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APPENDIX

SEPTEMBER ISSUE CONTENTS

EDITORS NOTES

With this issue our Society has reached a most important milestone. The position of State Archaeologist is a working reality and from the brief reports contained in Chapter News, it is evident that our Society is active, strong, and well organized. In order to be of the utmost assistance to our State Archaeologist, we must constantly improve the technical competence of each chapter. To do this job while maintaining the enthusiasm and support of each and every member must be of primary concern of each chapter officer. I know that each chapter will be called upon repeatedly to furnish much information for the Statewide Archaeological Survey. Each chapter's response will be vital to the success of the Survey.

We are deeply indebted to Bob Edgar, President of the Northern Big Horn Chapter for the art work on this cover of the ARCHAEOLOGIST. He made available to us a wonderful portfolio of line drawings which will keep us in covers for many years.

Enjoyed very much the evening banquet and program at the Annual Meeting of the Colorado Archaeological Society. Was pleased to see Joe Bozovich and Ted Weber. Considerable interest was shown in Lou Steege's report on Happy Hollow which was a feature of the Sunday program.

LETTER FROM THE PRESIDENT

Dear Fellow Members:

Efforts of many people for many years came to fruition on October 9th of this year when it became public knowledge that Wyoming at last had an official State Archaeologist.

The 1967 Legislature authorized the position of State Archaeologist to be under the supervision of the Wyoming Recreation Commission and shall be selected from the staff of the Anthropology Department of the University of Wyoming.

At a meeting of the Wyoming Recreation Commission, Charles R. Rodermel, Director of that organization, announced the appointment of Dr. George Frison, acting head of the Anthropology Department and lifelong resident of Wyoming, to be the first State Archaeologist of the State of Wyoming.

As I sat in the meeting with Lou Steege (W.A.S. executive secretary) and Grant Willson (W.A.S. publication editor), I had a feeling of personal satisfaction upon hearing this announcement. Heartfelt thanks go out to all those who contributed time and effort to the accomplishment of this goal!

It seems, further, that we are coming closer to a solution of the problem of what to do regarding archaeological sites on land controlled by the Federal Government. There seems to be a new sense of cooperation between agencies on both the State and Federal levels.

All of the local chapters report projects in progress. New digs, however, have been scarce since everyone has been marking time waiting for action on governmental lands. There is hope now that major obstacles have been surmounted and the red-tape period is nearly over.

From the viewpoint of Archaeology, we have made some giant steps. With the help of God and the willing assistance of the Wyoming Archaeological Society members, we will now be able to advance to our goals at an even greater pace.

One other piece of good news crossed my desk. Lou Steege has been able to solve his personal problems with the Railway Mail Service so that he will be able to continue as executive secretary of the Wyoming Archaeological Society. We are glad to be able to keep Lou.

Sincerely,

Henry Jensen, President
Wyoming Archaeological Society, Inc.

October 10, 1967

FIRST WYOMING STATE ARCHAEOLOGIST APPOINTED

Dr. GEORGE CARR FRISON
State Archaeologist

Dr. Frison is well known by the Wyoming Archaeological Society members, as he was a member, himself, for years.
A native of Tensleep, he holds a Bachelor of Science degree in Anthropology from the University of Wyoming and Masters and Doctors degrees in the same field from the University of Michigan.
He is head of the Anthropology Department of the University of Wyoming.

A message to the Wyoming Archaeological Society from Charles R. Rodermel, Director, Wyoming Recreation Commission:

The Wyoming Recreation Commission is proud to announce that Dr. Frison has accepted the appointment of Wyoming's first State Archaeologist. We are most anxious to see that an organized and coordinated statewide Archaeological program be initiated.

As the State Director in charge of this vital program, you may rest assured that I will be requesting your help and advice in organizing a comprehensive program that we can all participate in.

There is no secret as to our first need, we cannot hope to have a working State Archaeologist without giving him the financial help he needs. We must begin now to gather support for the finances that will be needed.

The members of the Wyoming Archaeological Society are to be commended for their tremendous efforts in encouraging the adoption of legislation setting in motion this Archaeological Program. We must not rest on our laurels, however, for there is much work to be done.

Our first step in achieving a comprehensive statewide program will be directed to gathering an inventory of all Archaeological Sites in Wyoming. Dr. Frison will be heading this program and together we will be calling on all members of the Society from time-to-time to lend us a hand.

MINUTES OF THE ANNUAL SUMMER MEETING
OF THE WYOMING ARCHAEOLOGICAL SOCIETY
HELD IN THE FIRST NATIONAL BANK
HOSPITALITY ROOM - LANDER, WYOMING
August 5, 1967

The meeting was called to order at 1:45 P.M. by President Henry Jensen. There were 35 members in attendance with all chapters represented except Northern Big Horn Basin and Gillette.

The minutes of the previous meeting were not read due to the absence of the State Secretary.

Due to the absence of the State Treasurer Mary Garling, a motion was made by Helen Bryant that the President, Henry Jensen, read the financial statement submitted by Mary Garling from April 1, 1967, to August 1, 1967. The motion was seconded and accepted. Mr. Jensen read the report, showing a balance on hand, August 1, 1967, of $715.39. A motion was made by Norbert Ribble that we accept the financial statement as read. The motion seconded and carried.

All new members were welcomed to the Society by Mr. Jensen.

Jim Adams, Vice President, gave a resume of plans for promising places to see, following the business meeting.

Mrs. Helen Bryant of the Casper Chapter and Chairman of the Mulloy Scholarship Committee, reported they have taken no measures due to the fact that a State Archaeologist has not been appointed as yet. However, Bob Edgar of Cody has been appointed as the recipient of the Mulloy Scholarship Award for 1967.

There was some discussion on each chapter's financial support to the Mulloy Scholarship and Award Fund. It was suggested we leave the amount to the individual chapters.

Mrs. Helen Bryant recommended an amendment be made concerning the Mulloy Scholarship and Award to read as follows:

SCHOLARSHIP COMMITTEE:

Establish a three member permanent committee to be composed of the State Archaeologist, The State Society President and the State Executive Secretary with Dr. Mulloy or a representative of the Department of Archaeology, University of Wyoming, as consultant.

A motion was made by Clara Jensen that we accept this amendment. The motion was seconded and passed unanimously.

Helen Lookingbill of the Fremont County Chapter and State Librarian gave a report on the Library Board.

Henry Jensen gave a report on the forthcoming appointment of a State Archaeologist and the required qualifications for the position. This appointment will be made after September 1, 1967. George Frison has applied for the position.

It was a bit of sad news to be informed by Mr. Jensen that Lou Steege may be transferred out of the State of Wyoming and that we might have to consider a possible replacement. He will be greatly missed by friends as well as for the excellent manner in which he has served the Wyoming Archaeological Society as Executive Secretary.

Meeting adjourned at 3:15 P.M.

Immediately following the business meeting and a pause for refreshments, Jim Adams escorted the members to view petroglyphs in the Red Canyon a few miles south of Lander.

The Saturday evening meeting began at 7:30 P.M. at the Pioneer Museum in Lander, with special attention to the J. K. Moore collection, now in Lander, which had previously been in Cheyenne.

The group then adjourned to the First National Bank Hospitality Room and enjoyed an evening of seeing slides of interesting places. Jim Adams and his wife had many beautiful pictures taken on a recent trip to New Mexico, depicting the ruins of the habitat of the Zuni ancestors, Taos and various tribes, several hundred years ago, in Canyon DeChelle, Aztec and Chaco areas.

Henry Jensen also showed slides of the stone markers along the old Indian Trail in the vicinity of Copper Mountain in Wyoming. Also a picture of a rock shelter which may prove to be very interesting.

The Fremont County Chapter displayed many frames of artifacts.

A social hour was enjoyed by all.

At 8:30 on Sunday morning the 35 members met for a trip to the Dinwoody Petroglyphs. Being on the Wind River Reservation, a permit had been obtained by the Society and Joseph Engavo of Fort Washakie was our most hospitable guide for the day.

We first viewed and photographed the Petroglyphs, which are now fenced as a preservation precaution. Then our guide took us to a shaded picnic ground for lunch.

From here we visited the Dinwoody Cave next. The entrance is now supported by huge timbers to prevent cave-ins. Today we have to picture in our minds the way

it looked in its original form with two painted pictographs at the entrance, with hides over the entrance in the winter. This huge cave was the home of the Shoshoni people years ago.

The cave and campsite were excavated in the years 1938 and 1939 under a W.P.A. project and others. It is most regrettable that these valuable artifacts are not on display with a complete record of them. Our guide informed us that many of the artifacts had been needlessly lost.

From the Dinwoody Cave we journeyed on over rough mountain road for about a mile, where all the hardy members hiked on a mile or so to see the Natural Bridge. All reported "It was beautiful".

All pleasant meetings and field trips must end. About 4:00 P.M. all expressed their pleasure of an enjoyable "SUMMER MEETING".

Our many thanks to Harold Rogers, curator of the Pioneer Museum, for the many courtesies extended to us while we visited the Museum. And our many thanks to Joe Engavo; we couldn't have had a better guide and we welcome him as a new member of the Fremont County Archaeological Society.

Irene Morgan
Acting Secretary

CHAPTER NEWS

CASPER CHAPTER

Made two field trips to trace the Indian Trail north of Lysite. The first trip was postponed twice but the third time was a charm. It finally stopped raining long enough for the creeks to go down and the roads to dry out enough so that we could make it. Henry Jensen was our faithful guide.

Made another field trip in September with the Lander Chapter. However, it had started raining again by this time so not many could make the trek. With the help of some dry weather and grim determination we hope to trace this trail further. But it begins to look as though this may be a project for next summer.

Evelyn Albanese

SWEETWATER CHAPTER

Had a very interesting summer with well attended meetings and productive field trips. At the June meeting Mr. James Franks of the B.L.M. gave a highly informative talk on the preservation of sites, digging permits, and the Antiquities Law. A field trip was made to check on a bone deposit. It was decided that the bones were bison and from the location of cliffs behind the deposit that this site was either a buffalo jump or trap. On another trip to this site twenty foot grids were staked out and three exploratory trenches were dug. The results were very encouraging as eight side notched points, a knife, and retouched flakes, were screened out. The deepest find was a point three feet below the surface. We hope to be able to excavate this site in 1968.

We are still waiting for permission from the B.L.M. to test another site.

Mrs. Robert Larson

CHEYENNE CHAPTER

At our last meeting in May, before the summer adjournment, Carl Christensen, a Cheyenne contractor, presented slides from his recent African Safari and displayed spears, bows and arrows of modern native manufacture.

In June, Milt Widholm led a field trip to the Pawnee Buttes which are prominent landmarks in Southeastern Colorado. Several artifacts were found.

In July, Ralph Casner led a field trip west of Cheyenne on a tributary of Crow Creek. Many fire pits were weathering out and several artifacts were recovered, including a mano and metate.

In September, Dr. Schoondermark led a field trip to an area of rock overhangs in Southeastern Colorado near Stoneham. These were an extension of the river-laid Arikaree formation which forms the Pine Bluff escarpment paralleling the Wyoming border and terminated by South Platte River in Northeastern Colorado.

The first regular meeting in October was well attended and colored slides of Mesa Verde were shown by Milt Widholm.

Grant Willson

GILLETTE CHAPTER

Since our organization in March, the Gillette Chapter has had monthly meetings and summer field trips.

In April, Sheridan Chapter members visited us and gave some pointers. Bob Edgar and Milford Hansen, NBHB Chapter, were guest speakers at a chapter dinner in May and during the next day inspected a probable Besant bison kill we have located. Previously, collectors had dug about a hundred wide-base, corner notch points from the site. On succeeding trips chapter members screened material (including overburden) which had already been dug. Flakes and retouch flakes were abundant and we were advised by Mr. George Frison that these were every bit as important as the points themselves.

