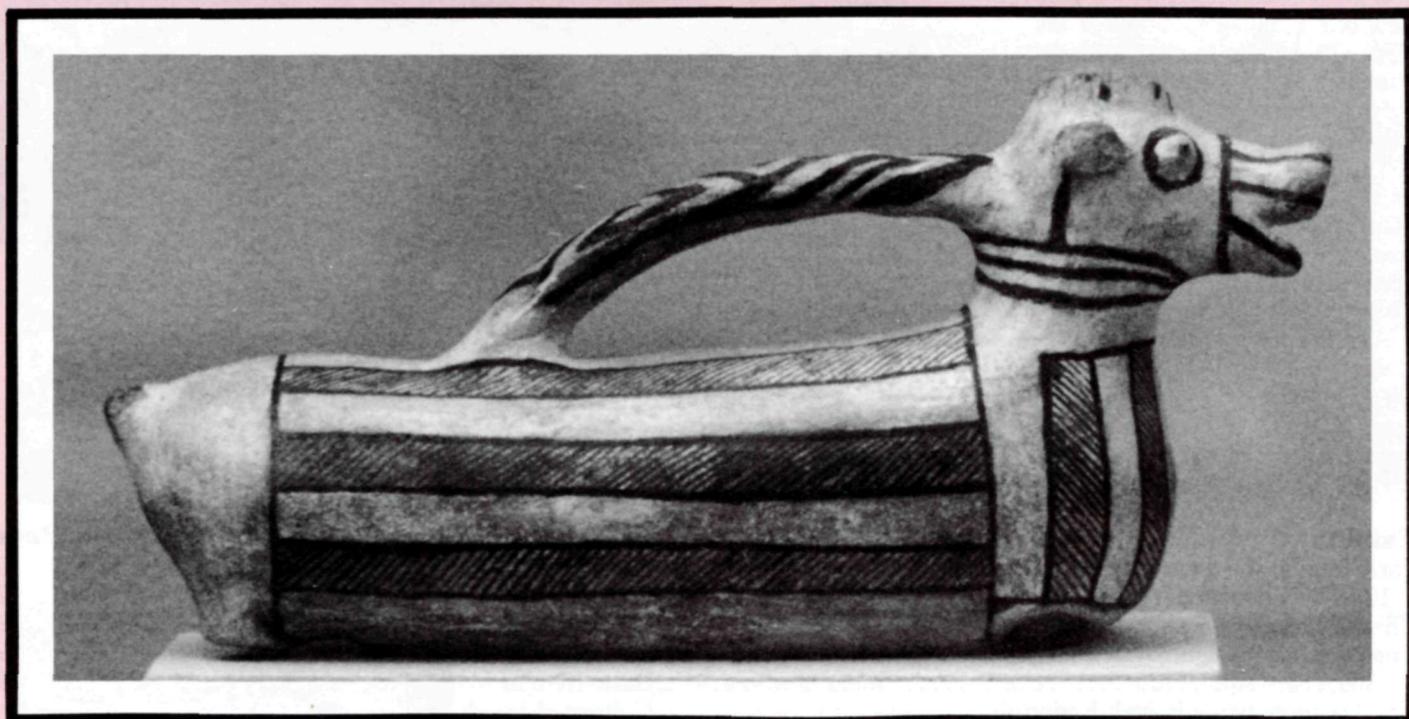


# MESA VERDE MUSEUM



## Exhibit Guide

**Chapin Mesa Archaeological Museum  
Mesa Verde National Park — Colorado**

## Welcome!

The museum is open every day of the year. During fall, winter and spring, guided tours to Spruce Tree House begin here. Spruce Tree House is located in the canyon behind the museum and is the only ruin usually accessible throughout the year.

The exhibits begin with a set of dioramas depicting the cultural sequence and development of the ancient culture of the Anasazi Indians of Mesa Verde. The interpretive displays contain artifacts from the ruins of Mesa Verde and the American Southwest. Artifacts, arts and crafts of contemporary Southwestern Indians, such as the Navajos and Utes, are also shown. This guide book is designed to serve as an overview of the exhibits. Although displays are subject to change, every attempt has been made to include the most recent additions to the exhibitions.

The information desk at the museum entrance will provide you with up-to-date information on tour schedules. For further information on the Southwest and Mesa Verde, visit the book store located off the museum lobby.

Also, be sure to stop at the Visitor's Center (open only in the summer) which houses more examples of the arts and crafts of contemporary Southwest Indian cultures.

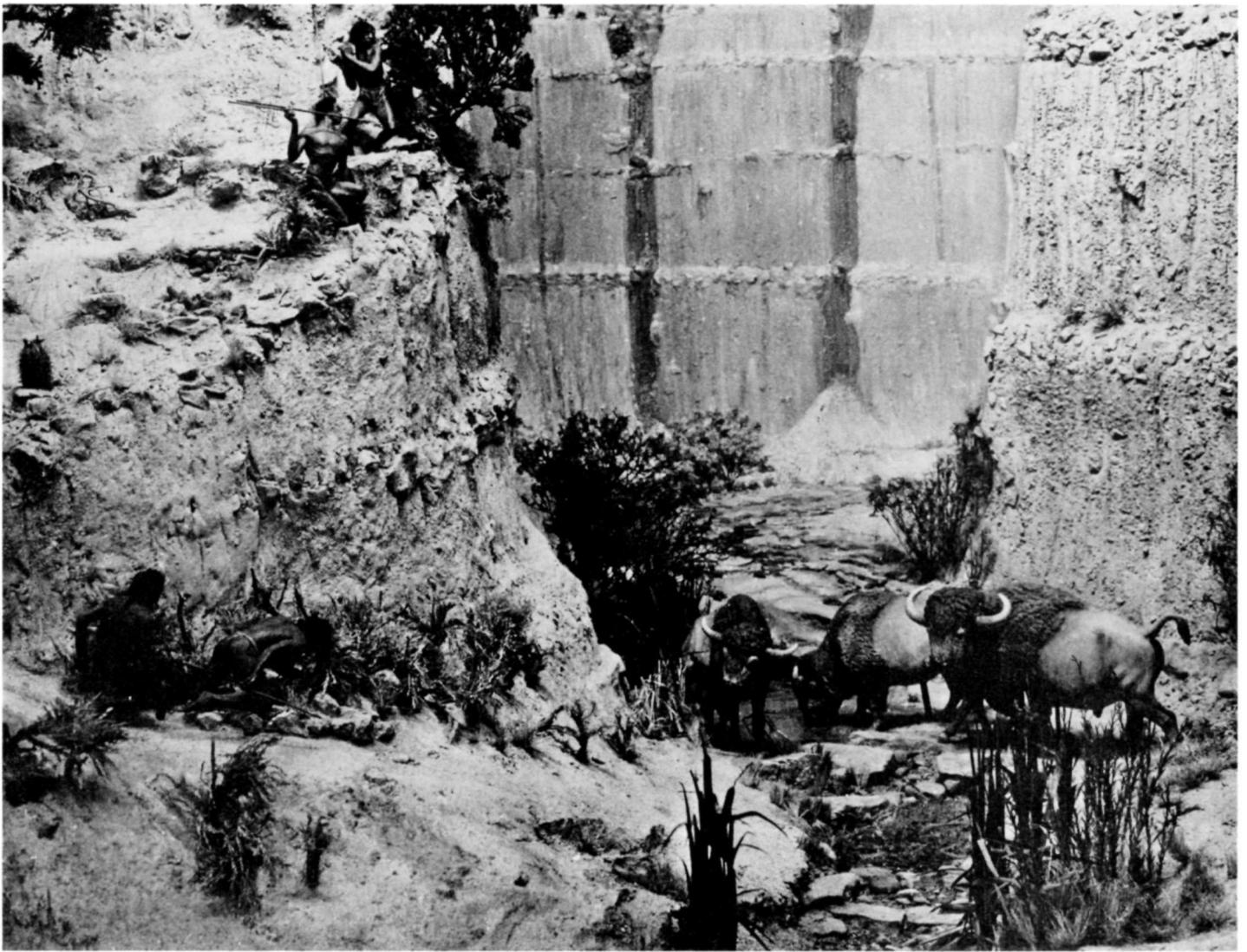


While visiting the museum, look up and see the unique beam construction of the ceiling.



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(National Park Service photo)



### Early Man in the New World — 10 to 15 Thousand Years Ago

America's first inhabitants were hunters and gatherers of wild plant material. This diorama shows a site near Folsom, New Mexico, where 19 beautifully fluted dart points were found among the bones of 30 Folsom bison (*Bison antiquus figginsi*), an extinct species. These bison were larger and had a greater horn spread than modern bison (*Bison bison*).

The Folsom bison seem to have been killed at a water hole or wallow. The hunters skinned the animals, cut off what flesh they needed and left the carcasses. Deeply embedded points were not retrieved, thus revealing the story of the bison kill.

The darts or spears used in the Folsom hunt were tipped with fluted stone points, now known as "Folsom Points." Examples of these and other ancient dart points are exhibited in this museum.

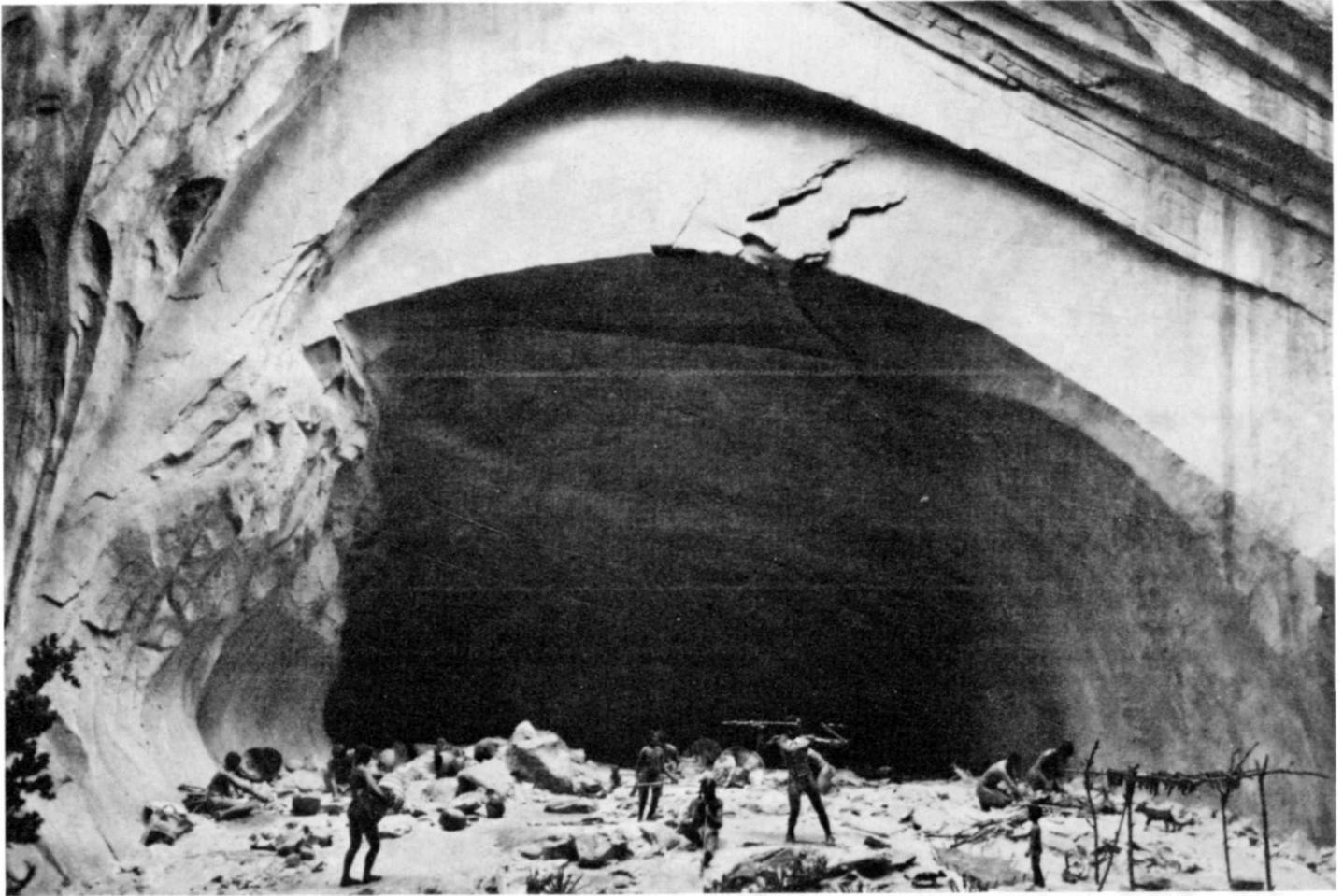
The hunters may have used the "atlatl" (at-lat-uhl), a dart or spear thrower, which gave great leverage as it extended the length of the arm.

Nothing is known of the physical appearance of these earliest men. It is presumed they were modern men (*Homo sapiens*), as remains of primitive types of men have not been found anywhere in the New World.

It is not known what plants grew in the Folsom region 10,000 years ago, but modern species may have been present.

The small volcano on the horizon is Capulin Mountain, now extinct, but active at the time of the Folsom hunt.

This stage is shown as it is basic to all later cultures in the Southwest. The Mesa Verde story is depicted in the next four dioramas.



### The Basketmaker Period — 1600 Years Ago

The Mesa Verde story starts here. Pueblo Indians inhabited the Mesa Verde region for almost 1300 years. Their cultural development is divided into four periods. The first, the Basketmaker Period, dates from approximately AD 1 to AD 450 and is shown here. The next three dioramas complete the story.

Around AD 1, the first farming Indians entered the area. Lacking houses, they took shelter in alcoves. They did not make pottery. Instead, they wove baskets for containers; hence the name "Basketmaker" is used for this period and the people. Weaving was the outstanding craft and baskets, bags, sandals, aprons and belts were common. Their culture was simple, but they made constant progress.

Cooking was often done in baskets by dropping hot stones in the food. Corn was ground on a "metate" (meh-tah-tay) holding a small grinding stone, called a "mano" (mahn-oh), in the hand.

Corn and squash were grown in small fields on the mesa tops. Deer were skinned and the meat hung on racks to dry.

Storage cists were dug in cave floors and lined with slabs and grass bark. Roofs for these cists were made of poles, grass, bark and mud. Food and personal belongings were stored in these.

Babies were laced in soft cradles made of withes, reeds and cords and padded with fiber, grass or shredded bark.

The Basketmakers used the atlatl or throwing stick. The dart propelled by the atlatl was four to five feet long. It had a detachable hardwood foreshaft tipped with a stone point. A quick, overhand thrust with the atlatl provided added leverage and propelled the dart with great force.

