihuahua pottery (El Palacio, vol. 11, no. 11, p. 138). By the following year, $1,515 had been collected for this purpose, and a balance of $1,000 was pledged to be paid from dues received.

Though little other similar specific information on the society prior to 1938 is available by direct reference, a few items reported by the Museum of New Mexico indicate the level of society activities and interests in this period. In 1925, Dr. Harry P. Mera of the "New Mexico Archaeological Society" submitted the design for the State Flag. Two years later, the society, which by law had representation through the president as an ex-officio member on the board of the museum (El Palacio, vol. 18, p. 141; vol. 29, no. 3. p. 102), was acknowledged as the chief agency to bring about the School of American Research and the Museum of New Mexico; for contributing resources to upbuilding the Museum of New Mexico; and for providing funds from time to time for the purchase of collections and for excavations, as well as the greater part of the funds for the publication of El Palacio (El Palacio, vol. 22, no. 6, pp. 128-129). This type of activity later was reaffirmed by Paul A. F. Walter, the society's treasurer from 1923 to 1947, when he described the society in 1932 as the "mother of the societies and institutions of which we have good reason to be proud" (El Palacio, vol 34, p. 176).

At the November 30, 1929 meeting of the society, referred to as the 32nd annual meeting, Dr. Edgar L. Hewett presented plans for and the status of existing affiliated societies throughout the state, located as follows:

Mimbres - Gila Region - Silver City (existing)
San Juan Region - Farmington
Pecos Valley - Roswell and Carlsbad
Sacramento Region - La Luz or Alamogordo
Mesilla Valley - Las Cruces (existing)
Canadian River Drainage - Raton
Central Rio Grande Valley - Albuquerque (existing).

Each was to build a local museum as a branch of the state museum, and a lecture circuit was to be set up by the museum for affiliated society meetings. Members of these societies also were to receive El Palacio. Lansing Bloom was placed in charge of this program for the museum.

Several of these branches of the society, including high school archaeological societies at Roswell and El Paso, had difficulties keeping an active and interested membership in the depression period of the early 1930s. Branch societies with museums then existed at Raton, Silver City, Carlsbad, Roswell, and at the University of New Mexico. Plans called for similar societies and museums at Clovis, Portales, Farmington, Gallup, Las Cruces, and Socorro (El Palacio, vo. 27, pp. 23-24,272-273; vol. 34, pp. 11-12, 79-86; Albert G. Ely summary of June 1955). When the societies became dormant in the 1930s, this phase of the Museum of New Mexico's extension program and its support of affiliated societies was discontinued, but was revived in 1938 when Ely was placed in charge of the extension program.

Daniel T. Kelly succeeded McFie on his death and served as president from 1930 to 1955. During most of his term, there were few changes in those holding office with him. Ruth Laughlin Alexander (El Palacio, vo. 51, pp. 6, 117) was vice president (1938-1955); Reginald Fisher (El Palacio, vo. 45, pp. 18-20, 102) was secretary (1938 to

1943), followed by Marjorie F. Lambert (1943-1957); and Paul A. F. Walter, Sr., was treasurer (1923-1947), followed by Albert G. Ely (1947-1963). The latter also followed Wayne L. Mauzy (1938-1946) as executive secretary (1947-1966).

It appears that as a result of the fire that destroyed society records, the board took action to reorganize. In June 1938, proposed Articles of Incorporation were approved and by-laws were amended in keeping with a non-profit corporation status. The June 16 meeting was designated as the first biennial meeting of the incorporated society. Each such meeting, synchronized with the term of the governor of the state, was held in Santa Fe. Though records of the society, now housed at the Museum, are fairly complete since 1938, little seems to have been accomplished for the next 17 years. Most biennial meeting minutes deal only with elections, some occasionally referring to discussions on membership, lecture programs, and in 1953 the possibility of merging with the Historical Society of New Mexico.

About the only item of concern seems to have been El Palacio, edited by Paul Walter from 1913 to 1957, and the acknowledged publication "under the auspices of the Archaeological Society of New Mexico" since its inception. A publication committee had been formed in 1938. In the following year, El Palacio, became a monthly rather than a weekly, and one dollar of each subscription (dues) from branch museum members was returned to the local museums to help stimulate their growth. All other dues were turned over to the School of American Research for the publication of El Palacio up to 1955. The amounts varied from $217 (1947) to more than $1,500 (1953).