On later field trips we visited locations both east and west of Gillette where rock circles of varying sizes abound. Cairns were noted as well. One member had excavated a single grave several years ago near some of the cinder-rock circles. This yielded no artifacts but did reward him with dime-sized, flat shell beads. Of particular interest was a rock alignment reported to be several miles in length. It would take some time to trace and chart this feature as some stones in low-laying areas have been covered with sediment.

Not far from town we visited an historic hilltop which is encircled with rifle pits. Though there is no definite history of the site, evidence indicated it was a wagon train encampment where a skirmish may have occurred.

On a narrow point of one of the Pumpkin Buttes we examined and were puzzled by a sizeable stone breastwork or fortification. Again there is no history -- and in this case even the legends are absent.

Thus we are "getting our feet wet". While our list of accomplishments has yet to be started, we do have a congenial group of collectors, eager and ready to share in learning the rudiments of our science. It is gratifying and inspiring to hear new members and interested friends tell of new sites and "finds" in our area. The interest in Archaeology which we have found indicates the need for more new chapters in the State. There is strength in numbers.

As members we have only a certain amount of time to devote to this avocation, and there is much to do. We seek to protect and understand each shred of evidence of our aboriginal predecessors, for these remains are irreplaceable.

I know I speak for the thirty members of Gillette Chapter in saying we are proud to be a part, however small, of the Wyoming Archaeological Society.

William L. Barlow

FREMONT CHAPTER

In February, Flintstones met at Lander with the new officers in the chairs. Bob Edgar accepted our invitation to speak to our combined clubs. Several new artifacts were looked at and discussed and six new members joined our club.

In March, the club met in Riverton with a discussion on several places for a field trip, but it has been so stormy and cold that we have been unable to get out. Two films were shown, "Indian Families of Long Ago" and "Glimpses of the Past", which we all enjoyed. Twenty-two members and eight visitors attended.

The April meeting was held in Lander on the third Wednesday due to Bob Edgar speaking to the combined clubs on the second Wednesday. Bob Edgar's talk on the Mummy Caves near Cody was greatly enjoyed as was our visit with him after his talk. Helen Lookingbill, Betty Hutchinson and Jim Adams attended the State Spring Meeting in Casper, April 14th. Jim gave us a report on the meeting. The Flintstones gave $5.00 to the Mulloy Fund. We voted to alternate our meetings between Riverton and Lander, which makes it more convenient for both clubs. Jim Adams showed pictures of the Pictographs in Red Canyon near Lander. Five new members joined our club.

The May meeting was held in Riverton with a discussion on the slow progress in obtaining a permit for a dig we have located. The Rock Springs, Lander and Riverton Chapters are to go on a field trip near Farson to dig for fish and cane on May 21st. Twenty-four members were present.

In June the Flintstones met in Lander with President Helen Lookingbill giving a report on the trip to Farson to dig for fish and cane. Everyone had a nice time and found some nice specimens. It was decided to have the State Summer Meeting here on August 5th and 6th. Carl Lembe gave a report on McKean points which was very interesting. A field trip to the Oregon Buttes and to our dig was planned for

July 18th if the roads were passable.

During the July meeting Jim Adams reported on the trenches dug on the claim. Charcoal was found at a three-foot level. Otherwise, we didn't find much. We looked in a few other places and some found specimens.

In August the State Meeting was held in Lander with President Henry Jensen presiding. The business meeting was held, afterwhich there was a trip to Red Canyon to see the Pictographs. Lander's Museum was visited in the evening and then back to the hall for a social hour and pictures. Sunday morning at 8:30 a trip was taken to Dinwoody. Everyone had a nice time and many new friends were made.

Eva Scoggan

SHERIDAN CHAPTER

January 9: This was our election meeting. The officers for 1966 will remain: Jerry Carbone, President; Margaret Powers, Vice President; Elaine Hilman, Secretary; Gary Fry, Treasurer. There was a rotation of Directors, the two new ones, Virgil Flesher and Zane Hilman, serving with Harry Reed and Edward Zahradnicek.

We received a geological dating on the Powder River site excavated last summer. The Archaeologist at this site was George Frison who will give a report and the carbon dating later. The Geological date was 4,000 years.

Our program for this meeting was a little out of the ordinary but interesting. Mr. Jack Manly, a local resident, showed slides on northern Alaska where he was stationed with the Bureau of Indian Affairs for three years.

February 6: At this meeting several members were asked to bring an assortment of archaeological reading material, either privately owned or from public libraries. There was a short discussion on the availability of such and the benefits to be gained by members taking advantage of them. Mrs. Gary Fry gave a twenty minute summary on a recent book by Frank C. Hibben called "Digging America". This book is very interesting and well written in layman terms and covers the history of Archaeology and its discoveries in America.

There was no March meeting due to bad weather.

April 3: We discussed with pleasure the results of the State Meeting at Casper. Congratulations to Bob Edgar on the scholarship; we hope to hear much more from him. Special thanks to our local Senator, John Patton, for his help with the Recreation Bill. We are also pleased about George Frison's new position resulting from that bill. Fred Hilman showed slides of past excavations by our chapter. It was interesting to the newer members who were not familiar with the site.

April 14: Some Sheridan Chapter members went to the charter meeting of the new Gillette Chapter. Mr. Edward Zahradnicek, Mr. and Mrs. Gary Fry and Mrs. Margaret Powers were asked to give information on procedures of site reports, working of sites, etc., and publication data. We all enjoyed the meeting very much and were pleased by the organization and interest of our newest group.

May 8: We intend to prepare a display of all the artifacts from our past excavations for the viewing of the public this summer. We are also tentatively working toward another dig but no definite plans have been made. Mrs. Mildred Denson, a new member this year, and her daughter, Mrs. Pat Calbick, a visitor from Libya, showed slides and described the extensive excavations of Tripoli. Mr. Calbick is a geologist for Esso Oil Company in Libya. Mrs. Margaret Powers also showed slides on her recent trip to Mexico with the Wally Byam Airstream Caravan. The Caravan made sixteen stops in Mexico including many archaeological sites. We are planning a field trip on June 4th, weather permitting, to the Tom Adsit ranch northeast of Decker, Montana, where we will visit some Tipi Rings.

The following article is quoted from the ROCKY MOUNTAIN NEWS dated 11/16/67

APE SKULL 28 MILLION YEARS OLD REPORTED FOUND BY SCHOLAR - - NEW HAVEN, Conn. - -

Discovery of a new link in the evolution of man was announced Wednesday by a Yale University professor who led an expedition to Egypt which unearthed the skull of an ape believed to have lived 28 million years ago.

Prof. Elwyn L. Simons, a professor of geology, said the skull is eight to ten million years older than any previously uncovered and represents a "major connecting link" in the evolution of primates.

The skull, which is incomplete, was "better preserved than any fossils relating to man that are older than 300,000 years," Simons said. He described the skull as "a major stage in the documentation of the forerunners of man." The animal was found 60 miles southwest of Cairo in the Fayum Desert.

The skull was found by Grant E. Meyer, a research associate of the Peabody Museum. Encased in rock, the skull was flown to Yale for examination. When the rock was chipped away, the skull was found to be "unusually complete," missing only parts of the top and bottom and four teeth.

Researchers studied the ground in which the skull was found to arrive at the estimated age of 28 million years.

HAPPY HOLLOW ROCK SHELTER

By L. C. Steege

ABSTRACT:

The Happy Hollow Rock Shelter was a campsite with an occupation level containing an artifact assemblage of the Late Prehistoric Period. Two Carbon 14 assays from wood charcoal from hearths within the occupation level produced a range of dates from 697 A.D. ± 80 years to 1187 A.D. ± 90 years.

The Happy Hollow Rock Shelter, Site 5WL101, was located in the southwest corner of Section 1, Range 67 West, Township 11 North, Weld County, Colorado, near the town of Carr. This is approximately 12 miles south of Cheyenne, Wyoming. The site was located on lands formerly owned by the Warren Livestock Company of Cheyenne, who granted permission for the investigation and excavation. The site derives its name from the permanent sheep camp which was situated near it.

The Happy Hollow Rock Shelter was a campsite with a single occupation level containing an artifact assemblage of the Late Prehistoric Period (1). Archaeological investigations were carried out by the members of the Cheyenne, Wyoming, Chapter of the Wyoming Archaeological Society during the Spring and Summer of 1964 (2).

The general area is uncultivated. Vegetation is chiefly prairie grasses interspersed with some sage, greasewood, prickly pear cactus and other small plants. Choke-cherries and currants are found near the spring. During the time of occupation the area undoubtedly was an excellent game country including such forms as bison, elk, deer, antelope, bear, wolf, coyote, small rodents and prairie birds.

(1) Mulloy - A Preliminary Historical Outline for the Northwestern Plains.

(2) Members of the 1964 field party in addition to the author included: Mr. and Mrs. Ralph Casner, Ernest Casner, Major Henry Lloyd, Bee Steege, Mr. and Mrs. David Paulley, Grant Willson, Paula Durnford, William Edmunds, Robert Harkness, Harold Towns, Marion Towns, Mr. and Mrs. Joe Moritz, Gary Wheeler, Mr. and Mrs. Charles Rayko, John Rayko, Paul Rayko, John May, Roy Seyfang, Dorothy Roman, Dennis Real, and Joe LaRue.
Members and non-members assisting with cataloging and sketching of artifacts include: Mrs. Ray Kautz, Major Henry Lloyd, Barbara Lloyd, Ralph Casner, Grant Willson, Dave Paulley, Robert Harkness, Bee Steege, Dennis Real, Wade Porter, Marian Bartholow, Pearl Smith, Dorothy Roman, Mike McLoughlin, Mr. and Mrs. William Edmunds, Gary Wheeler, Mr. and Mrs. Charles Rayko, and Milton Widholm. The author is also deeply indebted to Dr. Paul McGrew of the Department of Geology at the University of Wyoming who identified the animal bones recovered from the site.

TERRAIN AT THE SITE

The site is situated near the top of a bluff under an erosional outlier of the Arikaree formation of the late Oligocene age. The Arikaree formation is a friable conglomerate of coarse and fine gravels compacted and mixed with a limestone cement. The talus slopes from the bluffs are composed almost entirely of disintegrated slough from the Arikaree formation. The bluffs are a portion of the Pawnee Butte escarpment which traverses the northeastern corner of the State of Colorado for some 65 miles or more.

The elevation at the site if 6050 feet above sea level. The elevation continues to rise to the west and north. To the south are the flat lands, and to the east the escarpment continues. The escarpment forms a boundary on the north and west sides of a small basin which merges into the flat lands to the south and southeast. (Plate 1A. arrow points to the Happy Hollow Rock Shelter.)

The location of the Rock Shelter afforded complete protection from northerly and westerly winds. An unobstructed view for several miles to the south and southeast was advantageous for locating game herds. Game probably formed the main diet of the occupants of the shelter.

EXCAVATION

Since there was no evidence of any human occupation visible on the present surface of the shelter, the initial exploration consisted of a small test pit, about 16 inches in diameter and 20 inches deep, dug in the area included in grid #9. (Figure 1). One complete projectile point and two fragments, two potsherds, and two fragments of a shaft abrader were recovered from this pit. Several flakes and bone fragments were also noted.

A datum point was selected and given a horizontal value of 0, and a vertical value of 100 feet. A contour map (Figure 2) of one foot intervals was made of the immediate area. A grid of 5 foot intervals, oriented to magnetic north, was established and each coordinate was marked by a stake.

Excavation began with an exploratory trench commencing at the datum and progressing northward to the wall of the shelter. This trench was dug to a depth of 5 feet to solid rock at the southern extremity. (Figure 3). No culture bearing deposits were noted for the first 7 feet in the trench. All of this area lay beyond the roof of the shelter. The formation in this area of the trench was an accumulation of large rocks and coarse and fine gravels, deposited by water action through run-offs from melting snows and heavy rains. An erosional channel from the top of the bluff is directed over the shelter into the ravine below. (Plate 1B.).

Within the shelter proper, 4 stratas were noted. The top strata was composed of dust, fine sands, and debris from pack rat nests. This strata ranged in depth from 4 to 18 inches. (Figure 3).