(National Park Service photo)





### **The Modified Basketmaker Period — 1300 Years Ago**

By AD 450, the Pueblo people had made such progress that a new term, "Modified Basketmaker," is used to describe their culture for the next 300 years, AD 450 to AD 750. The people were the same; but their basic culture was modified by many important additions, and there was constant change. The modifications were: the people began to build permanent houses, known as pithouses; they learned to make pottery which was superior to basketry for most domestic purposes; the bow and arrow replaced the atlatl; beans were

introduced; and the turkey was domesticated.

The bow and arrow were borrowed from other tribes of Indians. Game animals, such as mountain sheep, provided meat.

The idea that fireproof and waterproof vessels could be made of clay came from southern tribes. The women learned to make pottery by experimenting.

Since food could be cooked directly on the fire in pottery vessels, more nourishing and appetizing meals were prepared. Beans, an important

source of protein, were introduced and cooked in the fireproof vessels.

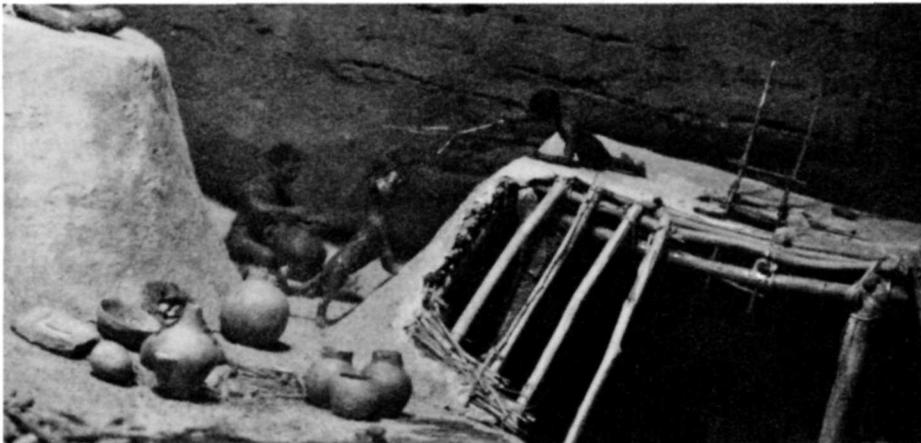
Fine baskets were made and weaving continued to be an important craft. The soft, padded cradle was still in use.

Pithouses were built as homes. Since these structures provided protection from the elements, most people moved to the mesa tops to be near their fields.

The method of construction of the pithouse can be seen. The hole in the roof served both as smoke hole and entrance. A ventilator dug under the wall provided fresh air. Stone axes were used to cut the logs and poles.

Turkeys were domesticated. Apparently at this time, they were raised primarily for their feathers which were used in weaving warm robes. The only other domestic animals were dogs.

This is Step House, Mesa Verde National Park, named for the unusual flight of stairs (seen at the back of the diorama) which the Indians built. These steps are still intact, and can be seen by today's visitors to the cliff dwelling on Wetherill Mesa.





### The Developmental Pueblo Period — 1100 Years Ago

This period, AD 750 to 1100, saw the development of the typical pueblo, or “village” culture which still exists in the Southwest, hence the name, “Developmental Pueblo Period.” Arts and crafts flourished, new techniques developed and trade was important. Cotton was introduced at this time.

This village was built early in the period, about AD 850, when architecture was in an experimental stage. By AD 1000, stone masonry was perfected and since then has been used almost exclusively.

Vertical-walled houses were used as living rooms and pithouses became ceremonial rooms, called kivas.

Water was obtained from springs and seeps at the heads of canyons and draws. Possibly reservoirs were constructed to catch runoff from rain and snow.

Domestic turkeys were common, and their feathers were still used in weaving.

Farming terraces were widely used. Small dams were built at intervals across draws. Runoff and the rich top soil carried by the water made them

ideal garden plots. Fields of corn, beans and squash dotted the region.

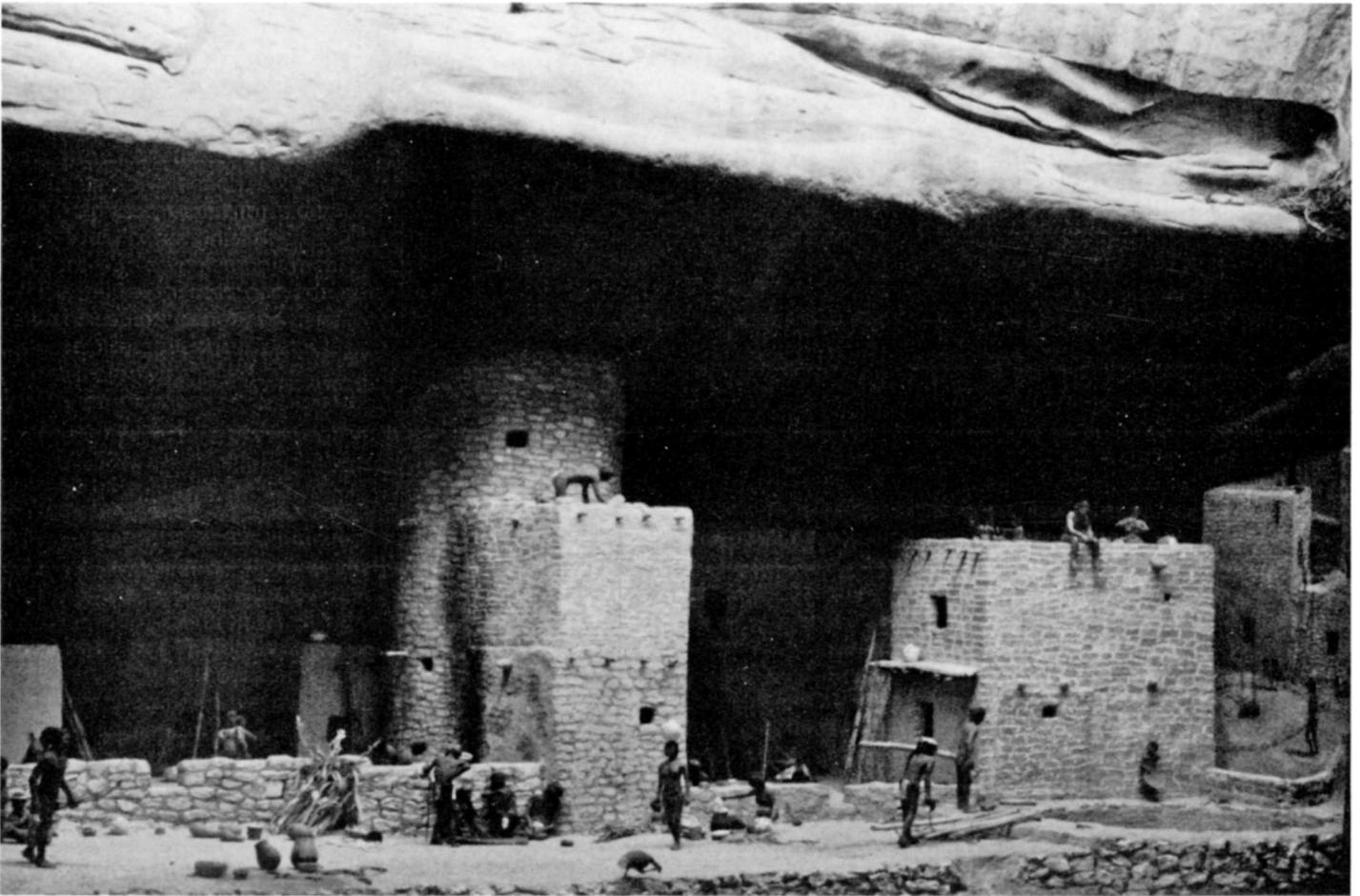
The grooved axe, now in common use, made construction easier. Individual houses almost disappeared since the rooms were joined together to make compact villages or pueblos. Rooftops served many purposes such as drying food.

Pithouses were still constructed, but there were changes. They became deep pitrooms with formal, ceremonial features. By AD 900, these pitrooms developed into true kivas, the distinctive ceremonial chamber still used by today’s Pueblo people of Arizona and New Mexico.

Baskets were common, but pottery was the dominant craft. Many types of pottery were made. Shapes, designs and methods of construction continued to improve throughout the period. Many new and improved stone and bone tools were made and cotton cloth was woven.

Head deformation was introduced. The padded cradle was replaced by a rigid cradleboard which permanently flattened the backs of infants’ heads. This odd “fad” continued in vogue for centuries.





### The Great or Classic Pueblo Period — 700 Years Ago

The climax of pueblo development occurred from AD 1100 to 1300. At first, the people lived in compact, defensive villages on the mesa tops. However, after AD 1200, most of them moved to alcoves and built cliff dwellings like Spruce Tree House, shown here on an autumn day in the late 1200's. The changes in architecture and manner of living suggest enemy pressure. The people suffered other troubles; water was scarce, the land was heavily farmed, and a 23-year drought started in 1276. Discouraged, they abandoned the mesa by about AD 1300 and moved south and southwest to join other Pueblo Indians.

The alcoves were natural; the Indians did not dig them. House walls were built of shaped sandstone blocks laid into a mud mortar, and roofs were constructed of poles and mud.

The circular, underground rooms were kivas, ceremonial and clubrooms used chiefly by men. Notice the kiva under construction. Its features are: bench, six roof support pillars, ventilator shaft,

deflector, fire pit and "sipapu" (see-pah-poo), a hole in the floor symbolic of the ceremonial entrance to Mother Earth.

Clubs, snares and the bow and arrow were used for hunting.

Women made two types of pottery: corrugated ware for cooking and storage and decorated black-on-white vessels for other purposes.

Mesa top fields produced most of the food. In good years, quantities of produce were stored for use in years of crop failure. Water was obtained

from a spring in the head of the canyon, 100 yards from the alcove.

Cotton was traded into the area and excellent cotton cloth was woven.

Women cooked over open fires in the courtyards. Food was boiled in jars, baked or fried on flat stone griddles, or roasted in ashes or coals.

Through the years, a large trash pile accumulated in front of the village. The dead were often buried in the trash.



## 4. DATING A SPECIMEN

WHEN A SPECIMEN FROM A RUIN IS TO BE DATED THE WIDE AND NARROW RINGS ARE PLOTTED ON A SPECIMEN PLOT.



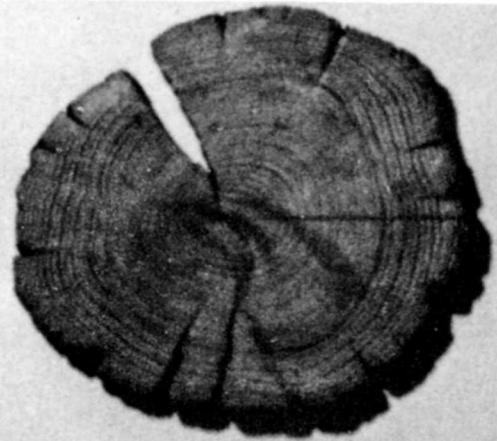
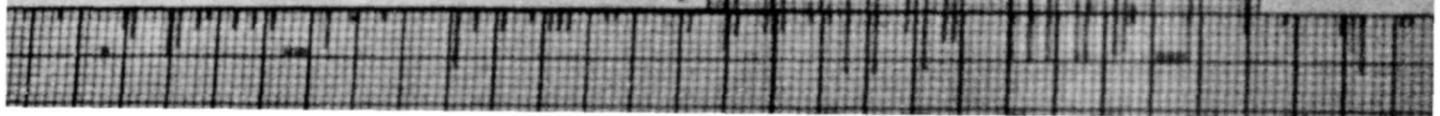
SPECIMEN PLOT

EACH VERTICAL LINE REPRESENTS ONE YEAR, DRY YEARS ARE INDICATED BY RED LINES. THE DRIEST YEARS ARE SHOWN BY THE LONGEST RED LINES. VERY WET YEARS ARE REPRESENTED BY A CAPITAL LETTER B.

AT THE RIGHT IS A SECTION OF A BEAM FROM BALCONY HOUSE. UNDER A MAGNIFYING GLASS THE RINGS IN THIS SPECIMEN APPEAR AS IN THIS ENLARGED CROSS SECTION.

USING THE METHOD EXPLAINED ABOVE, THE RINGS ARE TRANSFERRED TO A SPECIMEN PLOT. THEN BY SLIDING THIS SPECIMEN PLOT ALONG THE MASTER PLOT UNTIL THE RED LINES ON THE TWO COINCIDE THE DATE OF THE SPECIMEN IS OBTAINED.

NOTE THAT THE RED LINES ON THE TWO PLOTS MATCH.



SPECIMEN BE-50-BALCONY HOUSE

ENLARGED SECTION OF ABOVE SPECIMEN (taken on red line)



## Dendrochronology

### Annual Rings

Each year a tree adds a layer of wood, a "ring," just underneath the bark. The new layer represents the amount of growth added to the tree annually.

During the spring, when growth is rapid, the walls of the growth cells are thick and the wood appears white.

In the summer and autumn when growth is slow, the cell walls are thin and the wood appears red. Thus, an annual ring is made up of one white and one red band.

### Variability of Annual Rings

The width of annual ring growth depends chiefly on the amount of moisture furnished by rain and snow. In wet years, the growth is wide; in dry years, the ring is narrow. Thus, the annual variation of weather is directly reflected in the width of the rings.

During any given period of years, the sequence of wide and narrow rings forms a recognizable pattern of growth. Many patterns have been linked together to form an unbroken weather report of more than 1900 years. The ring pattern in any one part of this record is not duplicated in

any other part. Therefore, the ring pattern of a given specimen can be matched into its place in time.

The similarity of weather conditions over a large area of the Southwest makes possible the dating of beams from ruin sites in southwestern Colorado, southern Utah, northern Arizona and northern New Mexico.

### Establishing the Chronology

As the chronology is established, it is recorded on the "master plot," a diagram of ring patterns from living trees, modern pueblos and ancient pueblo ruins from the present time back to AD 11. Each vertical line on the "master plot" represents one year. Dry years are indicated by red lines.

### Dating a Specimen

When a specimen from a ruin is to be dated, the wide and narrow rings are plotted on a "specimen plot." Then this specimen plot is slid along the master plot until the red lines on the two coincide, thus obtaining the date of the specimen.