In 1947, the publication was enlarged, dues raised to $3.00 (to $4.00 in 1952), and the recommendation made to get the publication back to what it had been. The board also noted that the primary interest of the society was archaeology, but that El Palacio had grown to be the official organ of the museum. Between 1947 and 1955, distribution, which included 481 members, plus complimentary and exchange copies, ranged between 511 and 851 copies. In 1953, the society provided $3,000 for its publication, the state underwriting needed additional funds. In the following year, when El Palacio was issued monthly, 12,803 copies were printed at a cost of $3,828.47, about $ .30 a copy.

Following the resignation of President Kelly, Norris E. Bradbury of Los Alamos was elected to office (1955-1959). During his term, the board set up new policies and investigated various avenues of interest for the society to pursue. This new board revised the by-laws to allow inclusion of local societies, raised the dues to $5.00 which were to remain with the society, set up the first society bank account, and purchased El Palacio issues at a slight discount for distribution to the membership, paying its share of mailing costs to the museum. In 1955, 5,900 copies were printed for $1,606.78, but the decrease of 7,000 copies from the previous year is not explained, though the number printed was enough to handle distribution to society members. Perhaps the other copies and costs of the museum and school were not included in the above cost figure, and if so, it is a fair indication as to the amount the society had been subsidizing the publication in the past.

Unlike previous boards, and in an effort to put the society on its feet after many years of little action and accomplishments, this board added out-of-town members to its roster of trustees to provide wider representation from around the state, some of whom were elected to hold office.

Further, it was decided that the board should meet every other month and to hold membership meetings on an annual basis at which papers would be presented by members. In addition, a banquet would be held at which a speaker would present a topic of his or her choice, the presentation to be referred to as the Bandelier Lecture. The registration fee for the first annual meeting was $1.00.

Three local chapters existed at this time - San Juan, Los Alamos and Santa Fe. Other places interested in organizing and/or affiliating included Roswell, Las Vegas, Grant County, Socorro, and Carlsbad. As a means of creating more interest and becoming recognized as an independent organization, the possibility of providing a prize for best archaeological exhibit at the New Mexico Science at Socorro Fair and of sponsoring an amateur archaeological achievement award with a certificate was discussed. The board also planned to award a scholarship to a University of New Mexico student each year, in return for which the student would be expected to submit a paper for publication. The latter, however, did not result in a manuscript.

A proposed field manual for members was started, but was not completed due to the failure of several authors to submit promised manuscripts. The board also expressed a desire to have a voice in the operation of El Palacio and appointed a representative to serve on a proposed editorial committee, though little came of it. As a result, in an effort to put out news of society activities and interest, a newsletter was published, first issued in November 1955, and appeared periodically through October 1958.

Among various actions taken was one that had a major impact on salvage archaeology. In Janury 1956, on the recommendation of Vice President W. J. Keller, and then director of the Bureau of Public Roads in New Mexico, the board sent a resolution to U. S. Senator Clinton P. Anderson to provide funds not to exceed 1/2 of 1% of the cost of any project to salvage archaeological and/or historical remains on construction projects. This proposal was incorporated in the Federal Aid Highway Bill (John Dempsey to Norris Bradbury, March 16, 1956), an idea that was expanded to cover all federal or federally licensed projects with the passge of the Archaeological and Historic Preservation Act of 1974.

Up to 1956, the School of American Research had been paying the salary of the director of the Museum of New Mexico. Bradbury, as an ex-officio member of the Board of Regents of the Museum, wrote to Boas Long, the Director of the School of American Research, and to A. V. Wasson, President of the Board of Regents of the Museum, suggesting that both institutions contact the governor and request that the legislature provide funds to pay the director's salary. He also noted the administrative anomaly between the school and the museum, indicating that steps should be taken to place the museum in its proper position as a state institution.

It was during W. J. Keller's term (1959-1961) as president of the society that Senate Bill No. 147 revised the law establishing the Museum of New Mexico and separated the private organizations, including the School of American Research, from the museum. The president of the society no longer served as an ex-officio member of the museum's board, a status that was taken over by the school and continued into 1972 when the arrangement was terminated by the school.

The board now was meeting four times a year, including one at the annual meeting. Out-of-town members of the board were paid seven cents a mile on these occasions. In addition to adding a field trip to the agenda of the annual meeting, the board also

began the practice of holding these meetings in the central part of the state for easier access by the membership.