The second strata was the occupation level and was made up of bits of charcoal, ash, sand, bones, flakes, and artifacts. This strata averaged 2 feet in thickness in the trench and tapered to an inch or less at the western and eastern extremities of the excavated areas.

The third strata was composed chiefly of gray ash with some bits of charcoal, burned bone, and charcoal stained sand. A few flakes were recovered from this strata but no artifacts were found. This strata averaged 5 inches in depth, 8 feet in width, and 16 feet in length. It was located directly below the edge of the roof centering about 12 feet north of the datum.

The bottom strata was composed of brule clay and formed the floor of the shelter at the time of occupation. A single pit was dug through the brule to the conglomerate in the trench, but no additional stratas were noted.

Water seepage occurred on the surface of the brule at the time of excavation. This seepage appeared to be constant and kept the cultural bearing level quite moist. This undoubtedly was the contributing factor towards the decomposition of all perishable materials, as none were found in the entire shelter. The seepage was the greatest at the northern extremity of the trench. This was the lowest level of the brule floor. A scarcity of cultural materials in this area suggests that dampness rendered this portion of the shelter uninhabitable during the time of occupation.

Grids were laid out parallel to the trench and excavations were made on both sides of the trench. Grids were excavated with a trowel from the top down in 6 inch intervals. All material was screened and items recovered were recorded.

Commencing 11 feet east of the trench the overburden became much thicker and included huge slabs of conglomerate which had sloughed from the ceiling after the time of occupation. Many of the slabs were winched from the shelter and others had to be broken with sledge hammers. In some areas the overburden was 4 to 5 feet in depth. It was impossible to mark the grid corners by stakes in this area. The locations were marked on the ceiling with brightly colored spray paint. Cement nails were driven into the conglomerate and plumb bobs suspended by chalk lines recorded the corner of the grids.

At E-035 the culture bearing strata was only an inch in thickness and the overburden was nearly 6 feet. Excavations were not continued beyond this point. Excavations were not carried on beyond W-015 as evidence of occupation was negligible.

CULTURAL FEATURES OF THE SITE

The most frequent features of the entire shelter were hearths. (Figure 1). A total of seven individual hearths were uncovered in addition to the large area of charcoal and ash which was described earlier in this report as the third strata.

Hearths nos. 1, 2, 3, and 4 were simple surface lenses of stained sand, ash and small bits of charcoal. All were irregular in shape and contained a few stones, apparently by accident rather than choice. The finely divided particles of charcoal and the large amount of ash would seem to indicate a paucity of good fuel. An examination of charcoal from the hearths and also in the area referred to as the third strata revealed that small woody plants such as sage and greasewood were used as fuel. Small fragments of partially burned small leaves and grass-like material within the ash lenses indicates that quantities of this material was utilized for fuel. It is possible that bison chips were also used.

Some of the small particles of woody charcoal were recovered from hearth no. 3 (Plate 2A). An assay from this sample, Gak 1304 (3), produced a date of 780 $\pm$ 90 years before present.

Hearth no. 5 was a round bottom, basin-like depression dug into the brule floor to a depth of 6 inches. (Plate 2B). The hearth was 24 inches in diameter and contained three stones. The base of a small side notched projectile point (59) (4) was recovered from this hearth. An assay from a charcoal sample, Gak 1303, produced a date of 1270 $\pm$ 80 years before present.

Hearths nos. 6 and 7 were radically different in design from the other five. Both were made on the brule floor and both were stone lined. Hearth no. 6 was 14 inches in diameter and was lined with 18 stones. (Plate 3A). This hearth was located 22 feet north and 26 feet east of the datum, (Figure 1), and was partially covered by a huge slab of conglomerate which had sloughed from the ceiling of the overhang. Some large pieces of wood charcoal were recovered and the results of the assay from sample, Gak 1302, read 2170 + 80 years before present. A base of a side notched projectile point (74) (4) was recovered from the top of the hearth in an area not covered by the slab. (Figure 4K).

Hearth no. 7 was oval shaped, 10 by 24 inches and was located 23 feet north and 28 feet east of the datum. (Figure 1). This hearth was lined with 19 stones, (Plate 3B),

(3) Radiocarbon measurements from four charcoal samples were made by Gakushuin University, Tokyo, Japan.

(4) Catalog number.

and also contained some large pieces of wood charcoal. The sample, Gak 844, was measured at 2680 ± 90 years before present.

The C-14 dates from hearths nos. 6 and 7 indicate that they were from an earlier occupation. There was no inclusion of bones or other material which would suggest that the hearths were used for cooking purposes. Obviously, they were used only once and the builders moved on -- perhaps spending a single day or night in the shelter during a storm.

Charcoal for assays was selected from the Hearths nos. 3 and 5 on account of their position within the main habitation level. Hearth no. 5 was located in the brule floor and represents the earliest time of occupation.

Hearth no. 3 was situated near the top of the occupation level and its location indicates one of the final phases of habitation within the shelter. Hearth no. 4 was also located in the brule floor and its position within the occupation level in relationship to Hearth no. 3 is shown in Plate 4 A.

A profile of deposits within the occupation level suggests an intermittent type of occupation. (Plates 2 B and 4 B). Thin lenses of fine and sterile sand are interspersed between layers of bone, ash and charcoal. These lenses were quite puzzling during the early part of the excavations. They were not continuous over the entire occupation level. The lense would form, expand, and then taper back into the culture bearing deposits. These lenses can best be explained by a normal action of nature which happened during the excavation. During one afternoon a heavy thundershower occurred, and there was a partial flooding of the shelter. This run-off left thin layers of fine sand over much of the excavated area. If the shelter would not have been inhabited for a period of several years, the sand lens could build up to a considerable thickness.

The entire occupation level was littered with stone working debris, potsherds, and bone. The greater portion of the bones were fragmentary.

LITHIC ARTIFACTS

A total of 96 fragmentary and complete projectile points were recovered from the shelter. The greatest majority are small with 78 being an inch or less in length. They are moderately well made. Nearly all are triangular in form with side notches or no notches. The greatest variation is in the base.

Base Description	Notches	Specimens	Figure 4
Concave	None	11	h
Convex	None	10	j
Straight	None	14	i
Concave	2 Side	17	a, e

Base Description	Notches	Specimens	Figure 4
Convex	2 Side	4	d
Straight	2 Side	8	c, k
Straight	1 Side	2	f
1 Basal Notch	2 Side	3	b

There were three small corner notched types (Figure 4g). Two large corner notched types (Figure 4 l) were recovered beyond the roof of the overhang and had no contact with the main occupation level. One was recovered from the coarse gravel zone in the trench and was 7 feet north of the datum. The second point was recovered from grid #20, location N-010, E-020. A Besant-like point was also recovered in the same area. (Figure 4m).

There were 17 tip sections and 4 center sections which were unidentifiable as to type.

Stone used for projectile points are agate (45); quartzite (27); jasper (17); chert (6); and metamorphosed siltstone (1). Agate, quartzite, and jasper are all found locally.

The greatest concentration of projectile points was in the area of grids #24, #25, #27, and #28, where a total of 37 were recovered.

30 scrapers were recovered. Of this amount 17 may be classified as plano convex snub nosed end scrapers. (Figure 5a, b, c, e, f,g). These are very well made. The general shape is triangular. They are made from flakes with one flat side, the obverse faces are modified as illustrated in Figure 5.

There were 6 spokeshaves or notched scrapers; (Figures 5h and 7d); 3 side scrapers (Figure 5d, h); and 4 combination end and side scrapers. All were made on flakes with one or more well retouched edges. They are all irregular in form.

Material used for scrapers include jasper (16); agate (10); chert (3); and quartzite (1). Again, all are made from local materials.

There was no apparent concentration of scrapers in the shelter. The most productive grids were #19 and #25 where 5 were recovered from each grid.

There were 53 ovoid to piriform bilaterally flaked knives. (Figure 6a, e, g, h, i, j). Many of the specimens are broken. They were first shaped by percussion and the edges finished by pressure flaking. Some have rather slender points while others are strictly ovoid in form. Materials used were quartzite (28); jasper (12); agate (10); and chert (3).

Of the 53 knives recovered, 33 came from the eastern portion of the shelter. 13 were recovered from grid #25.

The inhabitants of the shelter were quite adept at removing large, thin and slender lamellar type flakes from a partially prepared core. Projectile points, scrapers and other tools were made from these flakes. There were 65 retouched flakes which suggest use as knives. (Figure 6b, c, d, f). A general stylization is lacking. On 52 specimens the retouching is confined to a single edge. 13 specimens show bilateral retouch. On every specimen the edges remain quite sharp. Materials used for flake knives are jasper (20); quartzite (18); agate (13); petrified wood (1); and metamorphosed siltstone (1).

MISCELLANEOUS FLAKED STONE

3 drills were recovered, one of which had been made on a flake and may possibly have been used as a graver. Two of the drills had expanding bases. (Figure 7e). These two were well made and show little wear from use. One was made of quartzite and the other from agate.

There were two gravers (Figure 7f, g). Both were made on a flake and both have a sharp point which was pressure flaked from one face on a medial ridge where it tapered to the edge of the flake.

There were 13 polyhedral cores of which 6 are jasper, 3 quartzite, 3 agate, and 1 chert. Apparently all were discarded when they became too small for striking flakes.

One large ovoid chopper was found. This specimen, made of quartzite, was percussion flaked and measured 5 inches in length, 2-1/2 inches in width and an inch in thickness.

GROUND STONE

Manos and metates were used but were not found in any great quantity. Three complete manos were recovered from the trench at the northern extremity and obviously were cached in this area. Two mano fragments were recovered in grids #27 and #28.

There were 13 metate fragments. Only a few of the fragments could be fitted together and even then there were not enough to indicate the size and shape of the original slab. Metate fragments were scattered throughout the entire shelter with no concentrations in any area. The materials used for the milling stones were hard sandstones. These apparently were carried in as this type of stone is not found locally.

There were 4 fragmentary and 3 complete sandstone shaft abraders. The largest specimen (Figure 7a) is rectangular in shape. There is one groove, 9 mm wide and 3 mm deep, which runs the entire length of one side. A second groove on another side runs the entire length and is 6 mm wide and 1 mm deep.

A second specimen has three grooves running along the entire length, This one is also rectangular in shape. The first groove is 10 mm wide and 3 mm deep; the second is 8 mm wide and 2 mm deep, and the third is 6 mm wide and 1 mm deep.

The third complete specimen is roughly triangular in shape and has a single groove running down one side. The groove is 6 mm wide and 2 mm deep. One side is ground flat with no groove.

All shaft abraders were made from fine tan to brown colored sandstone. This material had to be carried in as it is not found locally.

A flat triangular piece of hard reddish hematite (Figure 7c) was uncovered in grid #28. All three edges have been ground smooth. The faces are natural. The specimen is 8 mm in thickness. A second specimen (Figure 7b) was recovered from grid #32. This specimen is well rounded and pointed -- the tip having been shaped by grinding.

The use of the latter two artifacts is problematical. The material again is foreign to the locality.

MISCELLANEOUS STONE

12 pieces of reddish brown hematite were found throughout the entire shelter. Some show slight abrasive action. It is quite possible that this material was used as paint. The source for this material is in the Hartville uplift near Guernsey, Wyoming.

A single clear quartz crystal and a cluster of two calcite crystals were found in the occupation level. These, again, must have been carried in from some distance as none are found locally.

Of the 1,638 flakes collected from the shelter, 36% were quartzite; 32% were jasper; 27% were agate; 4% were chert; and 1% metamorphosed siltstone.

BONE ARTIFACTS

There were 49 bone artifacts. Several additional specimens are questionable due to the poor state of preservation, and will not be included with this report.

There were 6 bison rib flakers, 2 long bone flakers and 2 elk antler flakers. (Figure 8e).

10 awls fashioned from ribs were recovered. (Figure 8a, b, c). Only the tips show any work. One specimen (Figure 8b) was a double purpose tool having a sharp pointed tip and a well rounded butt end. There were two awls (Figure 8d) made from deer or antelope metapodials.