### Drought AD 1276 - 1299

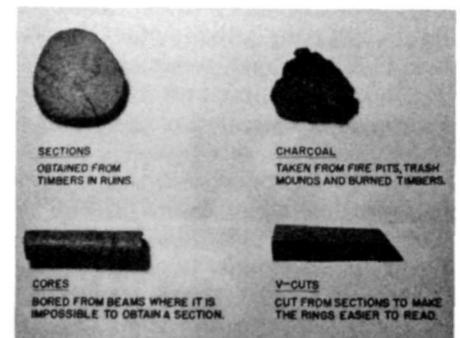
This period was one of almost continuous drought. It is widely believed that this was the last major

factor in the cliff dwellers decision to leave Mesa Verde.

### The First Mesa Verde Dates

The original beam sections taken from the Mesa Verde ruins by Dr. Douglas in 1927 date back as far as AD 112.

Various types of specimens are used in tree ring dating and include: sections, obtained from timbers in ruins; charcoal, taken from fire pits, trash mounds and burned timbers; cores, bored from beams; and V-cuts, cut from sections to make the rings easier to read. The most valuable wood for tree ring analysis are the western yellow pine, Douglas fir and pinyon pine.



## Basketmaker Period — AD 1 to 450

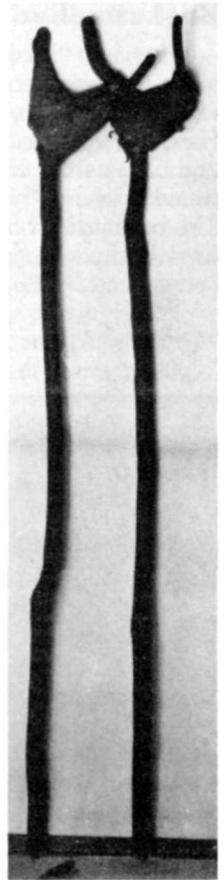
When a Basketmaker cave is excavated, the artifacts found are like the ones pictured here. The excellent stage of preservation is due to the dryness of the caves. It is from such objects that we gain our knowledge of the earliest farming Indians of the Mesa Verde region.

The outstanding traits of the Basketmakers were:

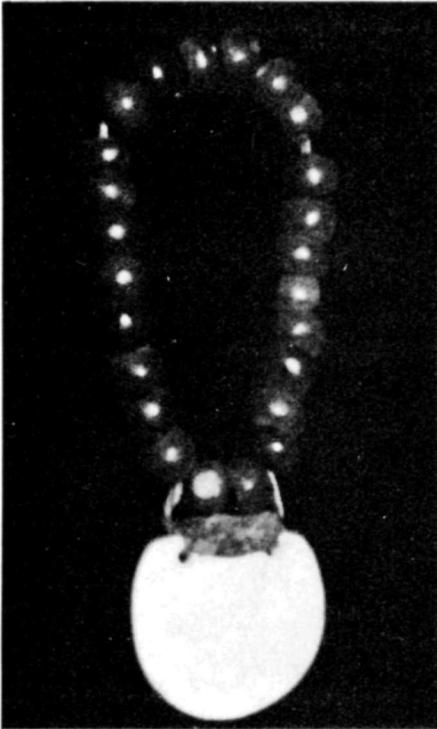
1. The practice of agriculture. Corn and squash were grown in small, mesa top fields and were stored in pits dug in cave floors.
2. No true houses were built at first. Crude brush shelters developed into pithouses at a later date.
3. Excellent weaving was practiced. Skillfully woven baskets, bags, sandals and belts were common.
4. The atlatl, or spear thrower was used.
5. A flexible padded cradle that prevented the flattening of the skull was used.



The lap board provided a good cutting surface when placed on the thigh. The opposite side is scored with marks made by stone knives.

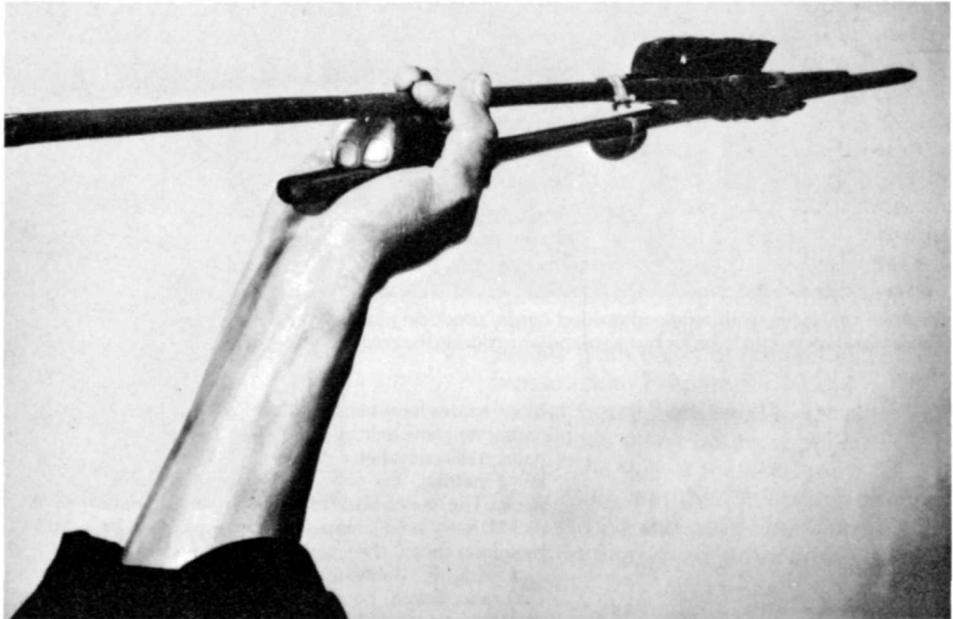


These small crutches, padded with leather, were probably used by a crippled child. (National Park Service photo)



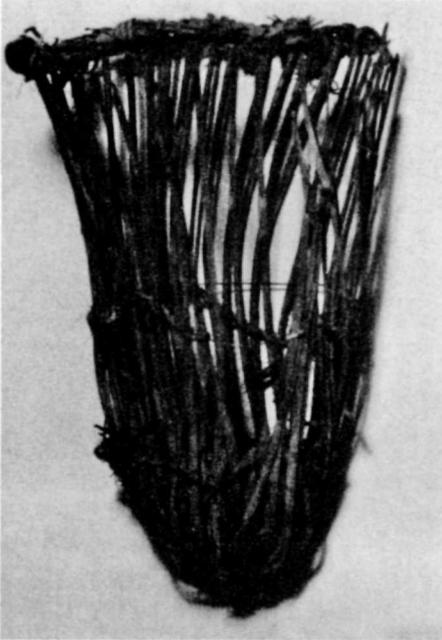
This bracelet of stone beads and bone pendant was found on the left wrist of a mummy.

Atlatls and darts were common in Basketmaker caves and were used for hunting and defense of the home. The atlatl was simply a mechanical lengthener for the arm. A sudden forward sweep of the arm threw the dart from the rear end of the atlatl. This doubled the length of the arm and gave great force to the heavy dart. Certain aboriginal peoples still use the atlatl. (National Park Service photo)

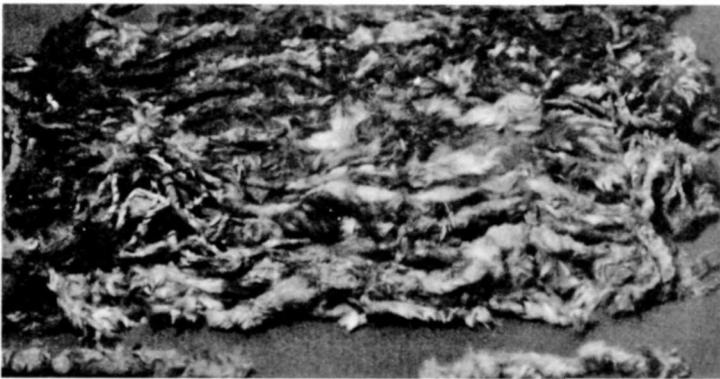


## Basketmaker Weaving

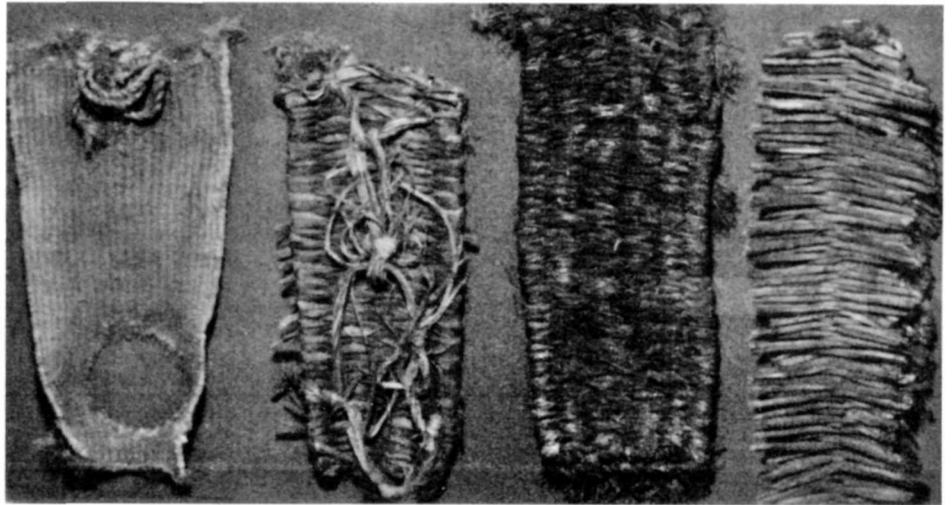
The name "Basketmakers" was given to these people because weaving was their outstanding craft. Having no pottery, they used baskets and bags as containers and their weaving was of the highest quality. The principal products of the weavers were baskets, bags, sandals, sashes, aprons and headbands.



The leaves of an entire narrow-leaf yucca plant were turned back on the stem and made into a basket. (Loaned by the Peabody Museum, Harvard University.)



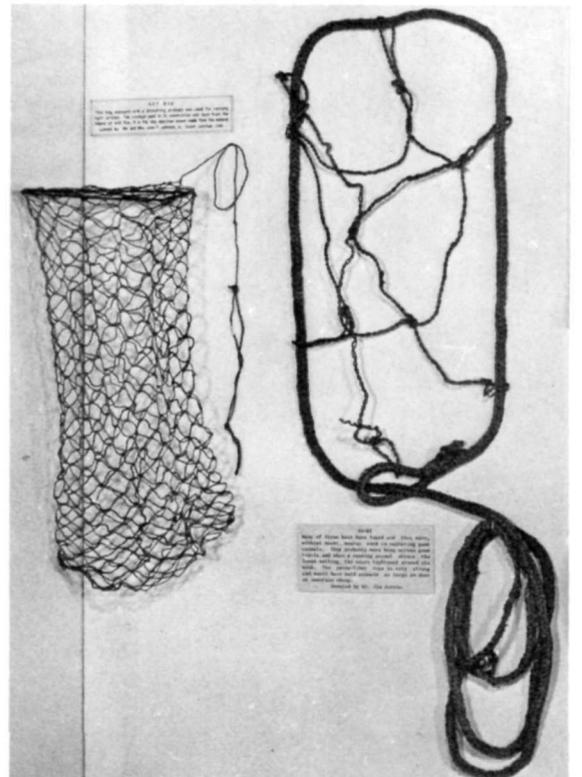
Strips of rabbit fur were wrapped around cords, producing long, furry ropes. These were woven into large fur blankets and worn during the cold winter months.



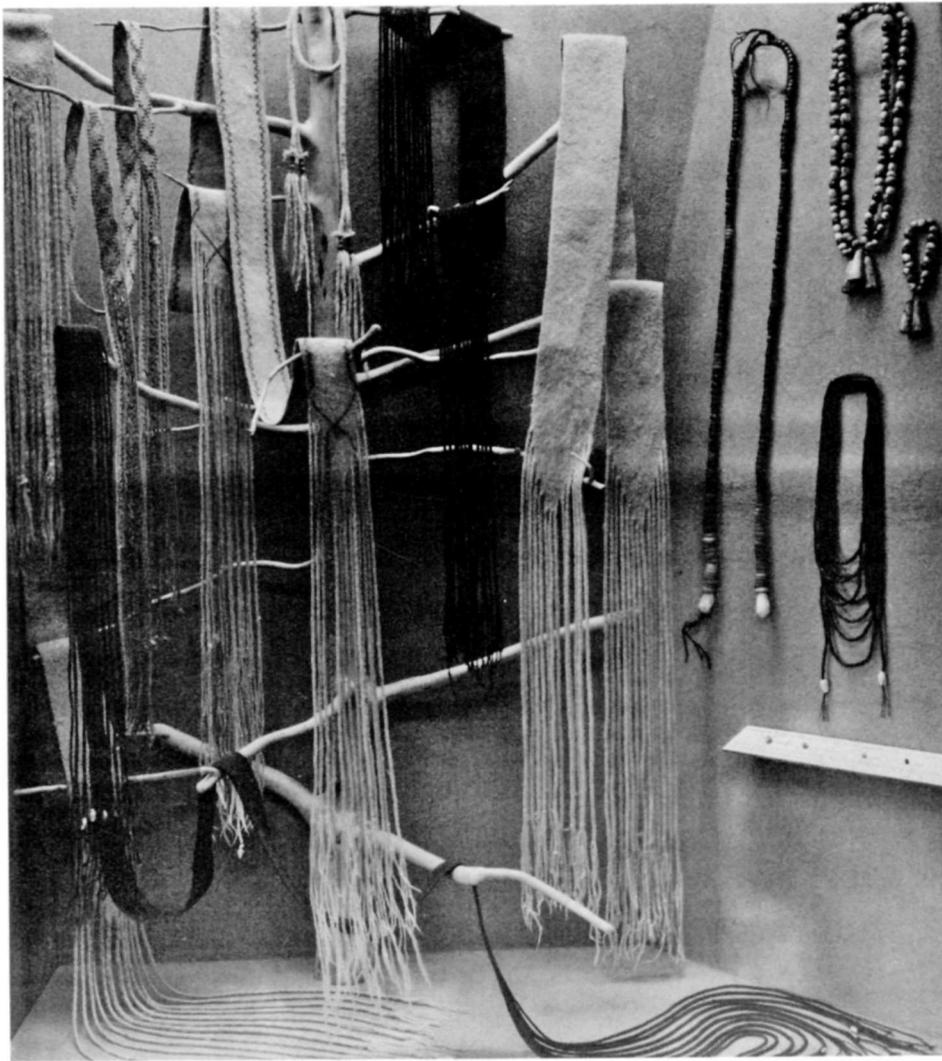
Sandals of this period had square toes and the toe was often fringed. They were woven of yucca fibers, leaves and cords; a few were made of juniper bark. They were held on the foot by toe and heel loops.