Keller was succeeded by Charlie R. Steen (1961-1963), an archaeologist with the National Park Service. Because of its separation from the museum, the society renounced its share of the ownership in the Lethridge Casas Grandes pottery collection housed at the museum, which the society helped to purchase in 1921-22.

Steen and his board spent considerable effort in dealing with the problems associated with El Palacio. The society had no representation on the editorial board, and the publication now was a quarterly and in a new format. Board discussions ranged from producing a supplement to be incorporated in El Palacio, setting up a society newsletter, to complete disassociation from the magazine.

By-laws during this period were amended by dropping the election requirement to coincide with that of the governor every two years, and the Science Fair Award Committee ceased functioning in 1962 for lack of exhibit entries at the fair.

Henry A. Jackson, a professional photographer in Aztec, and an amateur archaeologist, served from 1963 to 1965. During this period, frequent changes occurred in the editors for El Palacio which, beginning in 1964, was being printed by the Museum of New Mexico Press at a cost of $7,000 to $8,000. a year. Updated bylaws were mailed to the membership and "Invitations to Join" were printed for the current membership drive. El Llano Archaeological Society affiliated with the state society in 1963, but became dormant in 1973. Plateau Sciences Society of Window Rock, Arizona affiliated in 1964 as did Las Vegas Archaeological Society, the latter, however, ceasing activities a few years later.

The membership decided that annual meetings should move around the state on the basis of invitations from affiliated societies so that people attending could become familiar with the local host society's activities as well as see interesting sites in the area. In order to avoid financial hardships for such meetings, the board recommended that any excess funds be obtained by the host society from registration fees or other activities be turned over to the state treasurer and any losses sustained be paid to the local society by the state treasurer. In addition, the society savings account, to which life memberships were to be deposited, was not to be used except in emergencies cleared by the board. Interest from this account could be used for oprational needs.

Albert H. Schroeder, an archaeologist with the National Park Service, followed Jackson, serving from 1965 to 1971. In the fall of 1965, the editor of El Palacio informed the society that its news items no longer would be included. Early the following year, subscription rates were increased, which raised the society's cost to purchase copies of El Palacio to distribute to members to $5.40 per year (out $6.00), leaving little for operational costs ($ .60 x 350 members). Again, as in the past, discussion topics included separation from El Palacio and issuing a newsletter. The latter was adopted and issued on a periodic basis from August 1966 to April 1969.

Various proposals surfaced late in 1965 and early in 1966. Among these were a campaign to improve highway marker texts (a project later realized by action taken by the Cultural Properties Review Committee of the state), an effort to compile a history of the society since the coverage provided by Hobb's article to 1915 (accomplished herein in 1986), a

suggestion that all societies join in an effort to record rock art sites throughout the state (which was begun in 1967, James G. Bain being appointed as curator of the survey in 1969 and still so serving), a proposal for a field school under museum sponsorship (which the society started under its own direction in 1972), the need for the preparation of a standard operating procedure for the society (completed in 1967), and a drive to increase the number of affiliated societies (Albuquerque jointed in 1966, Gallup and Dona Ana County Historical Society in 1967, Midland, Texas, and Taos Historical Society in 1968).

Board actions of the late 1960s included a memorial to the legislature supporting the museum; the hiring of an executive secretary to handle the mailings of El Palacio to the membership; the decision to periodically issue, beginning in 1968, collected papers to honor retired archaeologists as a means of providing an outlet for articles on New Mexico anthropology, no longer being done to any extent by El Palacio; the opening of the society's scholarships to all departments of anthropology in New Mexico universities; permission from the Commission of Revenue to sell "Collected Papers" without charging sales tax; obtaining a nonprofit status from the Internal Revenue Service; and moving El Palacio accounts to the museum. Also considered was a possible merger with the Historical Society of New Mexico, which the latter voted down.

In the early 1970's the society applied for and obtained a nonprofit mailing permit; mailed out a letter on preservation matters to various tourist oriented organizations and publications running advertisements offering digging in ruins; and developed an amateur achievement award application form to ensure similar coverage on all candidates. Schroeder resigned because of other commitments, suggesting that the office be filled by an amateur.

John W. Runyan, a geologist in Hobbs, and an active amateur archaeologist, served from 1971 to 1975. During his first year, a letter was sent to the Secretary of the Interior, supporting the 1971 Pecos Conference resolution to update the Rules and Regulations of the Federal Antiquities Act, a revision that came about with the passage of the Archaeological Resources Protection Act of 1979. The society's corporation status, due to a failure to file, was dissovled December, 1, 1971. Officers were reelected and assets transferred and the new corporation was reinstated in October of 1973 with its amended Articles of Incorporation. The society's address, up to 1972 at the Museum of New Mexico, was moved to Albuquerque, the locale of the recently appointed executive director, James G. Bain.