2 fragmentary shaft wrenches were found. Both were made from a large bison rib and had been drilled from both faces with a tapered drill leaving the hole bi-conical in shape. (Figure 8f). Both specimens were broken through the hole. The edges of the perforation show some polish from use.

There were 12 splinter awls and perforators. (Figure 4s, t). On all the worked surface was confined to the tip only. Tips varied from needle sharp to blunt and rounded. Some were well polished from prolonged usage.

2 bone knives were found. (Figure 4q). Both specimens were made from a splintered long bone and the cutting edge was honed to a razor edge.

3 beads were recovered which were made from tubular mammal bones. (Figure 4n,o,p). The three were well polished and the ends were rounded. There is no decoration.

8 bone artifacts having a problematical use were recovered from the occupation level. Both faces of the same artifact are shown in Figure 4r. All the specimens are approximately the same size. All were made from a tubular mammal bone. The distal ends were formed by grinding on an angle. The proximal ends appear to have been snapped off when the desired length was obtained. The bones are not polished and the tips show no wear. The artifact is comparable in shape to a hypodermic needle, but is much larger in size.

One canine tooth of a bear was found. This specimen was in a poor state of preservation and it is not definite if it was utilized as an ornamental artifact or if it was discarded as bone refuse. One small piece of shell was also recovered. It shows no evidence of having been shaped.

CERAMICS

Potsherds (Figure 9) were fairly abundant with 257 recovered from the entire shelter. No complete vessels were found and none could be restored. The largest sherd found was a body sherd and measured approximately 3 x 3 inches.

Three definite classes of sherds are recognized, two of which are related to the Upper Republican culture and one to Plains Woodland.

The first of the Upper Republican class is fine cord marked. It is represented by 70 sherds of which 9 are rim sherds. (Figure 9a, b, d). The color ranges from buff to gray and black. There is no evidence at attempted coloring. The tempering is fine to medium sand having an inclusion of mica. Sherds are 3 to 7 mm in thickness. Nearly all the sherds show evidence of smoothing and in some instances this nearly obliterates the cord marks. The cord marks are a result of fine and narrow 2 ply cords which were wrapped around a paddle and the impression left in the newly modeled vessel by pressing the paddle against the exterior surface. After the vessel was completed it was smoothed or brushed and then fired. The cord

marking runs vertically on most of the sherds. Decorations are confined to the rims and collars. Three rim sherds show 3 to 5 parallel horizontal lines incised on the collar. (Figure 9a). The same sherds have diagonal incisions across the lips of the rim. Two rimsherds are collared and are not decorated except by deep incisions on the lips. On both the vertical cord marks are visible with some smoothing on the collars. (Figure 9d). One rim sherd (Figure 9b) has vertical cord marking extending to the rim and has no lip decoration. Two body sherds have a single row of horizontal punctations on the shoulder. Cord marking is vertical.

The second class of Upper Republican is coarse cord marked and is represented by 124 sherds of which 9 are rim sherds. The color ranges from buff to gray and black. The temper is medium to coarse sand with an inclusion of mica. The sherds are thick, ranging from 5 to 11 mm. Cord impressions are coarse, parallel and vertical. Nearly all sherds show some smoothing or polishing. Rims are flared and lips are rounded. Decoration is confined to the lips where deep incisions are made resulting in a petal-like edge. (Figure 9e).

The third ceramic type is of Woodland affiliation. It is represented by 4 rimsherds--undoubtedly all are from the same vessel. (Figure 9c). Color is gray to black. The temper is fine to medium sand with some inclusion of mica. Cord markings are quite coarse and show an "S" twist. The average width of the cords is 3 mm. The markings are slightly diagonal and the sherds show no smoothing. There is no decoration. All the rimsherds are straight and show no flaring. The lips are flattened which causes a slight thickening.

59 of the sherds recovered were quite small and cannot be classified.

FAUNAL REMAINS

Numerous animal bones were found throughout the entire occupation level. Most of them appear to have been deliberately broken into small fragments, undoubtedly to obtain the marrow. A half bushel of hoof cores were recovered. This is one indication of the amount of game animals which were killed during the time of occupation. The animals were apparently butchered elsewhere and only choice pieces brought to the shelter. Only three vertebrae were recovered. Ribs were few and only two scapula were found. Skulls were entirely lacking. Mandibles of elk, bison, antelope and deer were common.

Animal bones were identified by Dr. Paul McGrew of the University of Wyoming and are listed in order of predominance: Cervus canadensis (elk); Bison bison (bison); Antilocapra (antelope); Odocileus (deer); Cynomys (prairie dog); Sylvilagus (rabbit); and Neotoma (packrat).

One calvaria and 4 mandibles of Canid (domestic dog) were recovered. The teeth in one pair of mandibles show extreme wear to the extent that the animal must have had considerable difficulty in eating for some time prior to death.

CONCLUSIONS

Investigations at the Happy Hollow Rock Shelter reveal that the site was inhabited by as many as three different groups of people.

The first group built two stone lined hearths (Plate 3A and 3B). They did not stay long. They left no artifacts within the shelter to reveal their identity. Three projectile points consisting of two large corner notched specimens and one Besant-like point (Figure 4 l and m) may have been affiliated with this group but none were found in actual association with the hearths. The two C-14 dates of 203 B.C. $\pm$ 80 years and 713 B.C. $\pm$ 90 years would place this occupation in the Middle Prehistoric Period. (5)

The second occupation was by a pottery using group with a Plains Woodland affiliation. This was a small group which had not occupied the shelter too long before they were either driven out or joined and absorbed by an Upper Republican group. The stylization of projectile points and pottery (Figures 4a, g and 9c) tends to place this material with the Orleans Aspect of the Woodland culture. Sites containing a similar inventory of cultural materials are: "Ash Hollow Cave, Lens D" (6) and "Site IV at Agate Bluff" (7). The C-14 date from Hearth No. 5 (Plate 2B) of 697 A.D. $\pm$ 80 years is considerably older than the analysis of the dendrochronology, 1000 to 1150 A.D., for lens D at Ash Hollow Cave. The date does agree with the one obtained for the Woodruff Ossuary (7) at 611 A.D. $\pm$ 240 years. There are also similarities of cultural materials at Happy Hollow and the Woodruff Ossuary.

The final occupation was by an Upper Republican group. These people have been identified by Strong (8) as prehistoric Pawnee, whose first sites were found along the upper Republican River in Nebraska. The ceramic stylizations at Happy Hollow are well within the range of those of the Lost Creek Focus. (9)

(5) Mulloy - A Preliminary Historical Outline for the Northwestern Plains. Mulloy & Steege - Continued Archaeological investigation along the North Platte River in eastern Wyoming.

(6) Champe - Ash Hollow Cave.

(7) Kivett - The Woodruff Ossuary.

(8) Strong - An Introduction to Nebraska Archaeology.

(9) Strong - An Introduction to Nebraska Archaeology.

Projectile point types, end scrapers, flake knives, and the ovoid knives are also similar to those of the Lost Creek Focus. The diamond shaped and beveled knives of the Lost Creek sites are absent at Happy Hollow.

The identification of a focus for the Happy Hollow Rock Shelter materials is somewhat tentative. The entire occupation suggests a rather marginal sedentary culture adapted to a more nomadic type of hunting and gathering pattern. Most of the cultural material from the occupation level proved to be closely related to the Upper Republican aspect. The lithic artifacts suggest simple functional natures adapted more to a hunting economy rather than sedentary agriculture. Some of the more elaborate artifacts which are so characteristic of the present Upper Republican sites farther to the east are absent at Happy Hollow. Milling stones were found in some numbers within the shelter but their position within the level cannot be definitely established with either the Upper Republican or Plains Woodland occupation. They do appear in other Woodland sites, but they are not common in the Upper Republican sites.

The lack of perishable materials from the occupation level, due to the wet condition of the strata, has hampered a thorough interpretation of the cultures involved. Numerous surface hearths are visible in the general vicinity to the south and west of the shelter. There is no evidence of any structural shelters. Surface materials have been pretty well gleaned by collectors.

There are vast areas in northern Colorado, southeastern Wyoming and western Nebraska which should produce additional sites of this nature. Careful future excavations can add many facets to the taxonomic classifications of the early ceramic producing peoples of this area.

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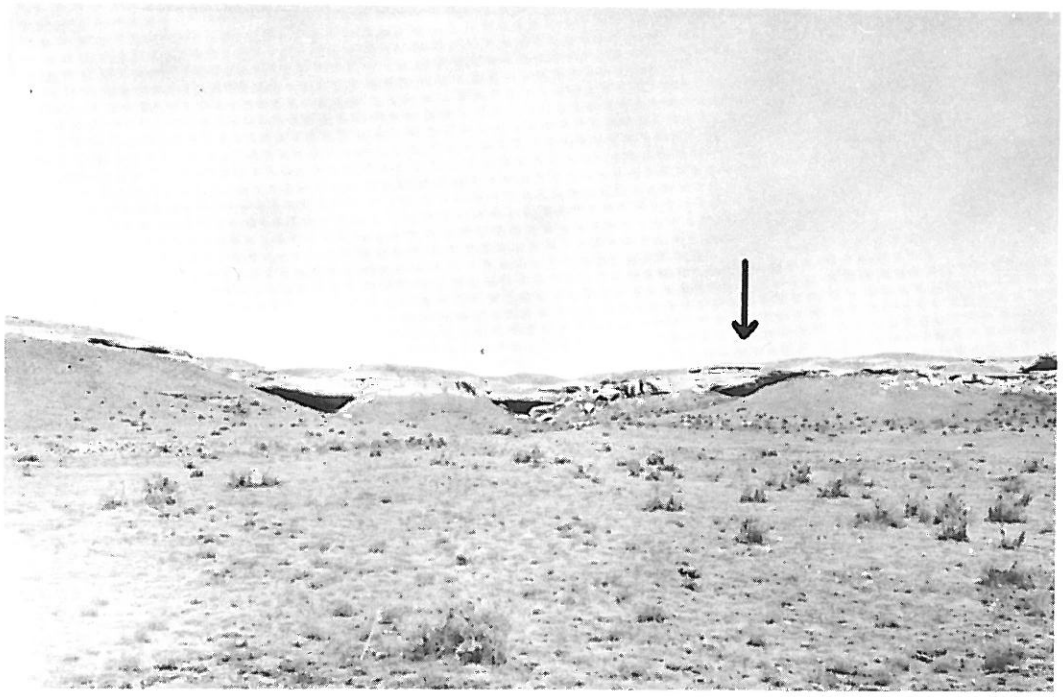