Cradleboards, such as this, were probably used by Basketmaker mothers to carry their infants on their backs. This particular one is made of about 100 willow rods. The oak frame is bound to the willow by yucca fiber cord. The piece of deerskin may have acted as a footrest.



Many snares have been found which were used in capturing game animals. They were hung across game trails and when a running animal struck the loose netting, the snare tightened around its neck. The yucca-fiber rope is very strong and would have held animals as large as deer or mountain sheep. (Net bag, on left, loaned by Mr. and Mrs. F. Johnson, Jr., Grand Junction, Colorado. Snare, on right, donated by Mr. Jim Jarvis. National Park Service photo)



(National Park Service photo)

## An Ancient Style Show

### Dog Hair Sashes

These magnificent sashes are braided of very fine yarn spun from dog hair. The big white sash, braided of 119 strands, is over nine feet long. The wide sashes had been folded and tied in a bundle with the little square-braided sash. The bundle was buried in a cist dug into the dry, sandy floor of the cave. Perfectly preserved, the sashes are as strong and pliant as the day they were braided, some 1,500 years ago.

Much of the clothing worn by the Modified Basketmakers consisted of loose skins and robes. The sashes probably were used as wraparound belts to hold such garments in place. As these beautiful specimens show so little wear, they possibly were worn only on special occasions.

The dog accompanied man to the New World and was used in many ways by different tribes. The Basketmakers seem to have been the only group to have spun dog hair into yarn, but the custom may have been widespread. The use of this material in textiles apparently did not persist into later Pueblo times, but the evidence for such use may be lacking.

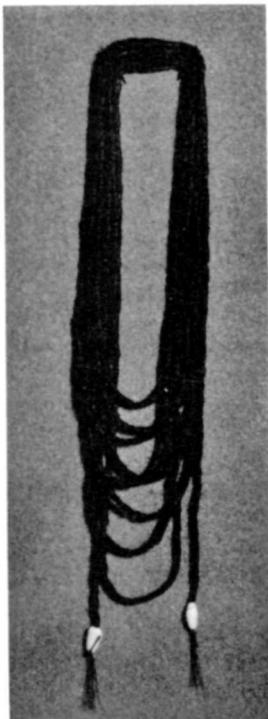
The sashes displayed here were found in Obelisk Cave in the Lukachukai Mountains of northwestern Arizona by Dr. Earl H. Morris. Following his death, Carnegie Institution donated them to the University of Colorado, Arizona State and the Mesa Verde Museum. They are usually exhibited here since it is the museum nearest the place of origin.

### The Basketmakers Were Fond of Jewelry

The long necklace of pink hornstone and black lignite beads is strung on human hair cord.

The matched set, necklace and bracelet of stone and bone beads and pendants, is strung on buckskin thongs.

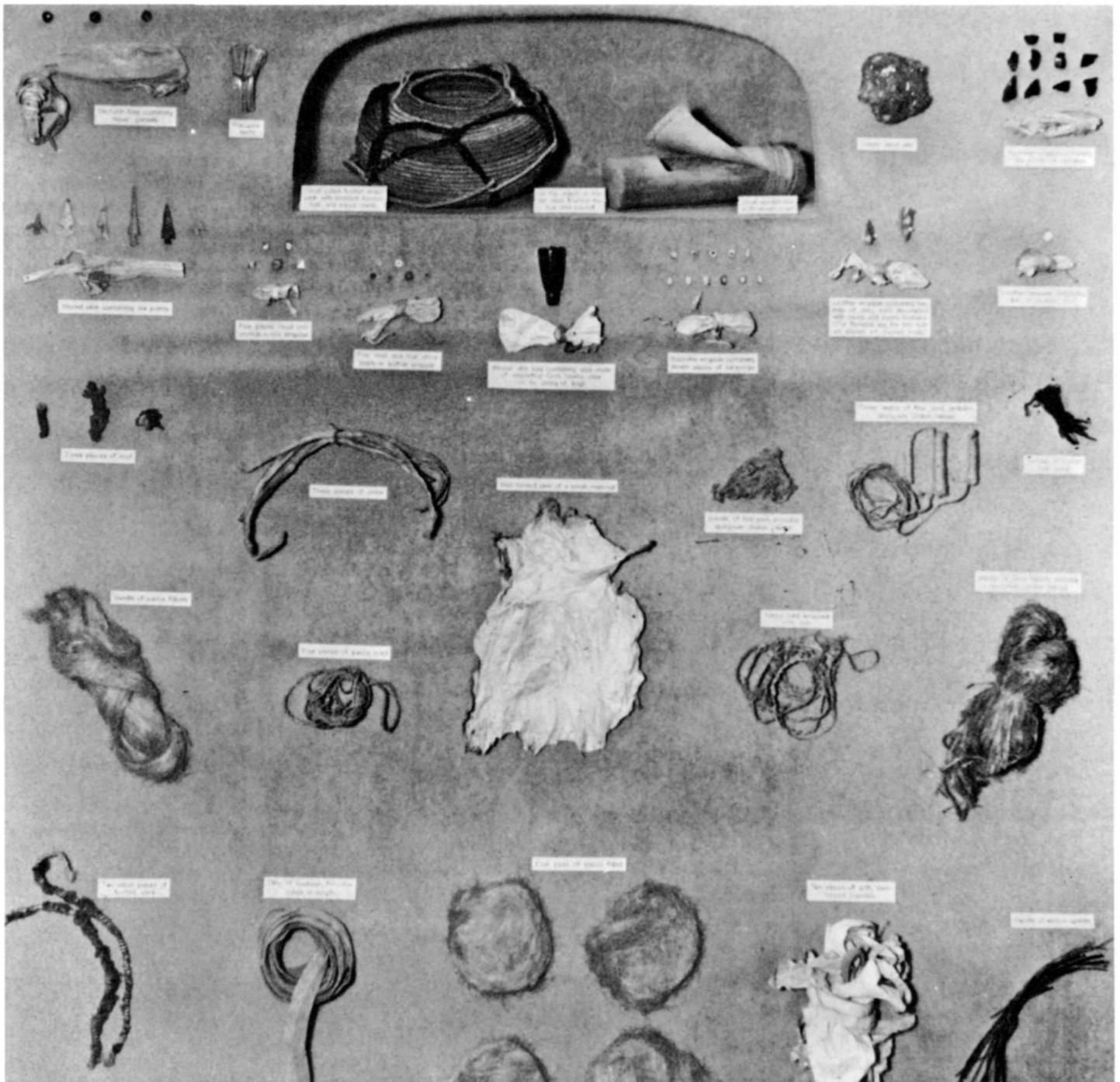
The third necklace, composed of 1,242 juniper berry beads, has been restrung. The rich brown color results from years of contact with human skin. Preparation of the juniper berry from seed to bead represents many hours of patient labor. The tips of the seed were ground off, and then the rough beads were strung and pulled back and forth on a grooved stone until smooth.



Juniper berry necklace.  
(Donated by I.F. "Zeke" Flora,  
Durango, Colorado.)



Stone and bone bead bracelet, part  
of a matched set. (Loaned by  
American Museum of Natural  
History.)



(Loaned by Mr. John Voelter, Cortez, Colorado. National Park Service photo)

## Medicine Man's Kit

The objects shown here were the ceremonial equipment of a Basketmaker medicine man of about 1400 years ago. Objects like these are still used by present day Indian medicine men.

The Indian medicine man was both doctor and spiritual leader. It was his duty to provide for the well-being, health and happiness of his people. The objects in his kit, believed to have magic power because of the supernatural spirits that lived in them, were used in elaborate ceremonies that combined magic, prayer, chants,

sweatbaths, suggestion, and the medicines made from various materials. In these ceremonies, the medicine man fought against evil spirits, tried to cure the sick and injured, prayed for rain, good harvests, successful hunting and all other things that affected the well-being of his people.

When this kit was found, all of the objects were in the wooden box and the basket. They had been buried in a bark-lined cist in the floor of a dry cave, and because of the dryness, were preserved.

Many of the items in the kit were in wrappers of weasel or buckskin. A few of the items found in the basket and wooden box include a stone disc, shell beads, quartz crystals, garnets, porcupine teeth, points, galena (lead ore), stone drills, disc of abalone shell, roots, pieces of sinew, human hair cords, yucca pads, and the well-tanned skin of a small animal. One of the more interesting items is a leather wrapper that contained a human thumb (not displayed) decorated with beads and parrot feathers.

## Modified Basketmaker Period — AD 450 to 750

About AD 450, the Basketmakers learned how to make pottery and build houses, and a little later, how to use the bow and arrow. These three developments caused a great change, thus modifying their way of life; so from AD 450 to 750, the people are known as Modified Basketmakers. It is important to note that the people themselves did not change. They were the descendants of the Basketmakers and were of exactly the same physical type.

### Bow and Arrow

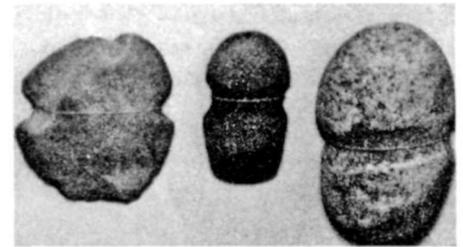
The bow replaced the atlatl and was superior in all ways. It was more accurate, had longer range and could be fired more rapidly. This new weapon made long range hunting possible and enabled the Basketmakers to capture many animals that had previously eluded them. It also made the defense of the

home easier. The arrow points were smaller than those used on atlatl darts. Corner-notched points are typical of the period. Sometimes the two barbs were of different lengths.

### Pottery

Before pottery came into use, cooking was done in baskets. The basket of food was placed near the fire and hot stones were dropped in to bring it to a boil. This was a slow, laborious task, and the food was probably never thoroughly cooked. Baskets were also used for carrying water but were never perfectly satisfactory for this purpose.

The Basketmakers probably borrowed the idea of making pottery from other tribes to the south. They borrowed only the idea, however, and were forced to go through all the experimental stages themselves.



Grooved stone axes and mauls appeared early in this period. They were highly important in building houses and in shaping stones for various purposes.

### Houses

Houses, commonly called pithouses or earth lodges, were used by many of the early Indians. The Basketmakers probably borrowed the idea from some other tribe. It has been suggested that the pithouse was an outgrowth of the early storage cists that were dug in the floors of the caves, but the intermediate steps have not been found.

## The Beginning of Pottery

Pottery is important to the archaeologist. Each group of people developed a characteristic type of pottery. Study of the pottery from a ruin indicates the comparative age and the culture to which it belonged. Much of our knowledge of the sequence of cultures has come from the pottery.

### Stages of Development

Untempered Pottery. At first, the Basketmakers tried to make pottery from pure clay. This pottery cracked when it dried and was useless. A tempering material, such as sand or grit, is necessary to keep pottery from cracking as it dries.

Grass and Straw Temper. Realizing something was needed to hold the clay together, the potters mixed in grass and straw. These held the clay together but burned out when a vessel was placed on a fire, leaving it full of holes.

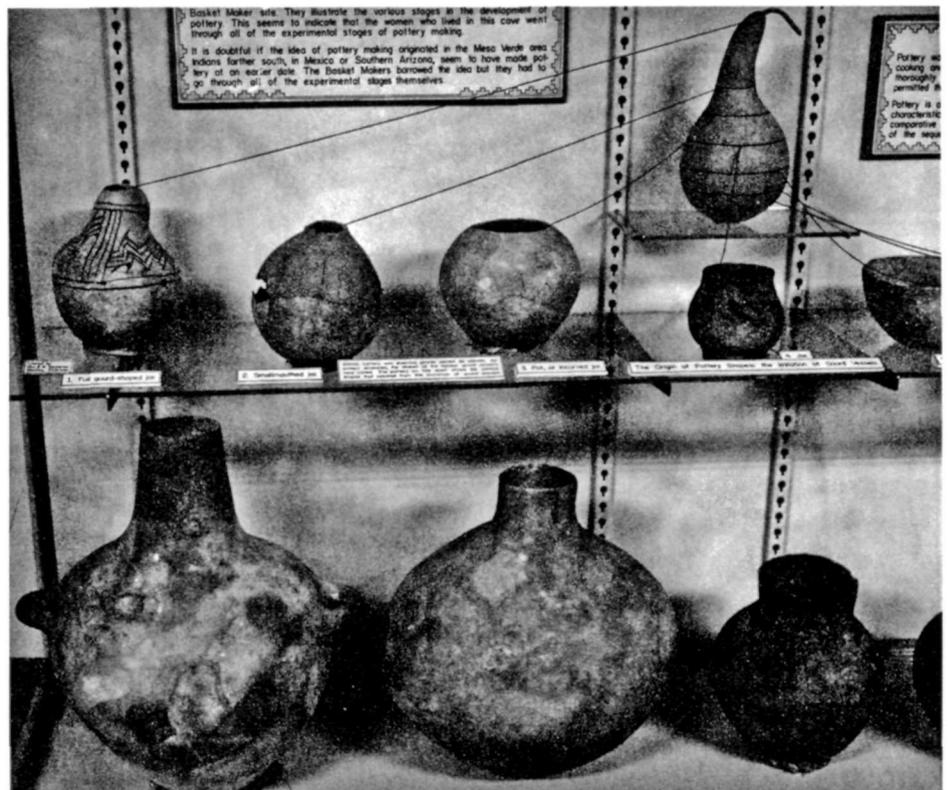
Micaceous Grit - A Perfect Temper. At last the Basketmaker women found that micaceous grit made a perfect tempering material. When this grit was finely ground and mixed with the pottery clay, it prevented cracking. Micaceous grit is abundant in Mesa Verde.

Well Tempered Pottery. Pottery made from clay and micaceous grit was strong and serviceable. After it was baked, or fired, it was perfectly waterproof and could be used for all ordinary household purposes.

Decorated Pottery. The first pottery made by these people was a plain gray ware. Later, they began to apply simple decorations in black and red. The decorations became more

and more elaborate and the art of pottery making reached its height in the Mesa Verde region in the Great, or Classic Pueblo Period.

Before pottery was invented, gourds served as utensils. As pottery developed, the shapes of the familiar gourd vessels were copied. They range in shape from the full-gourd shaped jar to the plate. (National Park Service photo)



## Step House Cave — A Modified Basketmaker Site

Step House Cave is really the type site of the Modified Basketmaker culture and is important in that it was there that a culture older than that of the people who occupied the cliff dwellings was first recognized. After finding two pieces of Modified Basketmaker pottery in the cave in 1891, the Swedish archaeologist, Gustaf Nordenskiöld, said, "It is possible that both these vessels are older than the rest of the pottery from the cliff dwellings; perhaps they are the work of a people who inhabited Step House Cave before the erection of the cliff village."