Patrick H. Beckett, an archaeologist with New Mexico State University, was appointed in 1971 as editor of the newsletter, a position he held through 1977 when he no longer could devote the necessary time to the 52-page quarterly. With the publication of AWANYU underway, the board in 1972 agreed to completely dissolve its association with El Palacio. In the same year, the board offered a $100 reward on behalf of the society for information leading to the arrest and conviction of any persion in violation of historic preservation laws in New Mexico. A code of ethics also was drawn up for society members.

The first field school began operation in 1972 at the Sterling Site on ex-governor Thomas Bolack's property near Farmington. Harry L. Hadlock of Fruitland, an engineer with El Paso Natural Gas Company and an active amateur archaeologist, as field school manager, sent out notices and made all necessary arrangements to ensure success of the project. In addition,

he laid out the grid system for the site. Donald G. Villers of Bloomfield took care of lease arrangements. Francis C. Stickney, of the Midland Archaeological Society, was camp supervisor and handled the needs of the 34 in attendance for the two week session. His previous experience with the Texas Archaeological Society field school kept things running smoothly. Ben P. Robertson, of the University of Maryland and working with Dr. Cynthia Irwin-Williams on the nearby Salmon Ruins excavation, directed the excavations at the Sterling Site as field supervisor. Julia Runyan of Hobbs ran the field laboratory. Students of Eastern New Mexico University, involved in the Salmon Ruins project, through Dr. Irwin-Williams, generously provided evening lectures on geological and botanical aspects relating to archaeology, field laboratory techniques, pottery identification, and use of computer forms and survey equipment. These arrangements set the pattern for the field schools in the following years, which Harry Hadlock continued to manage until his death in 1983.

Following the first field school that summer, James Bain opened up the first Rock Art Field School with 13 in attendance. One week was spent recording the rock art at a site threatened by a project to widen highway 550 near Fruitland. These one week sessions at different locales continued each year through 1982, and in 1983 the session was extended to cover two weeks. Data derived from these sessions were submitted to the Museum of New Mexico to be recorded in its survey files. Data from field school excavations will be published periodically in "Collected Papers" and the materials recovered will be placed with the Museum of New Mexico or another institution if more appropriate.

Following these summer activities in 1972, the proposed accreditation program to develop skills in various aspects of archaeology was approved. Through field surveys, excavations, seminars, workshops, and courses, those enrolled would have the means by which to gain experience and knowledge. The certification council, composed of amateurs and professionals to review the progress of each person enrolled on submission of a request for advancement from one category to another, was appointed in January 1973 with Richard A. Bice of Albuquerque as chairman. The board also appointed Harry L. Hadlock (1972) and Albert H. Schroeder (1973) as advisors to the society, after moving that former board members could be so selected.

In 1973, dues were increased to $7.00, and a contract for publishing the newsletter, named AWANYU and in a new format, was arranged with COAS, an arrangement that continued into 1977. The society also observed a unique opportunity by presenting a plaque to Editha L. Watson, formerly of Silver City and later from Mentmore, for her 50 years as a member of the society. A life membership category also was established at this time, and Cynthia Irwin-Williams was appointed as field school advisor for the Sterling Site. Once again the suggestion that the society merge with the Historical Society arose in 1974, but nothing came of it other than that the Historical Society, which was reorganizing in 1975, revised its bylaws so that a future merger might be allowable without further bylaw changes. However, concurrent field school sessions near Gallup in 1977, at Fort Wingate and at the Heaton Canyon Site, were a joint effort of the two societies.

In 1975, an attempt was made to reinstate the scholarship program, which had been dropped in 1971 because of a lack of sufficient funds. Because of the need to support the annual publication, scholarship awards were not given between 1975 and 1977.