PLATE 1A

PLATE 1B

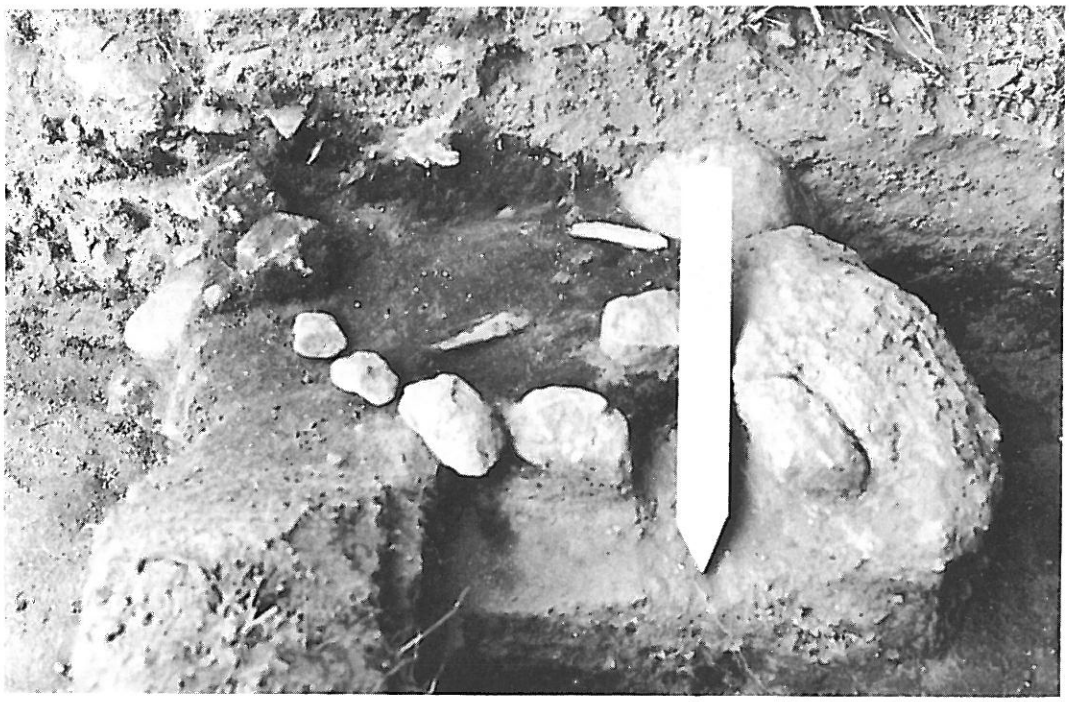


PLATE 2A

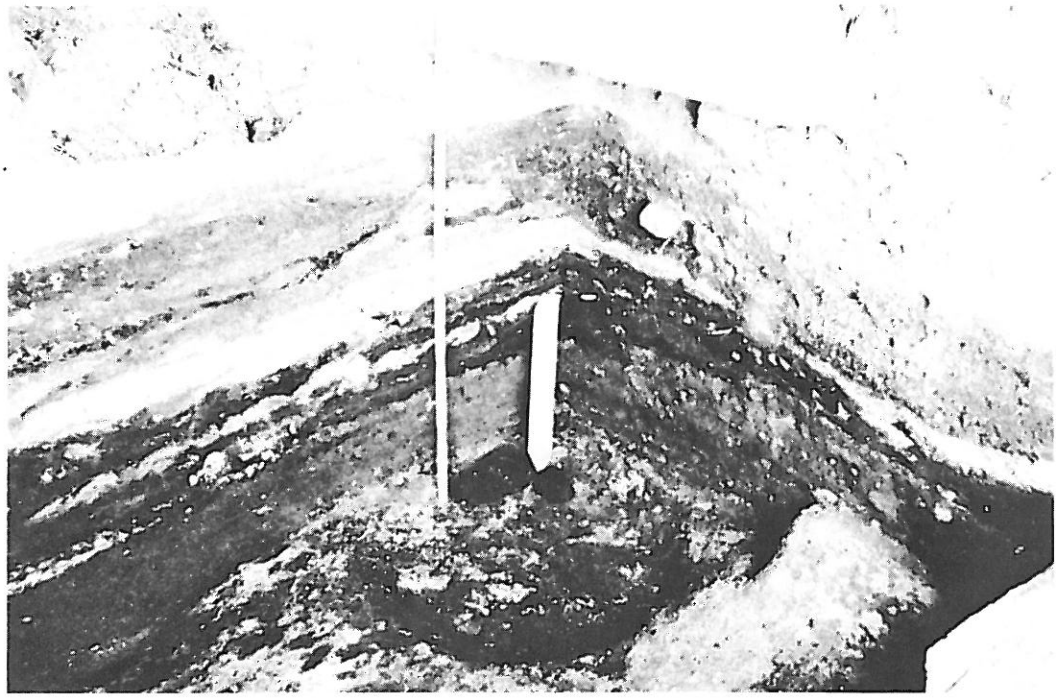


PLATE 2B

PLATE 3A

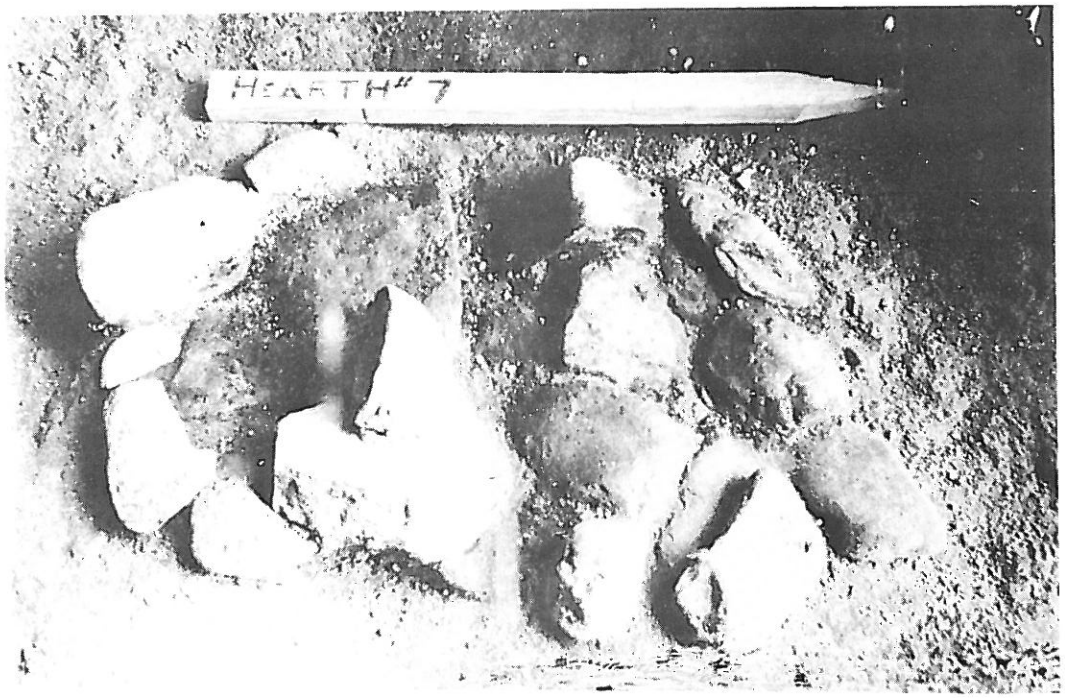


PLATE 3B

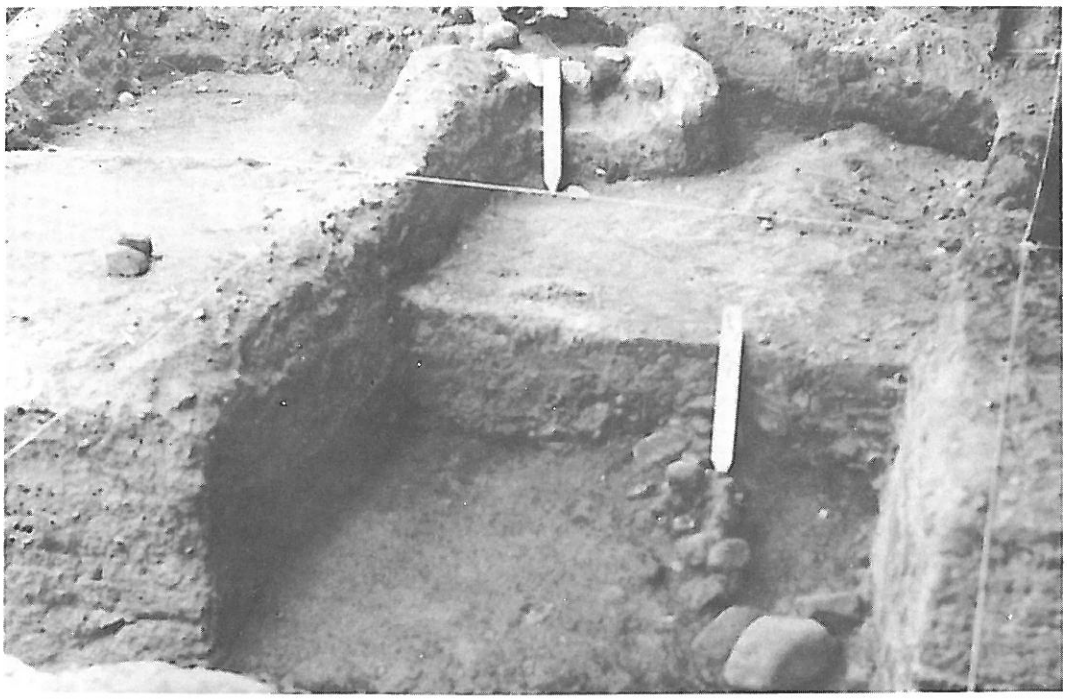


PLATE 4A

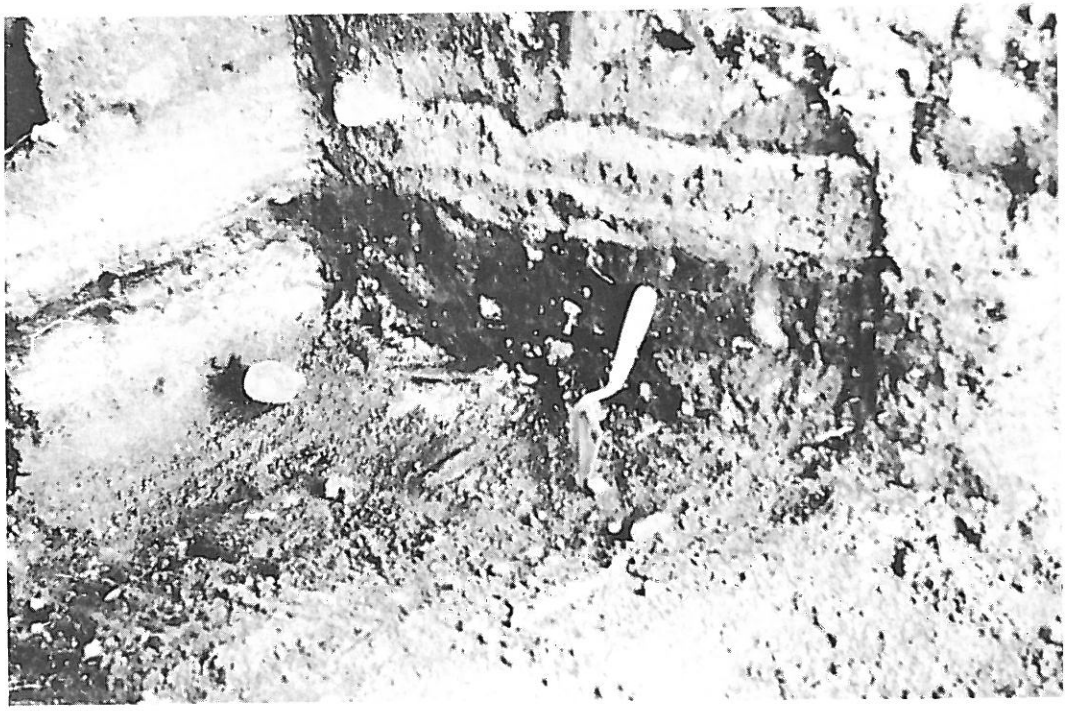
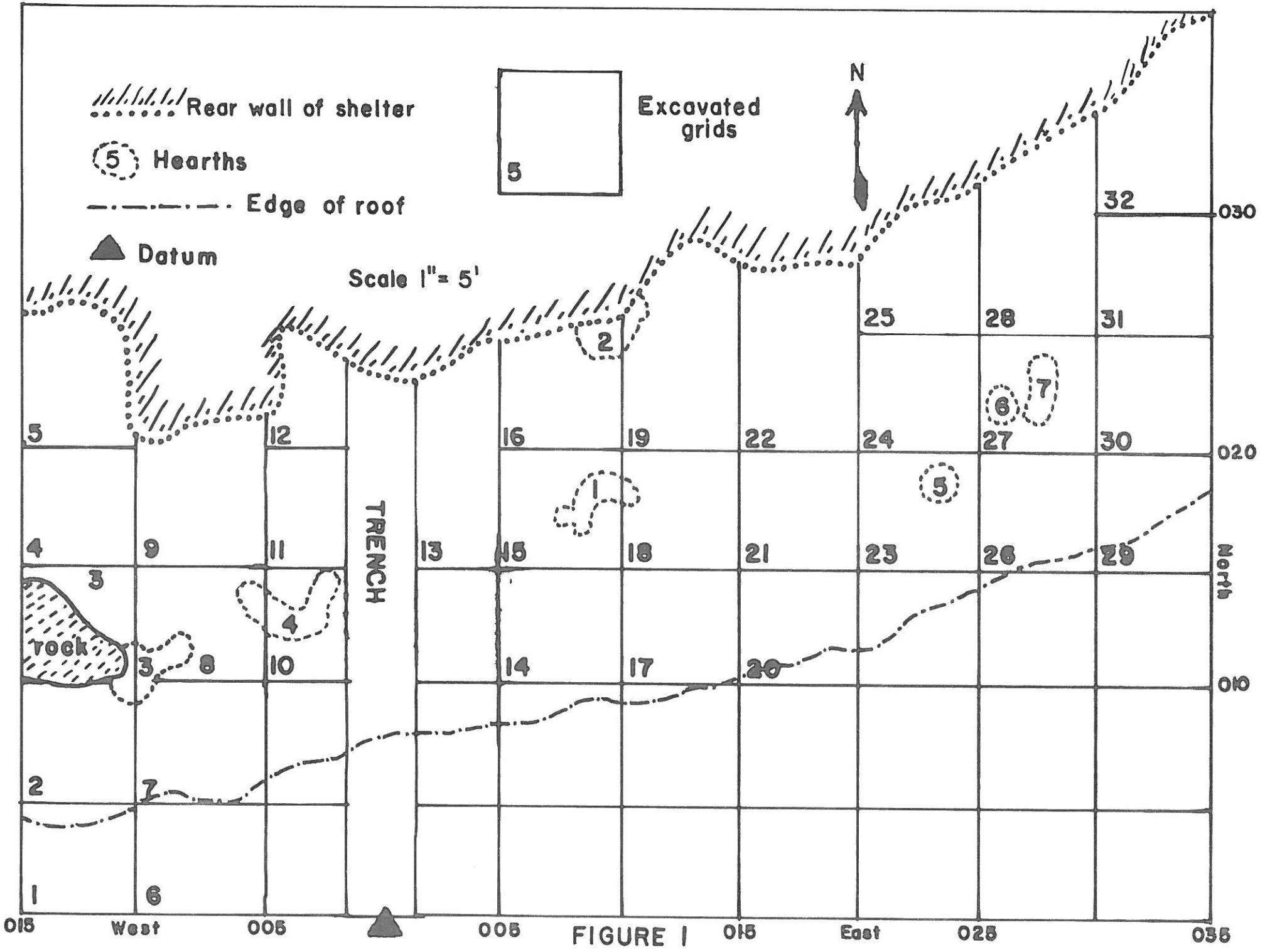