Step House Cave was partially excavated in 1891 by Nordenskiöld. It was completely excavated by Superintendent Jesse L. Nusbaum in 1926. If you visit Step House Cave today, you will see the remains of three subterranean pithouses of the Modified Basketmaker Period (c. AD 600) and a small cliff dwelling of the Great Pueblo Period (c. AD 1200).

### Stratigraphy

Archaeological remains are often found in layers. In any site, the oldest layer is on the bottom and the newest layer is on top. This is always the clearest evidence of the respective ages of the different cultures. The term "stratigraphy" is applied to these built-up layers.

The stratigraphy of Step House Cave began with the natural earth and rock floor of the cave. Then three Modified Basketmaker pithouses were dug into the cave floor and occupied from AD 600 to 700. This was covered by a layer of refuse that accumulated during the years the Modified Basketmakers

The clay jar cover bears the imprints of eight corn cobs.



occupied this cave. Then followed a layer of sand and rocks that fell from the cave roof during the period when it was not occupied. Later, a small cliff dwelling of the Classic Pueblo Period was built and occupied from about AD 1100 to 1276. While the Pueblo Indians were living in the cave, a layer of refuse and turkey droppings accumulated. Finally, a layer of sand and rocks accumulated after the Pueblo Indians left their homes in the caves.

### Pithouses

During the Modified Basketmaker Period, hundreds of pithouses were constructed in Mesa Verde, both on the mesa tops and in caves. Each was the home of a single family.

Most pithouses that have been found in Mesa Verde were

destroyed by fire. Many objects used by the people in their daily lives have been found in the burned pithouses and some are displayed in this exhibit. No burned human remains have been discovered. The reason for the burning is unknown.

During the centuries that have passed, the remains of the pithouses have become covered with earth. The only evidence of them today is the few pieces of fire-reddened sandstone that remain on the surface.

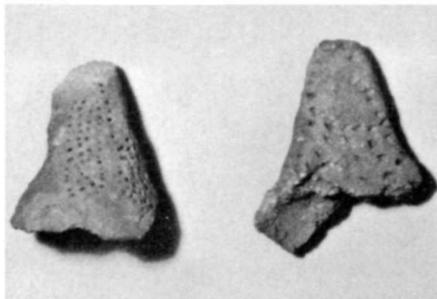
When a pithouse is excavated, the pit is found intact. The only remains of the roof are the charred poles and burned clay. In the pit, often crushed by the fallen roof, are found the tools, implements, and utensils of the former inhabitants.

Basketmaker women ground their corn into meal by placing it in the groove of the metate and grinding with the mano.



## Archaeologists Do Not Understand These

In any archaeological excavation, articles are found for which there seem no practical uses. These are two of the many puzzling items in the Mesa Verde collection.



## The Development of Pueblo Architecture

Pueblo architecture developed slowly over a period of several centuries. The first step was a crude pithouse built about AD 400. The pithouse developed into both above ground living rooms and into the subterranean ceremonial rooms called kivas.

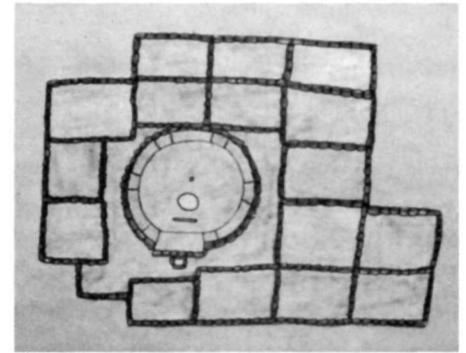
With the development of the first adobe house, vertical walls were perfected. The Indians began to join the houses together and the first pueblos or villages resulted. At first, these pueblos were long, curved rows of living rooms with small storage rooms behind them. Sometimes, several rows of rooms were joined together. In between the rows of houses, a few of the old type pithouses were constructed, a step in the development of the kiva.

As construction techniques evolved, the houses were built of well-shaped blocks of sandstone set

in a mud mortar. The Indians now lived in widely scattered small villages of "unit-type" pueblos that usually consisted of a single kiva surrounded by a number of living rooms. The buildings were from one to four stories high with floors and roofs constructed of poles and adobe. In size, the pueblos varied from six or eight rooms and one kiva to over 200 rooms and a score of kivas.

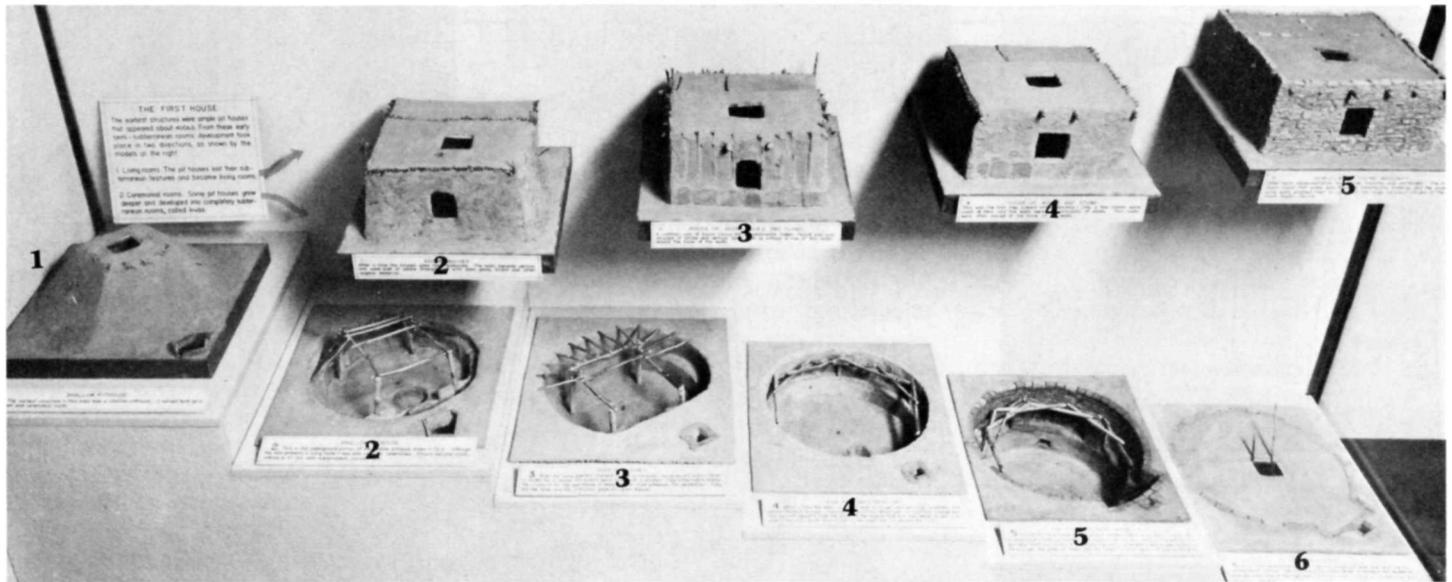
Architectural development reached its peak towards the end of the Mesa Verde occupation when great pueblos such as Cliff Palace, Spruce Tree House and Far View House were constructed.

The excellence of the workmanship is evident by the fact that after 700 years some are in a remarkable state of preservation. Many of the roofs are still in place and the original plaster and paintings are still on the walls.



Ground plan of unit-type house.

(National Park Service photo)



1. Shallow Pithouse. The earliest structure was the shallow pithouse. It consisted of a shallow pit covered with a head high roof of poles and adobe. It served both as a living room and a ceremonial room. Pithouse villages were located both in the alcoves and on open mesa tops. The villages were formed by haphazard groupings of separate structures.

### Adobe House Development (top row)

2. Adobe House. After a time, the houses grew more elaborate. The walls became vertical and were built of adobe and strengthened with bark, grass, sticks and other vegetal material.

3. House of Adobe, Poles and Slabs. A common type of house during the Developmental Pueblo Period was constructed of adobe and vertical poles, with or without a row of thin slabs around the base of the walls.

4. House of Adobe and Stone. This was the first step towards stone masonry. Only a few stones were used at first and the walls were still

principally of adobe. Thin slabs were often placed at the base of the walls.

5. Horizontal Stone Masonry. After much experimentation, true stone masonry was perfected. The Indians found that stone was the most satisfactory material and the strong, solid walls enabled them to construct the large, compact villages of the Great Pueblo Period.

### Kiva Development (bottom row)

2. Shallow Pithouse. This is the underground portion of the shallow pithouse shown in the first model. Although this was primarily a living room, it was also used for ceremonies. Rituals became standardized to fit the semisubterranean, circular room.

3. Deep Pithouses. When the living quarters changed to the rectangular, aboveground rooms shown in model 2 in the top row, the priests were faced with a problem. They either had to change their rituals to fit the new house or keep the old style pithouse for ceremonies. They did the latter and the pithouses gradually were built deeper in the ground.

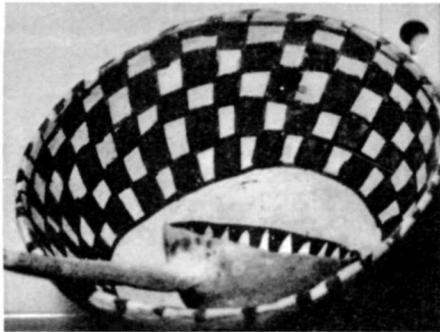
4. Kiva Features Develop. After a time, the deep pitrooms were no longer used as living quarters and certain standard features, required by the rituals, developed. An important change was that six roof supports took the place of the original four and were moved over against the walls where they rested on the shelf (banquette) that encircled the room.

5. The Standard Mesa Verde Kiva. During the Great Pueblo Period, most of the Mesa Verde kivas were circular, subterranean rooms with six masonry roof supports resting on a shelf or banquette. The ventilator shaft was usually on the south side in alignment with a deep recess in the kiva wall, the deflector, fire pit, and the "sipapu," a small ceremonial hole in the floor.

6. Kiva Roofs. Kiva roofs were constructed of logs and adobe and were level with the surrounding earth surface. The hatchway in the center served as entrance and smokehole, while the small hole at the right was a ventilator shaft through which fresh air was drawn into the kiva.

## Developmental Pueblo Pottery

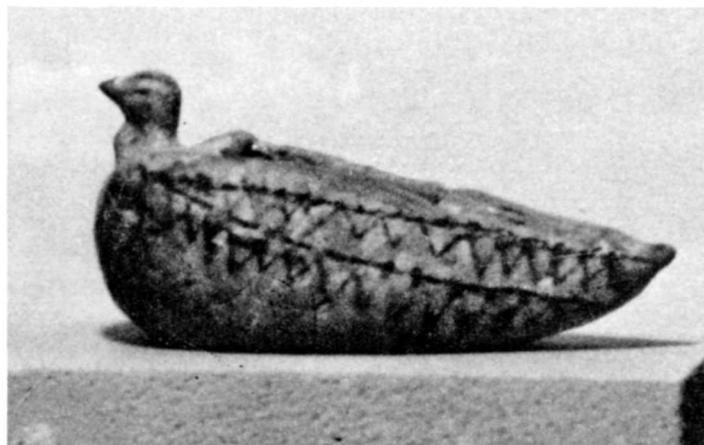
The 350 years of the Developmental Pueblo Period saw many changes in pottery techniques, shapes, surface finishes and decoration. The pottery shows progressive development from the simple wares of about AD 750 through various stages of experimentation to the advanced wares of AD 1100.



Stirrup-handle water jar.



The tri-lobed pitcher, minus handle and neck, is unusual in that the partitions are carried out inside the body.



Bird-shaped vessels probably were used to hold small personal items.



## Cooking and Storage Utensils

The first cooking jars were constructed by shaping the bottom of the jar in a basket or bowl, then building up the body of the vessel by adding wide bands, or fillets of clay. Soon after the coiling technique developed, it became obvious that it was easier to pinch, rather than press, the rope of clay upon itself. The vessels were thus less subject to fracture along the lines of coil.



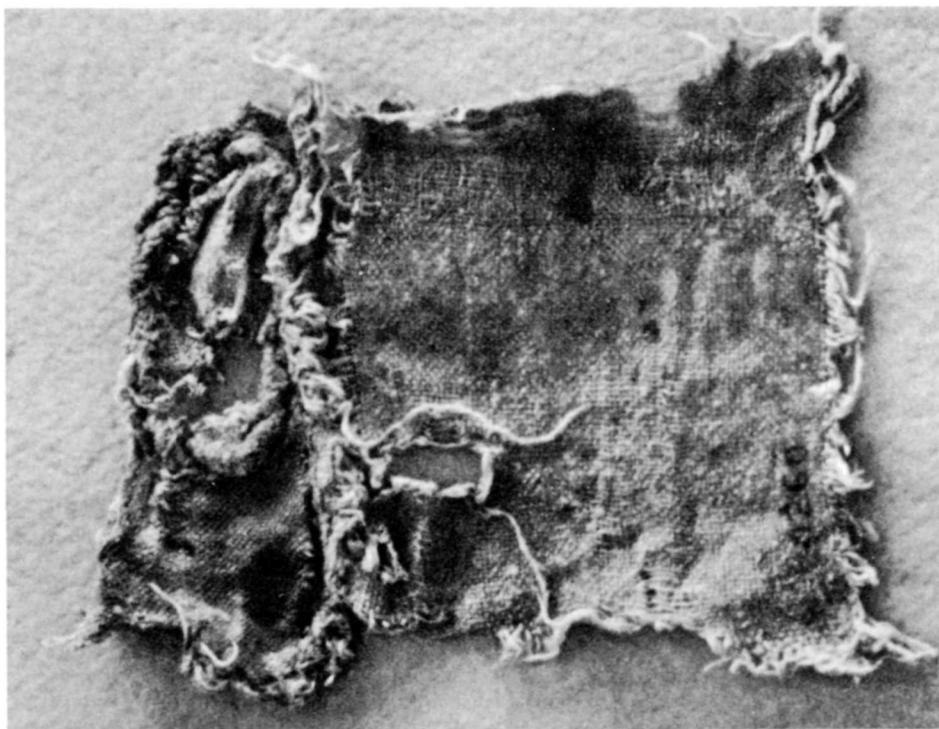
## The Use of Cotton

The Pueblo Indians of this region began to weave cotton cloth about AD 800. At first, small articles were woven; but by the twelfth century, large pieces of cloth were common. Experiments indicate that cotton will not grow at Mesa Verde. The cotton used here was obtained by trade from Pueblo Indians living at lower elevations in those warmer areas to the south.

### Ancient Spinning Methods

A spindle, yarn, and basket of cotton were found in a cliff dwelling in Arizona. They indicate that the ancient weavers spun their yarn exactly as the Navajos and Pueblos do today.