Robert H. Weber, a geologist at New Mexico Tech and a person much interested in archaeology, took over as president in 1975, serving into 1977. Recognizing the obligation to produce a report on the three seasons of work at the Sterling Site, the board set aside $500 to contract for the study. The proposed 1976 field school at the Los Esteros project of Southern Methodist University on the Pecos River fell through. Fortunately, the society held its first seminar separate from an annual meeting at the Ghost Ranch in 1975 under the supervision of Dr. Florence Hawley Ellis, who had been appointed as an advisor for such purpose. A similar seminar was set up to replace the field school in 1976. The Rock Art Survey, in cooperation with the National Park Service, undertook and completed a survey of Chaco Canyon National Monument, petroglyphs and pictographs between 1975 and 1980, with crews ranging in size from 17 to 42 for each one week in the field. During this period, standard operating procedures were written and approved for the certification council, and affiliated societies assisted the Cultural Properties Review Committee in its inspection of registered sites in the state.

James G. Bain (1977-1979), of Albuquerque and curator of the Rock Art Survey, succeeded Weber as president. During his term the board decided that amateurs also should be honored by the society in its "Collected Papers" series, and, moreover, that all such persons so recognized would become honorary life members of the society. For uniformity in the production of the papers, various IBM typing heads were purchased. In an effort to ensure better control of funds for the annual publication, the board in 1978 instructed the treasurer to automatically transfer $4.00 of all membership dues to the publication account; dues which were increased to $6.00 the following year.

Scholarships were reactivated in 1978 and the amount was increased to $150 per semester. John and Julia Runyan agreed to edit and print AWANYU, at which time it was decided to change its format to that of a short newsletter. To ensure timely reporting, in 1979 a schedule for subsmission of news by various officers and committees was set up. A request to publish papers from a Society for American Archaeology session had to be turned down in 1979 because of a lack of funds to begin a separate series of papers or monographs.

Arrangements in 1979 also were made with the University of New Mexico to give credit hours to those successfully completing summer field school sessions, which from 1977 to the time of this writing were held at Heaton Canyon near Gallup. This project was a short joint venture with the Gallup Archaeological Society, which was salvaging Pueblo I to III sites ahead of bulldozers in the Gallup City Dump. Material from the Sterling Site was placed in storage at the San Juan County Archaeological Research Center and Library at the Salmon Ruins. In addition, Red Rock State Park was headquarters for the field laboratory for the field school sessions. During this time, it was decided that future board meetings meet in Albuquerque in the fall, Socorro in early winter, and at the city of the host society in later winter. The spring meeting, as before, was to be at the annual meeting.

The current president, William M. Sundt of Albuquerque, began his term in 1979. The board approved the certification council's recommendation that specialists in non-archaeological but related fields be recognized in the certification program. Another request in 1980 to publish papers of

the New Mexico Archaeological Council April 20 joint meeting with the society had to be refused because of a lack of funds. A similar request the following year to publish a monograph on Southwestern ceramics was turned down for the same reason. As a result of these requests, the Board in 1983 decided to seek grants or donations to obtain start up money for a monograph series.

Julia Runyan took over the editing and mailing of AWANYU on the death of her husband John in late 1980, and the Albuquerque Archaeological Society agreed to take over the printing. Two years later, a mailing permit for the newsletter was obtained in Albuquerque to simplify the handling of the newsletter material between Hobbs and Albuquerque. Schroeder, who recently loaned a less expensive printer for the annual papers, resigned as editor (1968-1980) of the annual papers because of other commitments, and Gerald X. Fitzgerald of El Paso, and a former newspaper man, agreed to take over in 1981 for one year. Nancy Fox of the Museum of New Mexico replaced Fitzgerald in 1982.

The board in 1981 appointed four new ex-officio trustees who were members of institutions active in anthropology to assist the society, the first such appointments since 1973. In the following year, the society cosponsored the Pecos Conference at Pecos National Monument with the Museum of New Mexico, the National Park Service, Santa Fe Chapter of Archaeological Institute of America, and the School of American Research. Later, arrangements were made to publish papers from the Saturday panel discussion in the society's annual publication. A matter not considered before by the board was the possible need for liability insurance to cover field sessions, meetings, and similar activities. It received considerable discussion in early 1983 and was to be investigated with agencies in Albuquerque. A long overdue report on the architecture of the Sterling Site appeared in the 1983 papers, and an offer was also received to prepare a report on the materials recovered from the site. At this point, the society was operating in good fashion and looking forward to continued success.

Details of the operational aspects of the society on file at the Laboratory of Anthropology provide additional information on subject matter covered above. A copy of the 1938 Articles of Incorporation and the amended articles of 1973 are also on file. Bylaw changes since 1938 also are on file.