PLATE 4B


Rear wall of shelter
5 Hearths
Edge of roof
Datum
Scale 1"= 5'
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Excavated grids
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TRENCH
rock
1
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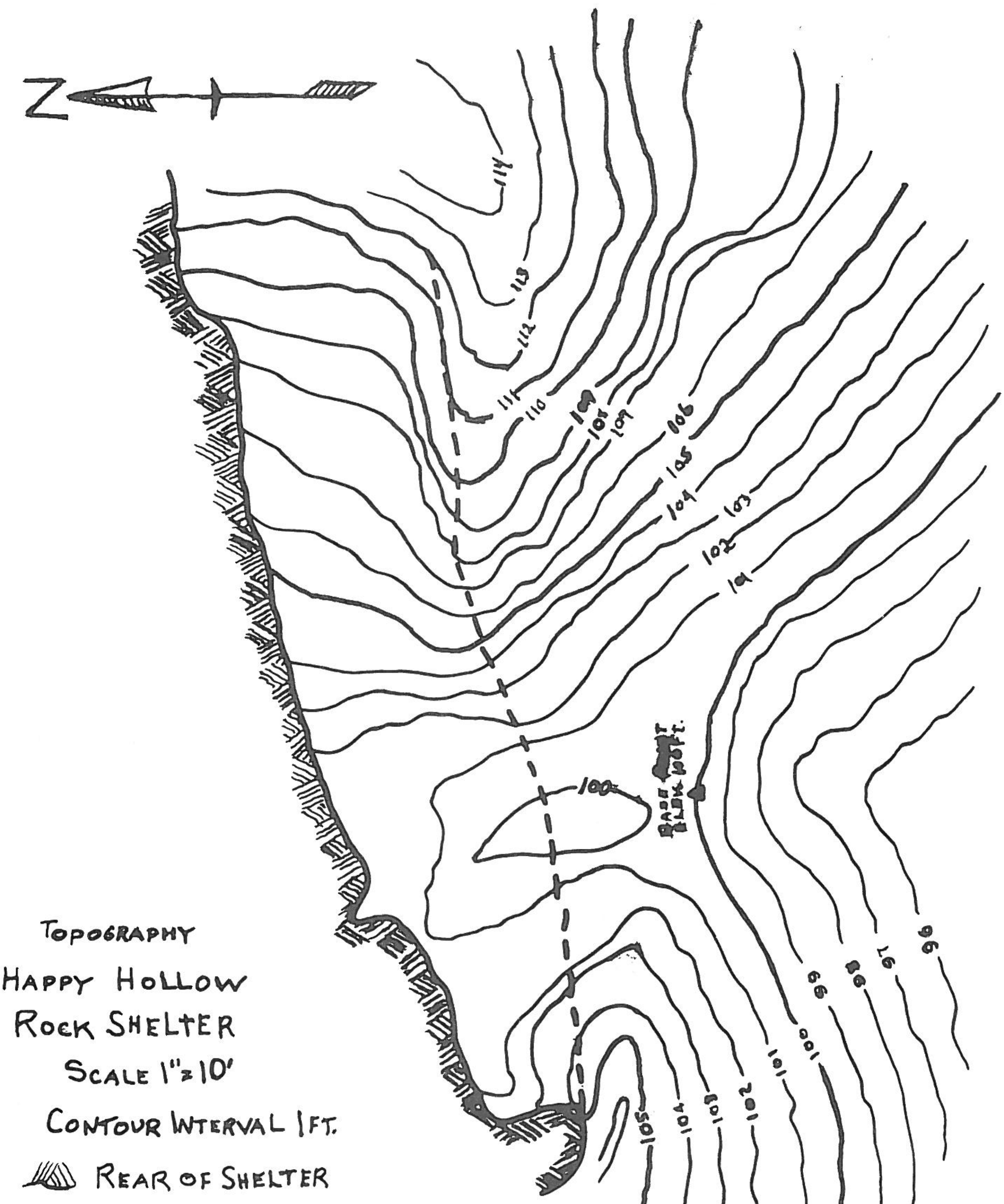
FIGURE 1



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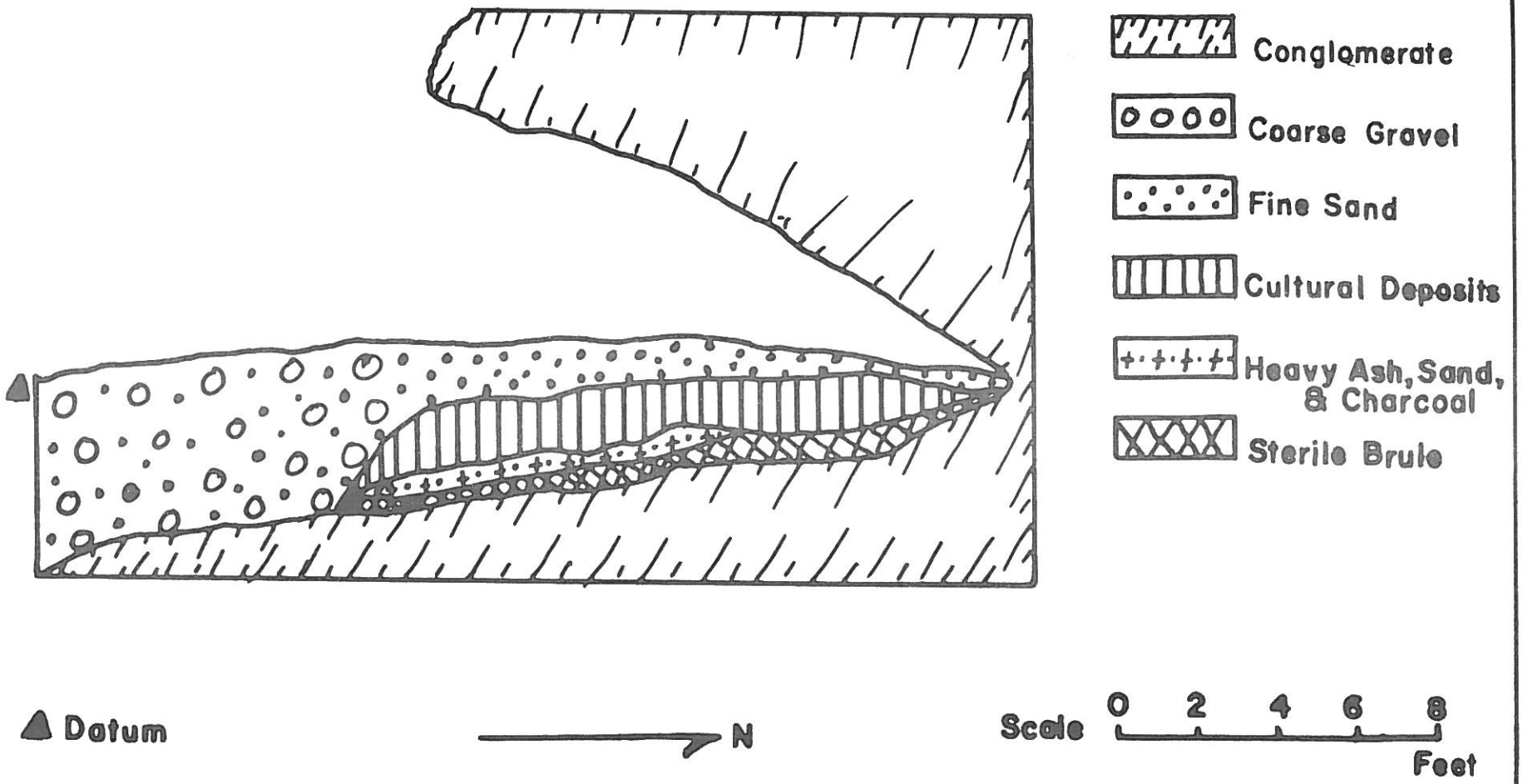
Topography
Happy Hollow
Rock Shelter
Scale 1" = 10'
Contour Interval 1 Ft.
Rear of Shelter
Outer Edge Shelter