The cotton fibers were straightened, probably with the fingers, and formed into a long, loose mass. One end of the bundle was fastened to the spindle. When the spindle was twirled, the fibers were twisted into a tight, strong yarn.



Although complete cotton blankets were found in the ruins in the early days, the museum has only small pieces in its collection.

## House Construction

During the Developmental Pueblo Period, the inhabitants of Mesa Verde evolved a method of constructing their homes that carried on through the Great Pueblo Period that followed. These buildings, called pueblos, were built of stone. Large blocks of native sandstone were dressed with hard stone tools and lain in mud mortar. The buildings were from one to four stories high, with intervening floors and roofs constructed of poles and mud. The doors were small and there were few windows.

The number of rooms in a village ranged from six or eight to over 200. All of the rooms were built in a compact group, thus forming one large structure. The villages on the mesa tops faced south; those in the alcove shelters faced toward the canyon. The kivas, or ceremonial rooms, were built in the open courts, usually in front of the house.

During the AD 1000 and 1100's, hundreds of villages of surface pueblos dotted the mesa tops and the broad, shallow heads of the larger canyons. After AD 1200, most, if not all of the surface pueblos were abandoned and cliff dwellings were constructed in the more defensible locations in alcoves and on cliff ledges.

### Construction Materials

All of the beams in house construction were cut with stone axes. The axes were not sharp and the cutting must have been a slow process. Hammerstones, stone axes and heavy mauls were used to break and dress the building stones.

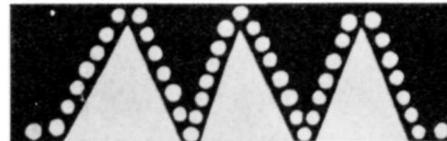
The Indians used large, rectangular blocks of sandstone in the construction of their homes. After the stone was dressed, the surface was usually pecked with a sharp stone until a dimpled surface resulted.

Rough sandstone blocks were common on the mesa tops and along canyon walls. It required only a small amount of work to convert these blocks into building stones.

The walls of kivas were often plastered many times. Sometimes a coat of plaster was added to cover the soot that had accumulated; sometimes it was added to cover paintings after they had been used in ceremonies. Both red and white clay were used for plaster while gray clay usually was used for mortar.



Reproduction of a wall painting from Cliff Palace.



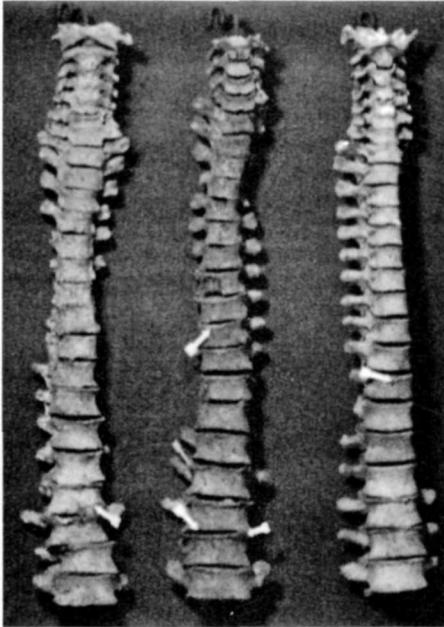
Reproduction of a wall painting from Spruce Tree House.



This sample taken from Far View House consists of forty-two layers of plaster.

## Disease and Injury

Studies of the bones and teeth of the ancient Pueblos revealed that, like people today, they suffered disease, injury, abnormalities and malfunctions. Some afflictions of the Mesa Verdeans were: arthritis, caries (dental decay), attrition (wearing down of teeth), periostitis, osteoporosis, symmetrica, bony tumors, malalignment of bone and teeth, pyorrhea, rickets, osteomyelitis, impactions, fractures, dislocations, and abscesses.



Spinal arthritis, often found in the aged, may also be the result of injury, overweight, faulty posture, dietary deficiency or prolonged exposure to cold and dampness.



Most adults suffered attrition, the grinding down of the teeth. This skull of a very old man indicates he suffered many dental problems, including attrition.

## Clothing

During warm weather, the cliff dwellers wore little clothing, perhaps only a cotton loin cloth and sandals.

In winter, they wore sleeveless buckskin or cotton shirts and loin cloths. For warmth, they wrapped

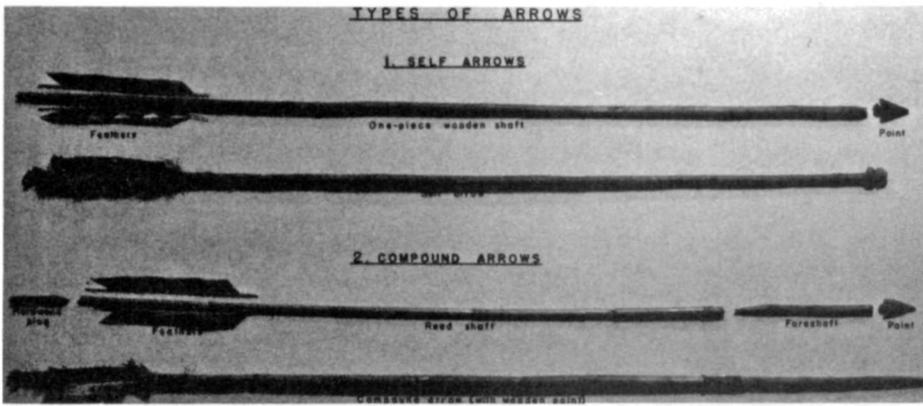
themselves with buckskin or feather blankets and may have worn leggings of human hair or feather cloth. Buckskin moccasins or sandals stuffed with bark, corn husks or feathers protected their feet.



Winter clothing

Summer clothing





## Hunting Equipment

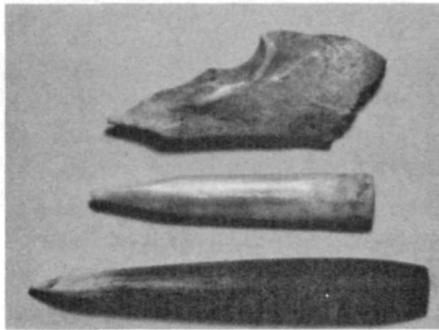
Arrows consisted of two types: self-arrows made of single pieces of wood and compound arrows made with cane shafts and hardwood foreshafts. Throughout the world, arrows are of these two types. This uniformity may indicate that after their invention, the idea spread from one group of people to another.

Very few unbroken arrows have been found in the ruins. The fragments that have been found indicate the cliff dwellers used both the self and compound types.

All cliff dweller bows that have been found were made of a single piece of wood. The strings were probably made of yucca cords or sinew.

Arrowpoints of the Great Pueblo Period were usually rather small and poorly made. Since the cliff dwellers were farmers, their arrow points were not as important as to people who lived by hunting.

Quartzite, chalcedony, flint, chert, jasper and obsidian were used for arrow points. All of these stones, except obsidian, were present in Mesa Verde or its immediate vicinity. Arrow points were not always made of stone. Sometimes they were made of wood, and the hardened foreshaft was sharpened to serve as a point. These wooden points were probably used to hunt small game.



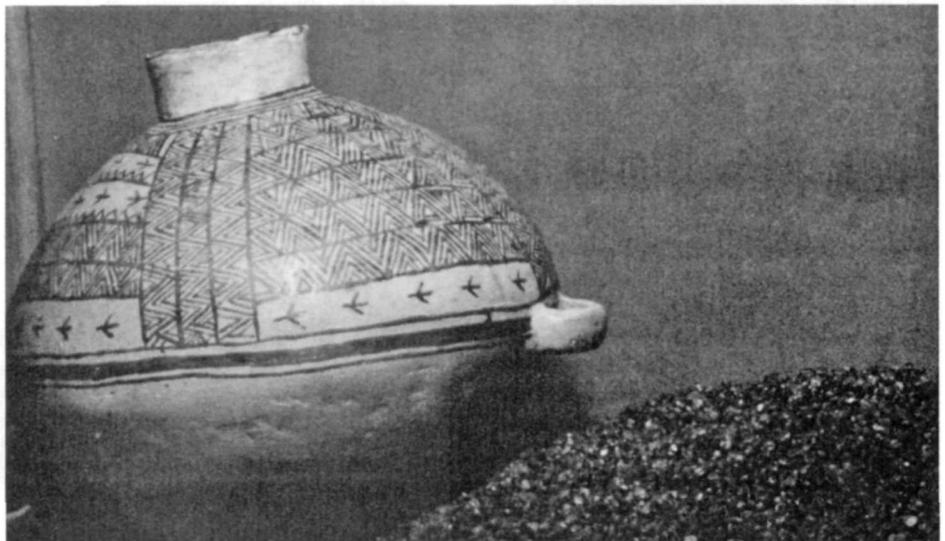
These strong, blunt tools were used in chipping stones for arrow points and knives.

## Prehistoric Corn

Seven centuries ago, this corn was hidden away in a small alcove. The corn and a small stone were placed in the jar and the jar was buried in the alcove floor leaving only the neck exposed. A small bowl, turned upside down over the mouth of the jar, served as a lid and protected the corn from insects, mice and rats. The corn weighs 31 pounds, 4 ounces, and measures 22 quarts. This is the largest amount of corn ever found in this region.

The two pieces of pottery are of a type made between AD 1200 and 1276, so the corn must date from that time. It is difficult to determine its original color, but it appears to be a mixture of yellow and red grains.

This find was made in February of 1955 by Robert and Eugene Ismay of McElmo Canyon, Colorado.



## Wild Plant and Animal Foods

The cliff dwellers were farmers, but they probably tried to add variety to their starchy diet of corn, beans and squash. Several species of game animals, large and small, were more or less common in this region and the Indians were skillful enough with their bow and arrows and their snares to add a fairly steady supply of meat to their diets. The bones of many animals were found in refuse piles.

Mule deer are now very common in Mesa Verde and must have been their best source of meat. Mountain sheep, rock squirrels, cottontail and jack rabbits, prairie dogs, dusky grouse and wood rats also were common sources of meat. Present day Indians say the cliff dwellers considered wood rats a delicacy, and prairie dogs are still eaten by modern Indians.

Variety was also added to the diet by the many edible plants that grew in the area. Edible roots, berries, nuts, greens, cacti, seeds and fruits were fairly common, and their food properties were well known. In years of a crop failure, the Indians probably lived to a great extent on the game and wild plants they were able to obtain. Some of the wild plant foods eaten by the cliff dwellers include yucca pods and fruit, devil's claw cactus, prickly pear and pinyon nuts. The pinyon nuts may be eaten raw, or ground, shell and all, into a paste much like peanut butter.

## Religion and Ceremonies

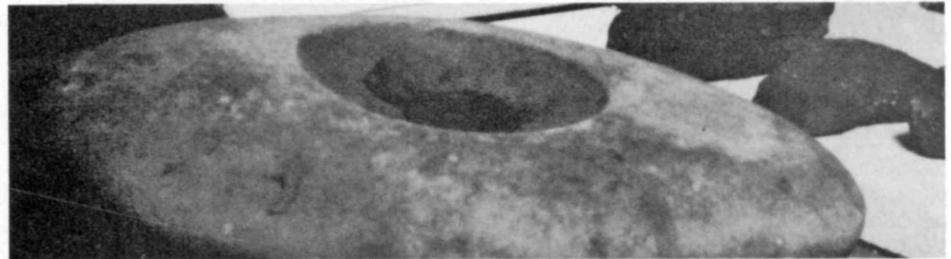
Religious ceremonies were held in underground rooms which are now called "kivas." Small villages had a single kiva, but larger villages sometimes had a score or more. Kivas served not only as ceremonial rooms but also as clubrooms and workrooms and were used chiefly by the men.

The most important ceremonies were probably those in which they prayed for rain since farming was undertaken without irrigation. This is true in the modern Pueblos where such ceremonies as the Corn Dance at Santo Domingo and the Hopi Snake Dance are prayers for rain. These modern ceremonies are extremely elaborate and important. They probably also prayed for the fertility of the seed, for proper growth and for good harvests.

The Pueblo Indians were principally farmers but hunting was important. There were probably a number of minor ceremonies that concerned their hunting activities. This is especially true at the modern Pueblo of the Zuni where the Prey Gods are numerous and of great importance.



An important function of the Pueblo medicine man was the combating of evil spirits that caused disease. This was done in innumerable ceremonies by means of prayers, chants, magic, tricks, sweatbaths, powerful fetishes, and medicines. There was probably some knowledge of the beneficial qualities of certain plants, but most of the treatments were of a ritualistic and magical nature.



This small mortar was used for grinding stones for paint.

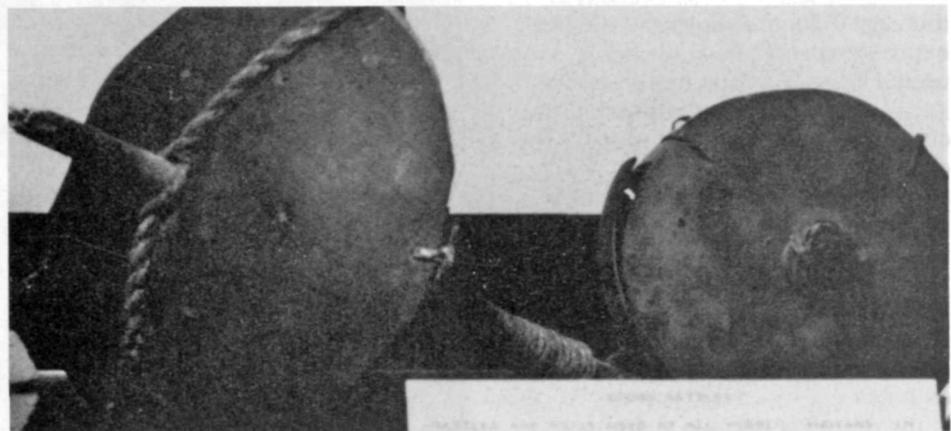


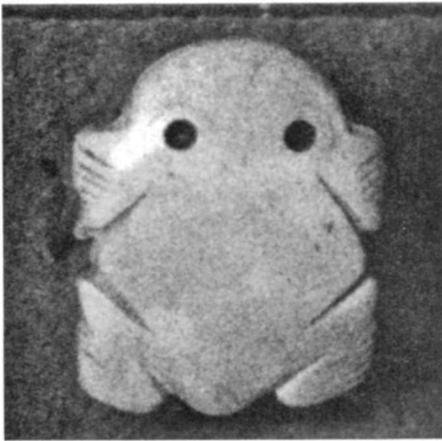
Animal petroglyph. Carved stones, with either geometric or animal figures, are common in the ruins. Many were probably of a ceremonial nature, but their meaning is unknown.



Kiva jar. Jars of this particular shape are usually found in kivas. They were probably used for storing important ceremonial articles.