Each odd-numbered year since 1959 the nominating committee has selected two candidates for each trustee position that was open and included a brief biographical sketch for each on the ballot. The five with the highest number of votes were elected to the board for a term of four years with a limit of two terms in succession. The record of votes for the remainder of the slate was kept on file for selection in proper order in case vacancies developed between elections. The trustees so elected, with hometown, and term, as well as reasons for not completing full terms, are given as well as similar information on "also rans." Ex-officio trustees in the earlier years were automatically designated on the basis of the office each held in the Museum of New Mexico, or in the School of American Research since 1967, but this arrangement was abolished in 1973 through a bylaw amendment. Since them, ex-officios have been selected by board action from institutions with anthropological departments.

The number of board meetings required each year since 1938 have varied according to bylaw changes, but since 1955 have been held three times

a year, including the one at the annual meeting. Proxies were allowed prior to 1938, but since then a quorum had to be present to take any official action. A list of the meeting dates and locales, summary of the minutes of the biennial meetings from 1938 to 1957, and all board meetings since then are on file at the Laboratory of Anthropology. Also included are listings of all papers given at the annual meetings since 1958 plus the name and title of the talk given by the Bandelier speakers, memoraials presented, and locales of field trips. Awards given are listed elsewhere by category. Unfortuantely, attendance figures and a few other details often are lacking.

A variety of committees were set up over the years for one reason or another, some serving for a brief interval and others longer. Membership figures since the late 1930s range from less that 200 late in the year to more than 400 a year. Honorary life members, designated by board action, have a long history; some of them have been written up in El Palacio. Only those for whom a collection of papers were published automatically became honorary life members.

Information in the files on affiliated societies is spotty, but an attempt is made to briefly cover some of their activities and officers elected. Very little information seems to be available on some societies that ceased operating. The activities of a few are fairly well covered in their newsletters, copies of which, however, are not too common in the files. Currently, the following societies are affiliated: Albuquerque, El Paso (Texas), Friends of Raton Anthropology, Gallup, Grant County, Lea County, Los Alamos, Midland (Texas), Plateau Sciences (Window Rock, Arizona), San Juan County Museum Association, and Santa Fe Chapter of the American Institute of Archaeology. More-or-less sporadic in recent years have been Los Alamos, Carlsbad, and Dona Ana County Archaeological Societies.

Treasury statements since 1941 demonstrate an interesting growth from 1941 to 1955, during which time all funds went to the School of American Research or the museum toward the publication of El Palacio. Beginning in 1956, the society set up a single account for operations of all types. In 1960, a savings account was inaugurated so as to receive interest on funds not in use. Since then it has gradually grown, the interest from which can be used for operations and from which funds can be borrwed on a short-term basis with board approval. In 1974, a field school account and a certification program account also were started in order to better determine the relative solvency of each program. In 1978, a separate publications account was set up for the same purpose. In spite of its small membership, the society has faired well and is solvent, considering the number of activities in which it is involved.

Two activities relating to the annual meetings also are in the files: the Bandelier speakers since 1958, the title of their talks, and a list of Amateur Achievement Awards, along with the committees, and others considered for the award. Also listed are the scholarship awards to upperclass and graduate students of promise majoring in archaeology. Between 1959 and 1971, $100 a semester was provided, and after a gap between 1971 and 1977 when funds were not available, the award was raised to $150 a semester, and in 1980 to $300 a semester, where it has remained.

Highlights of the Rock Art Survey, first considered in 1966, to the inception of the annual field school in 1972, are on file, including dates of the schools and the number in at-

tendance. Similar information from 1953 on, leading up to the establishment of the field school excavations in 1972 and thereafter, also is available in the files, as is a listing of the members of the field school staff. The certification council, whose activities are closely associated with the field schools, normally holds its meetings prior to board meetings, only if applications for certification or specific business has to be considered. A list of such meetings and their locales is on file as well as highlights of actions taken by its membership. The field schools offer the members enrolled in the certification program the opportunity to gain experience to advance through various categories of certification to become more proficient in field and laboratory work. When experience and level of certification is high enough, those qualifying are eligible to become crew chiefs on field school excavations or assist professionals on surveys and/or excavations.

Seminars, occasionally presented by professionals at annual meetings or at the Ghost Ranch, or equivalent types of seminars or workshops by institutions or individuals recognized by the certification council, also are considered. They are recorded in a log book for final determination in establishing provisional and/or certified status categories. The categories and a list of 104 persons enrolled and their status in the program since 1973 also are contained in the files.

It is through these programs that the society attempts to build not only an understanding of archaeology and its goals, but also the need for preservation and conservation.

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