FIGURE 2


Conglomerate
Coarse Gravel
Fine Sand
Cultural Deposits
Heavy Ash, Sand, & Charcoal
Sterile Brule
Datum
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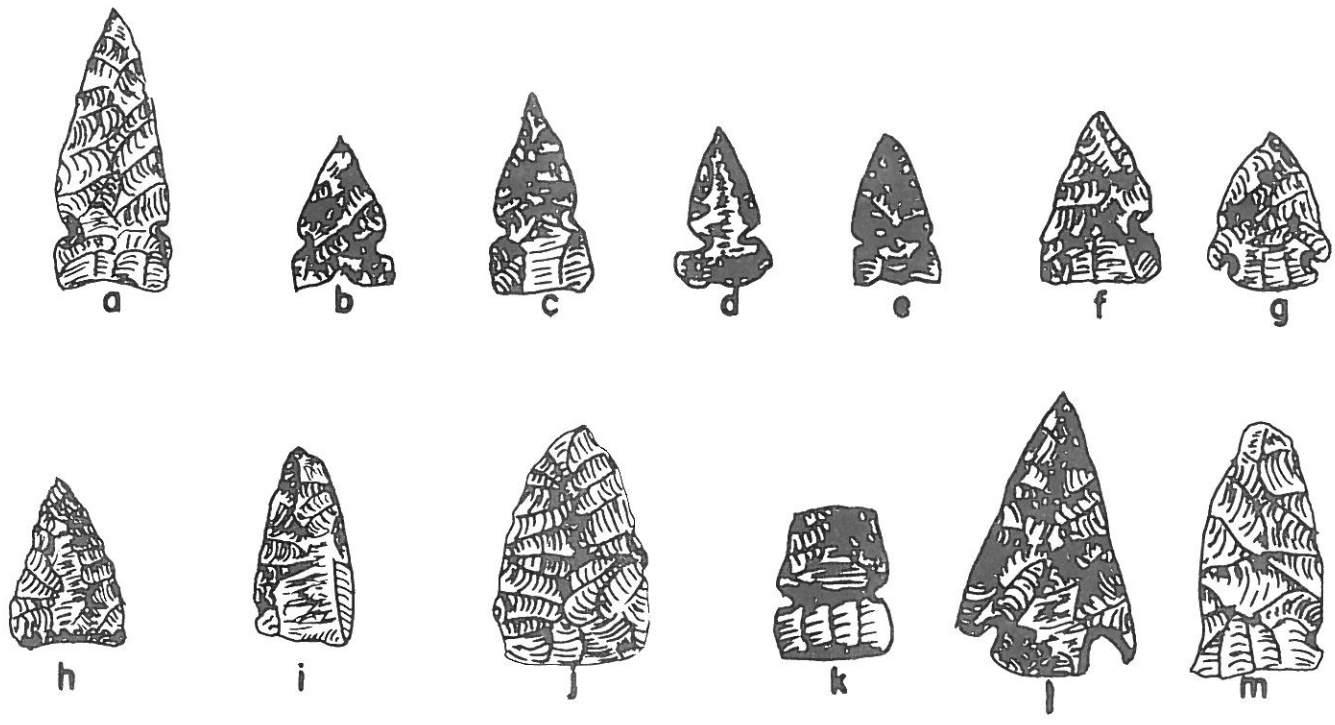
Scale
0 2 4 6 8
Feet