Gourd rattles. Rattles are still used by all Pueblo Indians in ceremonial chants and dances. Many have been found in the ruins, so evidently they were common.

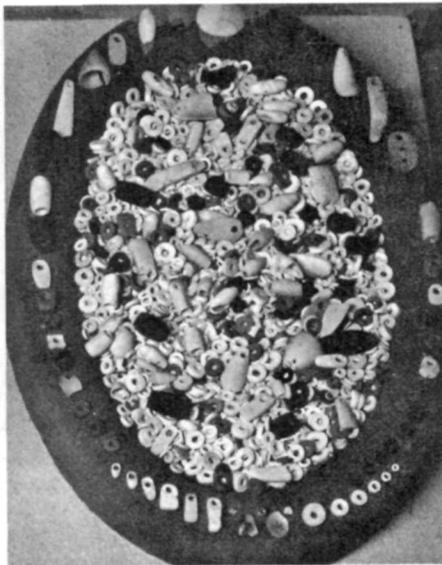




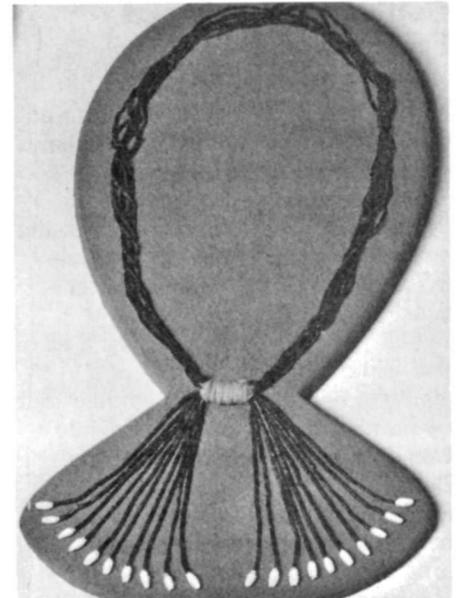
This turquoise frog probably had argillite or lignite eyes. (Donated by Mr. Art Thomas, National Park Service photo)

### Jewelry

From Basketmaker times to the present day, Pueblo Indians have appreciated jewelry. In the Mesa Verde area, a variety of local materials was used in making ornaments. Other materials, such as shell and turquoise, were obtained by trade.



These beads, pendants and inlaid pieces were buried in a pottery jar. The 2,969 items are so varied in size, shape and material that it has been suggested they represent the stock of some ancient trader. (Donated by Mr. Clarence R. Kitchell, National Park Service photo)



This necklace is on its original stringing and was found in a cliff dwelling across the canyon from Balcony House. It is made of 5,715 tiny stone beads and each of the twenty individual strands ends with a white shell bead. (National Park Service photo)

### Basketry and Matting

Since baskets were made of fiber, they were not as well preserved in the ruins as objects made of bone and pottery clay. Enough baskets and basket fragments have been found, however, to indicate they were widely used by the ancient Pueblo Indians. They were used in carrying burdens and for storing roots, nuts, beans, corn and dried foods of all kinds.

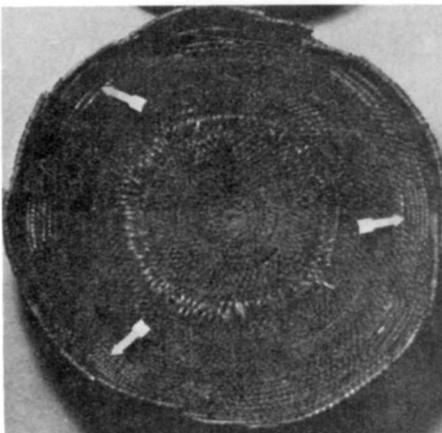
Mats were made of reeds, slender withes, and yucca fibers. They served as floor coverings, as curtains for doors and windows, and as burial wrappings for the dead. Present day Pueblo Indian women weave the mats and baskets, and it is assumed that this was the custom in earlier times.



This basket was made by folding up a piece of bark and sewing the sides with yucca fiber.



This coiled basket is so tightly woven that it is as rigid and hard as a piece of pottery. It would have been more serviceable for many household purposes than pottery for it was unbreakable.



## Cultivated Foods and Food Preparation

The Pueblo Indians who lived in Mesa Verde were farmers and raised corn, beans and squash in small fields on the mesa tops.

The area is an excellent one for dry farming. The red soil is fertile, the growing season is long and the rain fall averages almost 20 inches per year.

Although the Indians gathered all of the wild plant foods that were available and added meat to their diet by hunting, their chief dependence was on their agricultural products. Because of the steady supplies of food that resulted from their harvests, they were able to live in this area for about 1000 years.

Farming was the work of men. They cleared small fields on the mesa tops, probably by burning off the trees and shrubs. The only farming implement they had was a simple digging stick. With this, they loosened the soil for the hills of corn, beans and squash.

Although it is believed that the men did most of the farming work, it is quite probable that the women and children helped with harvesting. The produce was carried to the villages, then dried and stored where it would be safe from rats, mice and dampness. Large quantities of grain were probably kept on hand to take care of years when the crops failed because of drought.

The women cooked over open fires or fireplaces since ovens were unknown. Bread was baked in the ashes or on thin stone griddles. Meat was broiled over the open fire or stewed in large pots. Soups, broths, stews and teas were undoubtedly common. Many wild plants, such as mustards, saltbush and wild onion provided a variety of seasoning.

Corn was the Pueblo Indians' most important item of food, and in some form, it was probably an essential part of every meal. The corn was the variety known as "Flint Corn," and several different colors were grown.

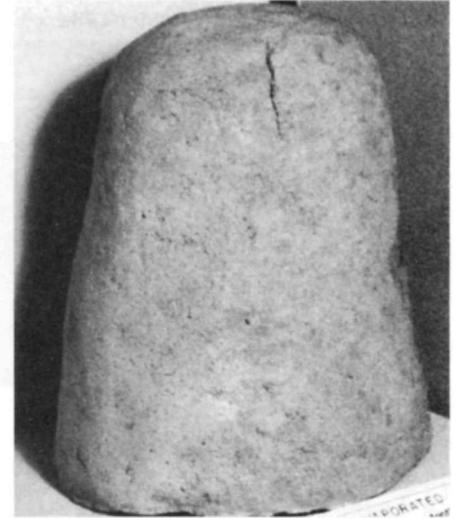
For years, modern Indian corn was grown in an experimental field located on the Cliff Palace road. Good crops occurred on an average of four years out of five. This would indicate that in normal years, the Indians could have been able to grow sufficient corn for their needs.



This bundle of bean vines, tied with yucca cord, was found in Cliff Palace. Beans were probably carried home in this manner for threshing. The beans grown by the Pueblo Indians were a kidney-type pinto, much like the common pinto. They could either be eaten green or stored for use in winter.

Squashes evidently were common for sizeable quantities of stems, vines and seeds were found in the ruins. They were especially important because they could be stored for winter use to break the monotony of meat, corn and beans.

Salt has been found in a number of ruins, an indication that it was used to a certain extent by the Indians. Most of the salt that has been found is the common rock salt variety. The exact source is not known, but there are several deposits in the Southwest. A muddy evaporated salt evidently gathered from the shores of a salt lake and patted into a rock-like shape for easy carrying has also been found. Salt of this type is still gathered by present day Indians at a salt lake just south of Gallup, New Mexico.



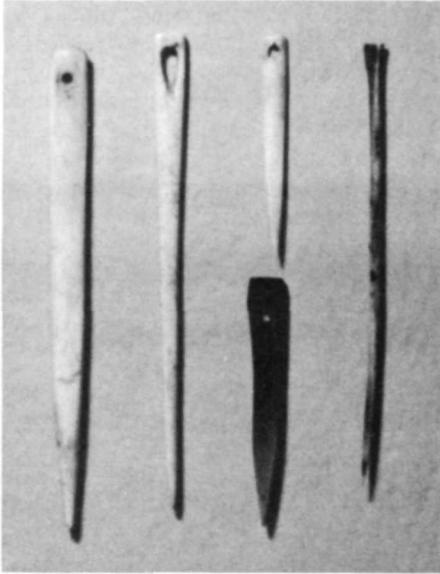
This salt has been patted into a rock-like shape for easy carrying.

In order to bake bread, it was necessary for the women to grind their corn on milling stones. The corn was placed on the larger stone, the metate, and ground by a "washboard" movement of the smaller stone, the mano. The cornmeal sifted into the basin at the lower end. Present day Pueblo women often grind their corn in this manner, and they consider it the most tiresome and disagreeable of tasks.

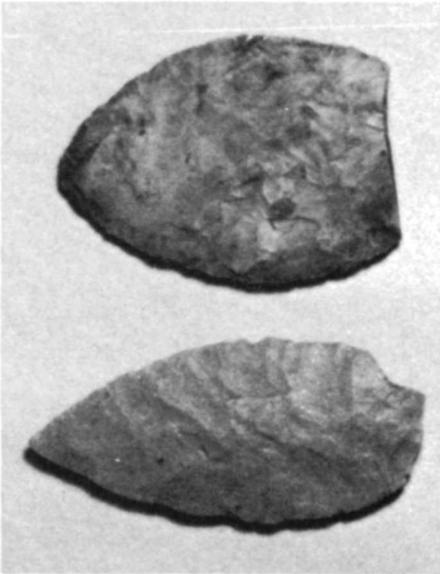


## Tools and Cordage

When a ruin is excavated, many tools like the ones pictured here are found. These were the common, everyday hand tools used by the ancient Indians, and they served the same purposes as many small tools we use today.



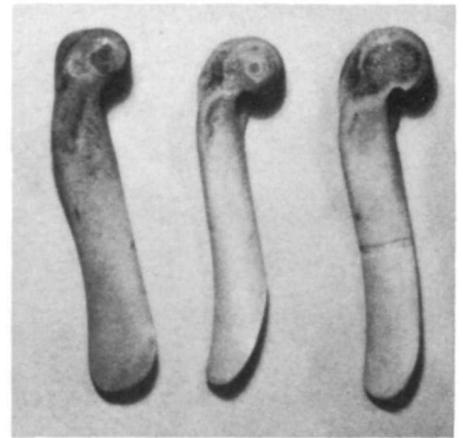
Sewing and weaving tools. More bone awls have been found in the Mesa Verde ruins than any other tool, so evidently they were widely used. Although bones of many animals were used, those of the turkey and deer were the most commonly utilized.



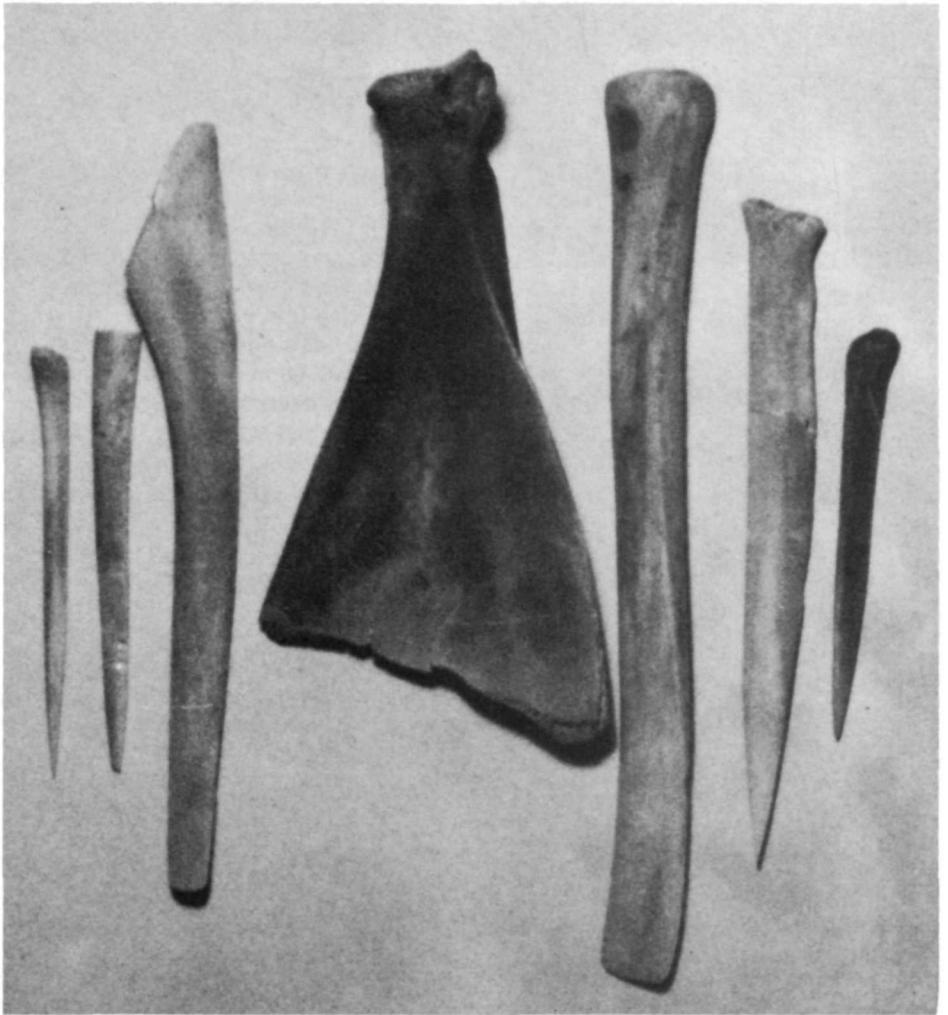
These large blades served as knives and scrapers.



Yucca fiber could be produced in large quantities. The longest single fiber yucca cord found in the ruins is over 1300 feet long. (Donated by Mr. W. D. Ewing, Durango, Colorado.)

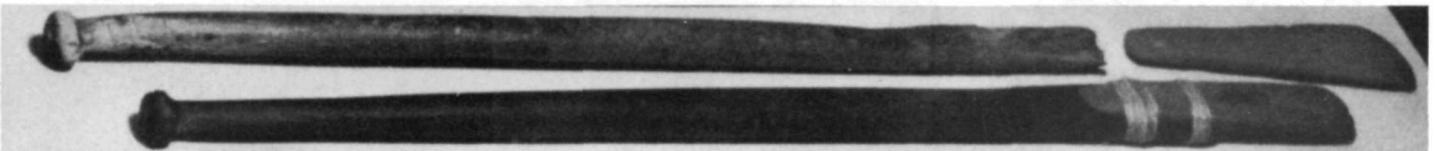


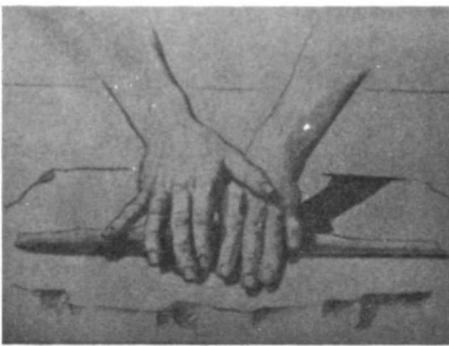
These bone scrapers, or fleshing tools, were made of the leg bones of deer. They were used for scraping the skins.