FIGURE 3



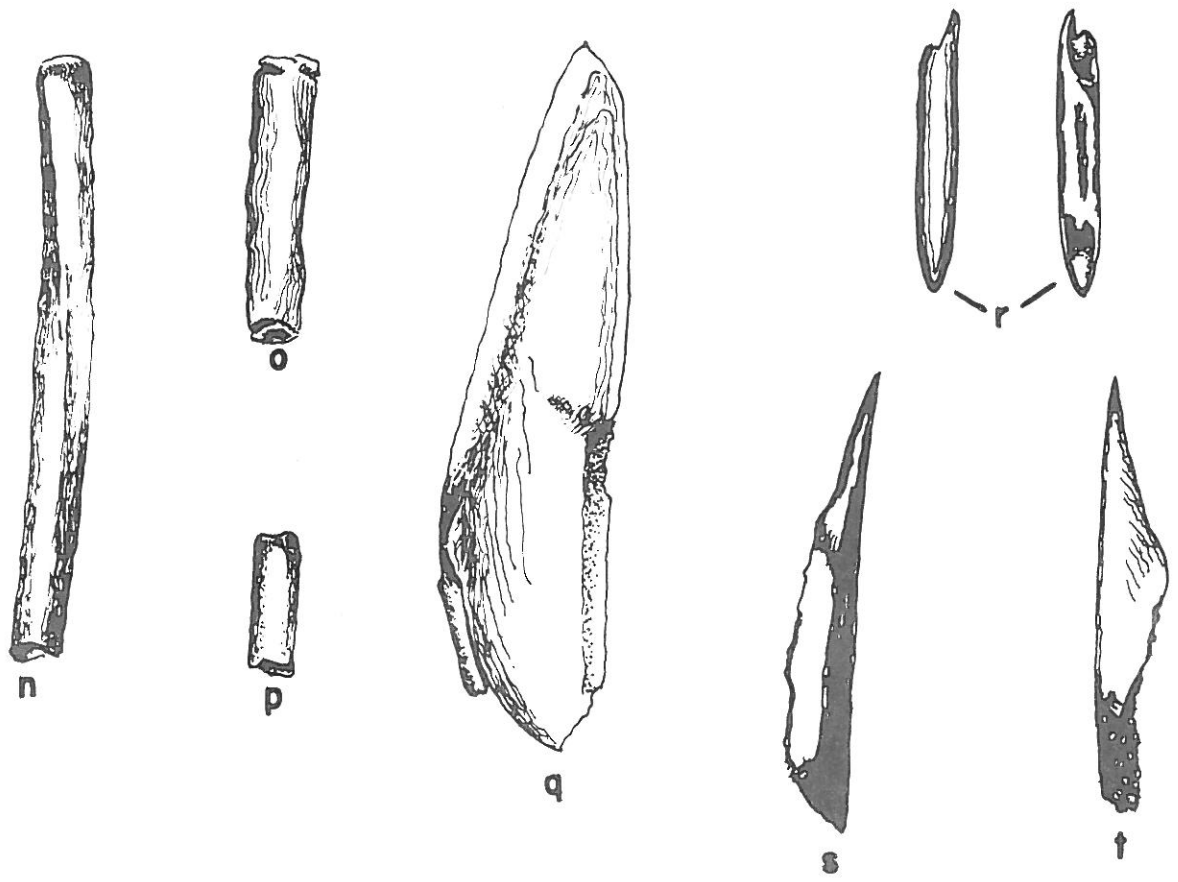


FIGURE 4

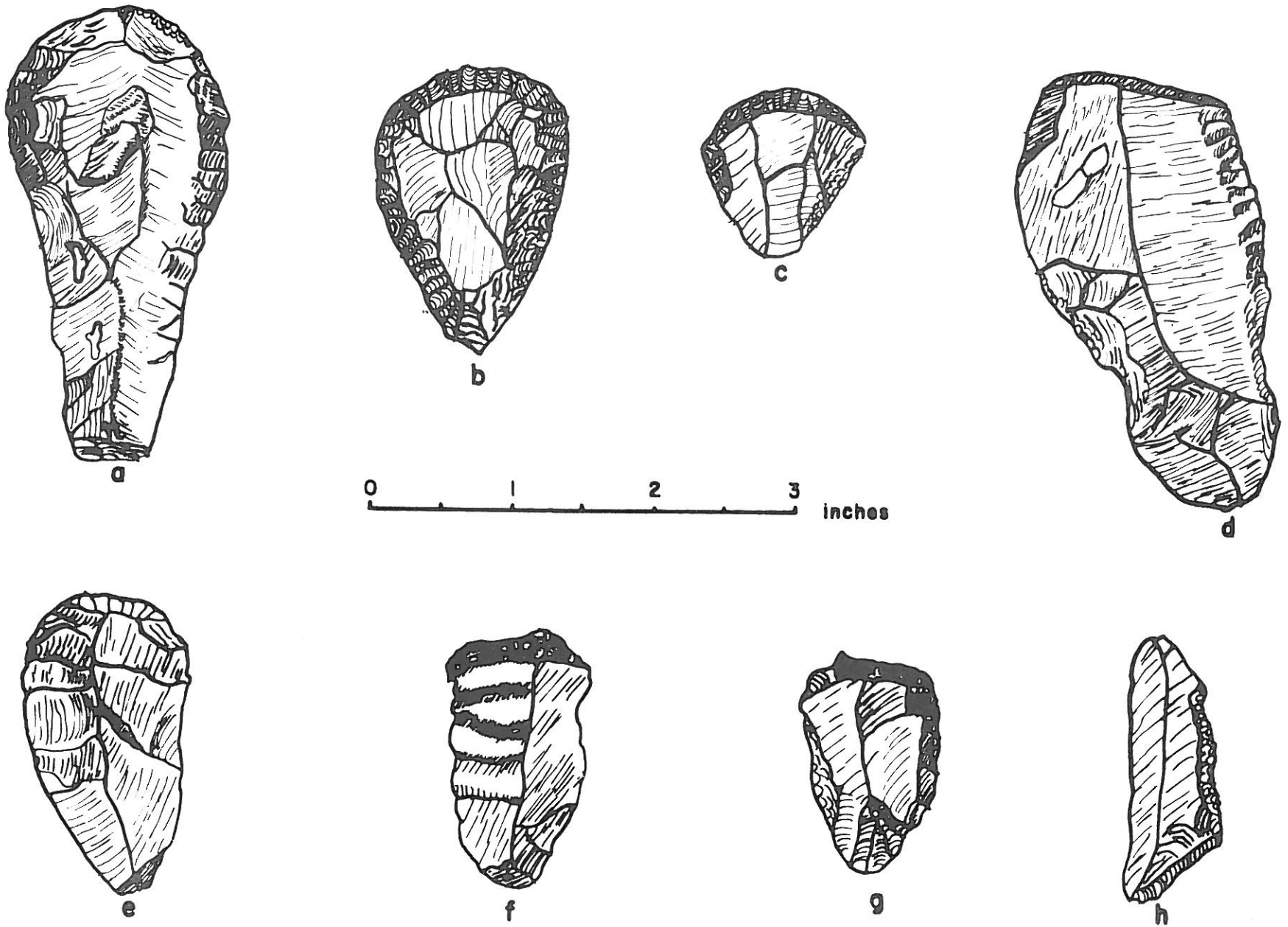


FIGURE 5

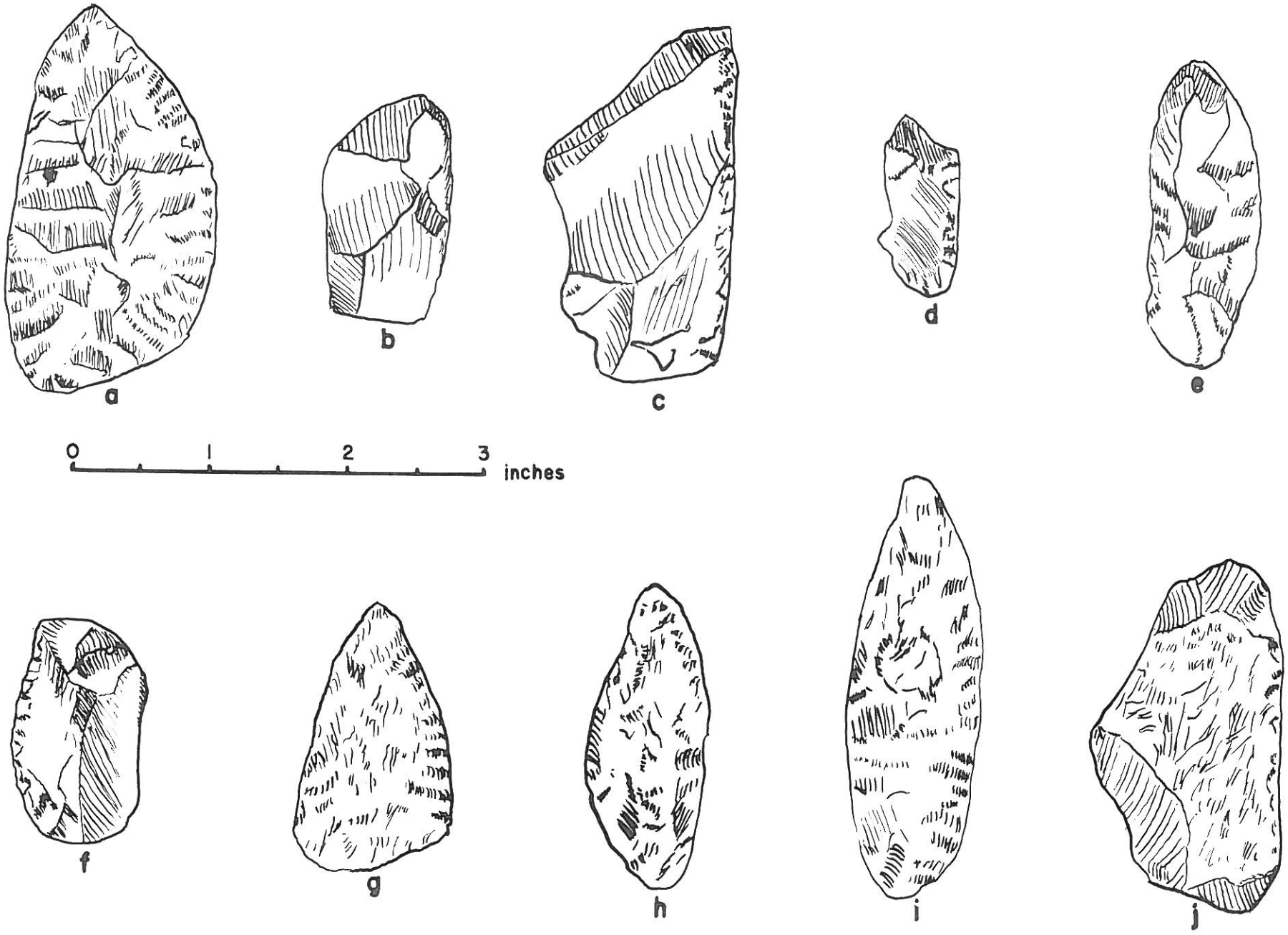


FIGURE 6

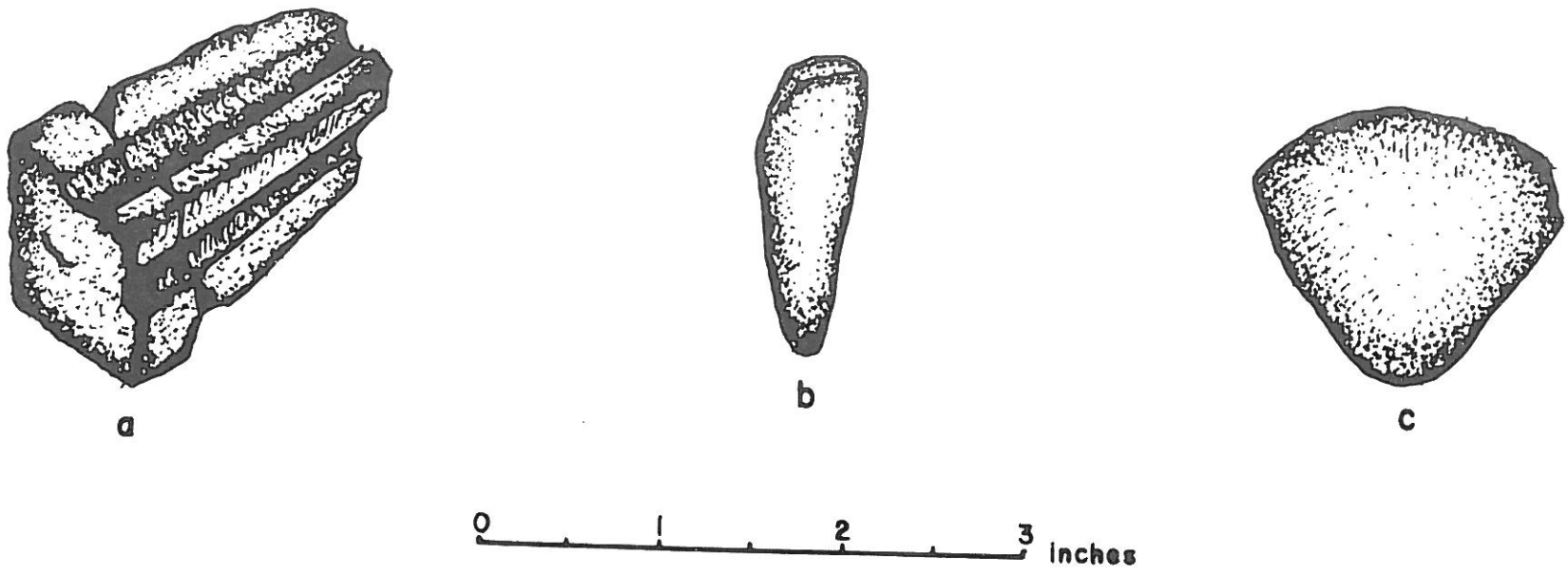


FIGURE 7

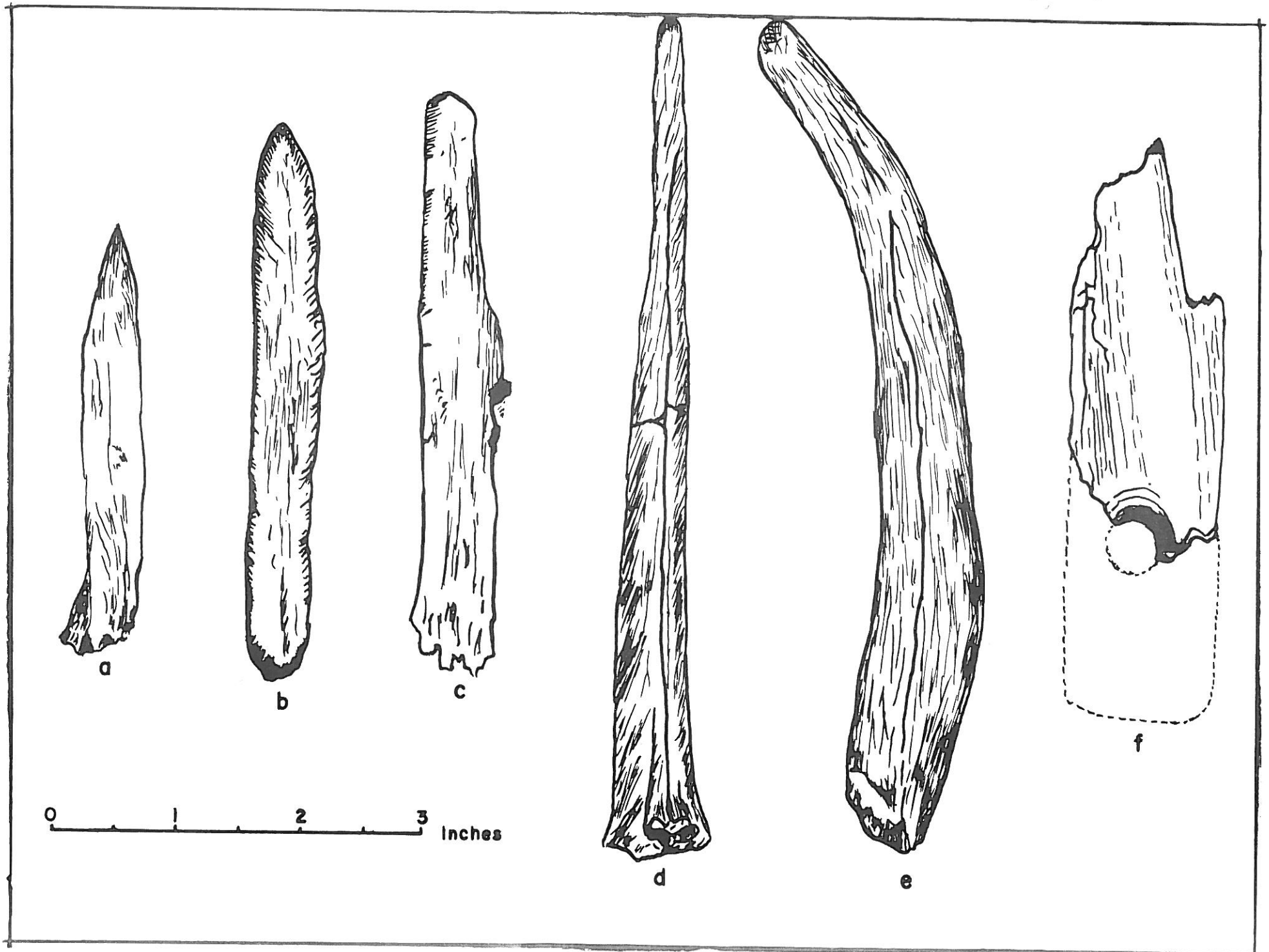


FIGURE 8

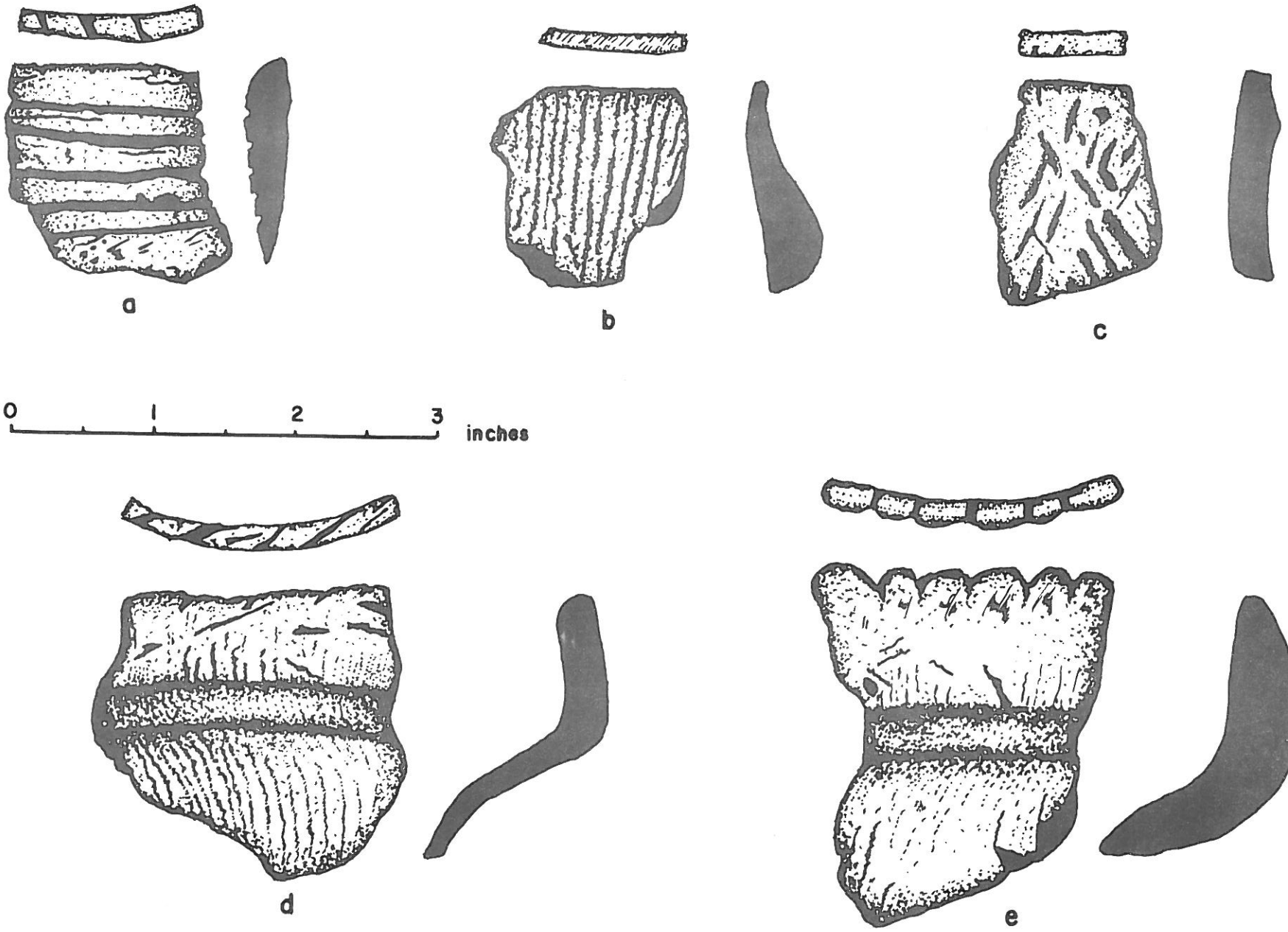


FIGURE 9