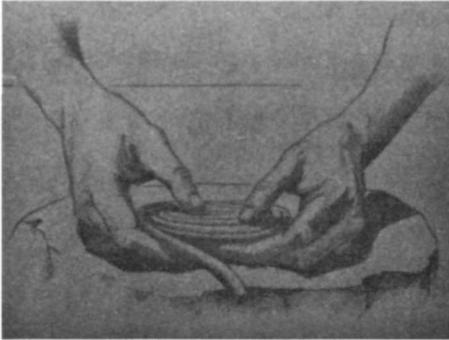
These seven, well-made tools were found together in a kiva in Bone Awl House. Similarity of workmanship and color may indicate they belonged to one man.

Digging or planting sticks, from one to five feet in length, served as hoe and shovel for the ancient Indians. Digging sticks were sometimes fitted with stone blades, and used for planting seeds, chopping weeds and for general digging purposes.

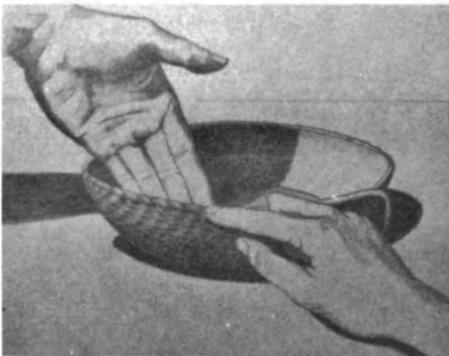




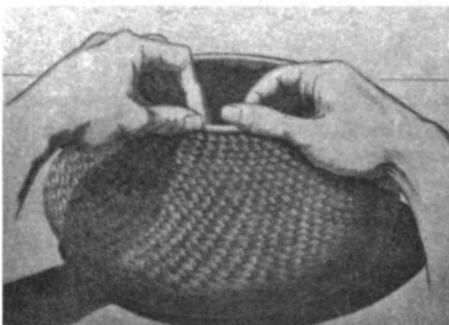
Rolling the coil.



The coiling process.



Pressing the coils together.



Adding the rim.

## Corrugated Pottery

Corrugated pottery, large and small, is usually blackened, an indication they were used for cooking purposes. The foods boiled in these jars were probably roots, berries, wild fruits, vegetables, greens, soups, stews and broths.

Mesa Verde corrugated jars vary greatly in size. Some held as much as five gallons and were probably used for storing water. The slight evaporation that took place through the porous walls kept the water cool and sweet.

The jars are globular, or egg shaped, with wide mouths and flaring rims. The corrugations are fine and regular, the indentations evenly spaced, and the walls thin. Decorative patterns were sometimes produced by varying the corrugations. Small jars occasionally had handles.

### Steps in Making Corrugated Pottery

**Mixing the Material.** All of the materials the cliff dwellers needed were present in Mesa Verde. Good pottery clay and various tempering materials were abundant. The best pottery clay came from the numerous deposits of decomposed shale. The favorite temper was finely ground pieces of pottery. However, fine sand makes a good temper and was sometimes used. The clay and the tempering material were cleaned and finely ground, then mixed together. Modern Pueblo women use about one-third temper to two-thirds clay and mix them thoroughly while dry.

**Kneading the Paste.** After the mixing was completed, water was added to the mixture and kneaded thoroughly, just as bread dough is kneaded. When the paste had the consistency of putty, it was ready for use. It must not be too sticky and

must have strong adhesive qualities. It should be dry enough to crack when pinched.

**Rolling the Coil.** A small piece of paste was placed on a smooth stone and rolled with the hands into a long, thin roll. The thickness of the roll determined the thickness of the vessel that was made. Many pieces would be needed in making a jar.

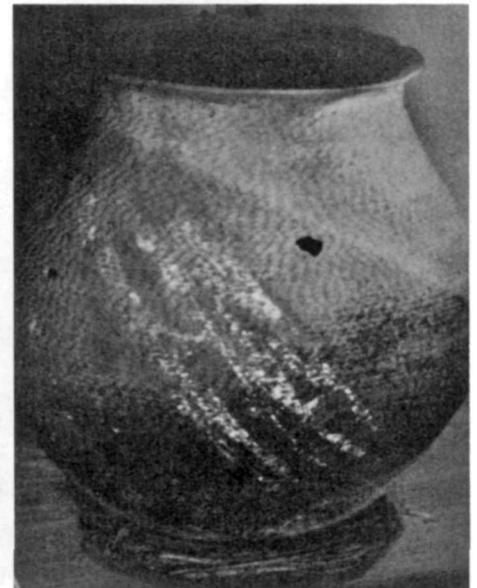
**The Coiling Process.** The long roll of clay was coiled around and around on itself to form a spiral. The point where this spiral began became the center of the bottom of the vessel.

**Pressing the Coils Together.** As each coil was added, it was pressed tightly against the next coil inside. This pressure caused fingerprints in the soft paste. These prints showed only on the outside; those on the inside were smoothed out. Sometimes a small stick or stone was used in pressing the coils together.

**Adding the Rim.** When the coiling was finished, a smoother, flaring rim was added. The vessel was then allowed to dry slowly and was ready for firing. Because of the fingerprints and corrugations, this is called indented-corrugated ware.

### Jar Rests

Because of the rounded bottoms of corrugated jars, rings or rests were necessary to prevent tipping. These rests were made of juniper bark, yucca fibers, or corn husks. They may also have protected the women's heads when carrying jars of water home from the springs.



## Black-on-White Pottery Masterpieces

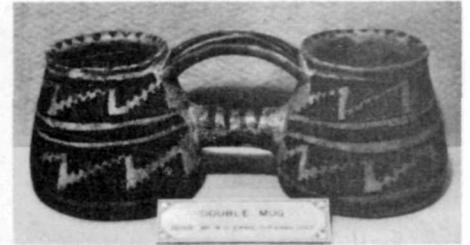
Pottery represents the highest artistic expression of the ancient Pueblo Indians. Mesa Verde pottery is noted for its clear, black, geometric designs on a grayish-white background. The decorations were

painted freehand and indicate a remarkable sense of balance and design. The pieces exhibited here are outstanding examples of Mesa Verde pottery.



This kiva jar is the finest piece of pottery in the Mesa Verde collection. With its perfect shape, elaborate decoration and fine finish, it represents the peak of pottery making in Mesa Verde.

(National Park Service photo)



Double-mug. (Donated by W.D. Ewing, Durango, Colorado.)





### Pottery Shapes and Uses

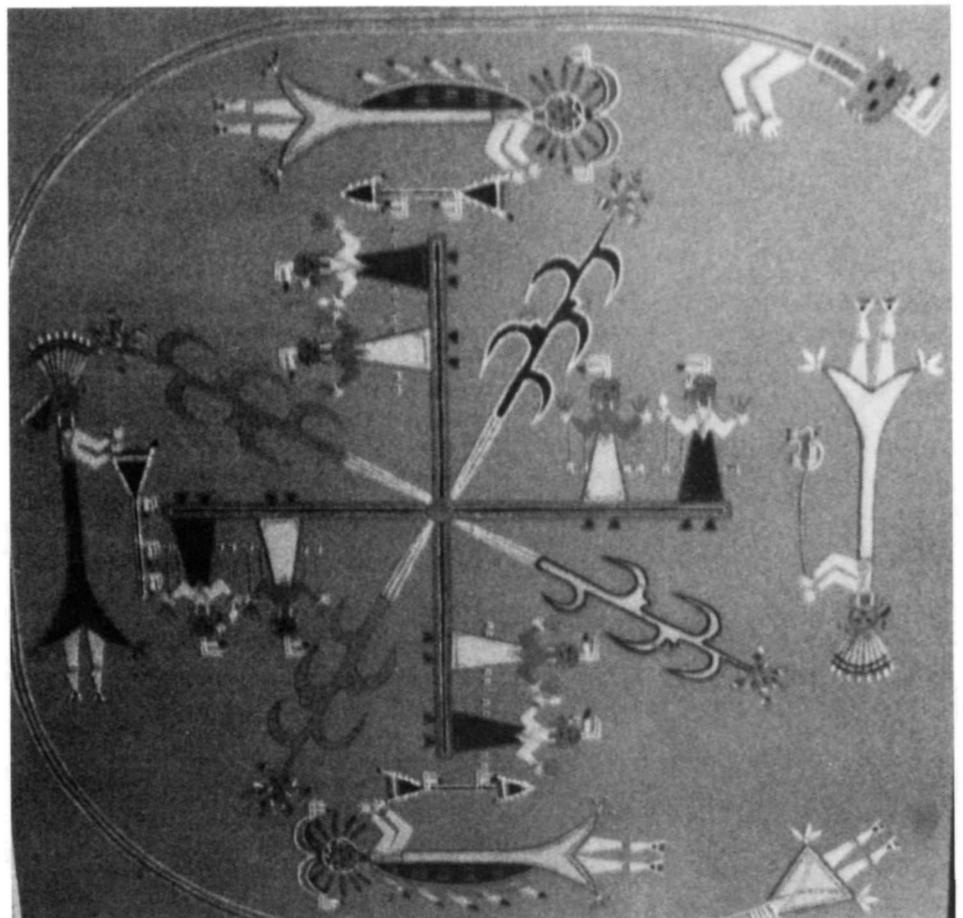
Pottery was highly important in the ancient household where it took the place of the dishes, cooking utensils

and containers of all kinds. Shown here are all of the common forms of decorated pottery: bowls, water jars,

mugs and ladles; and the less common forms: kiva jars, seed jars, canteens and bird-shaped vessels.

### Navajo Sand Painting

During the great winter ceremonies, Navajo medicine men paint these pictures on the floor of the medicine hogan (house). Colored sands are sifted between the fingers to make the pictures which may be as much as eighteen feet square. Sand paintings tell in pictorial form the legends of the Navajos. The designs represent gods, lightning, rainbows, sun beams, mountains, plants, and animals that have religious significance. This is the "Whirling Logs" sand painting from the Yebitchai ceremony. (Donated by Mr. Hillis L. Howie, Indianapolis, Indiana.)





Dr. Jesse Walter Fewkes stands in front of the log cabin museum that was constructed to more properly store uncovered artifacts. (National Park Service photo)

## One Hundred Years of Preservation and Use at Mesa Verde

One of the first to discover and photograph the cliff dwellings in the area was world famous photographer, William Henry Jackson. He was part of a U.S. Geological Survey party that explored the Mancos River Valley in 1874.

The Wetherill brothers from the nearby town of Mancos are credited with being the first non-Indians to discover many of the important cliff dwellings in the Mesa Verde area. Mesa Verde was part of the Ute Reservation at that time. The Utes allowed the Wetherills to winter their cattle in the canyons of the area. It was while they were looking for stray animals that the ruins were located.

Another early visitor to the area was Gustaf Nordenskiöld, the son of a Swedish nobleman. Despite tuberculosis, he traveled to the United States in 1891. While in Denver, he viewed a collection of prehistoric artifacts excavated in Mesa Verde by the Wetherills. Curiosity about the makers of these artifacts brought him to Mesa Verde where he photographed and conducted the first scientific excavations of the cliff dwellings. The results of this work were published in 1893 in a volume entitled "The Cliff Dwellers of the Mesa Verde".

Almost immediately upon establishment of Mesa Verde National Park in 1906, a program of excavation was begun. Most of this early work was supervised by Dr. Jesse Walter Fewkes of the

Smithsonian Institution's Bureau of American Ethnology. At first, the excavations concentrated more on exposing the ruins for public visits than on organized research. A log cabin was constructed for use as a museum and was one of the first in the national parks.

A new superintendent, familiar with the park and its problems, arrived in 1921. He was Jesse Nusbaum, who had helped with the 1907 and 1908 surveys of the major cliff dwellings conducted by the Archaeological Institute of America. After initially living in a tent, Nusbaum and his wife Aileen, designed a permanent residence in the park. The building is a fusion of native Pueblo and Colonial Spanish influences, a style maintained in subsequent park buildings.

A larger and more permanent museum was soon needed to replace the log cabin. Construction of a four-room masonry structure was begun in 1923 with privately donated funds.

In 1924, John D. Rockefeller, Jr. visited Mesa Verde National Park. Mr. Rockefeller, an active supporter of the national parks, took note of the efforts of Superintendent Nusbaum to establish an archaeological museum and donated a considerable sum of money to complete the building, furnish it, and to support a series of expeditions to remote areas of the park to collect specimens for display.

The 1930's were a period of considerable activity in the park. A program of ruins stabilization to

assure the preservation of prehistoric structures was begun, and a major program of conservation and construction was carried out by the Civilian Conservation Corps (C.C.C.). Within weeks of the creation of the C.C.C., a temporary camp was established in Mesa Verde National Park and plans were underway for a major conservation program. Surplus military equipment provided transportation and tools for a work force of 200 enrollees.

Construction programs of the C.C.C. encouraged use of the natural materials available in the park. One of the most abundant materials in Mesa Verde National Park was sandstone, the material which the prehistoric cliff dwellers had used to advantage. Tons of rock were quarried and shaped by hand to provide the construction material for buildings, trails, curbing, fireplaces and other features. The C.C.C. stonework today makes up an important part of the park's historic resources.

The special skills of the C.C.C. enrollees were used in a wide variety of activities, including work in the archaeological museum. Artifacts were cataloged, some were restored, and a set of dioramas depicting life on Mesa Verde was created.

After World War II, increasing visitation necessitated the construction of additional facilities. A Visitor Center was built to give visitors orientation to the park. Here, also, is displayed an outstanding selection of contemporary Indian arts and crafts, donated to the park by Mary Jane Colter.

In the late 1950's, a major excavation program was begun on Wetherill Mesa. Both cliff dwellings and mesa top ruins were excavated using the most modern techniques of the time. Contrary to the work of the early years, thorough records were kept of all work done. All objects were identified, cataloged, and stored for future studies.

One of the ruins selected for excavation was Step House Cave where Superintendent Nusbaum had begun the research phase of park excavations in 1926. In addition to the excavation of a small cliff dwelling at the far end of the cave, the Modified Basketmaker house pits that Nusbaum had uncovered were stabilized and prepared for display to park visitors.



Merriam's turkey

## Common Birds of Mesa Verde

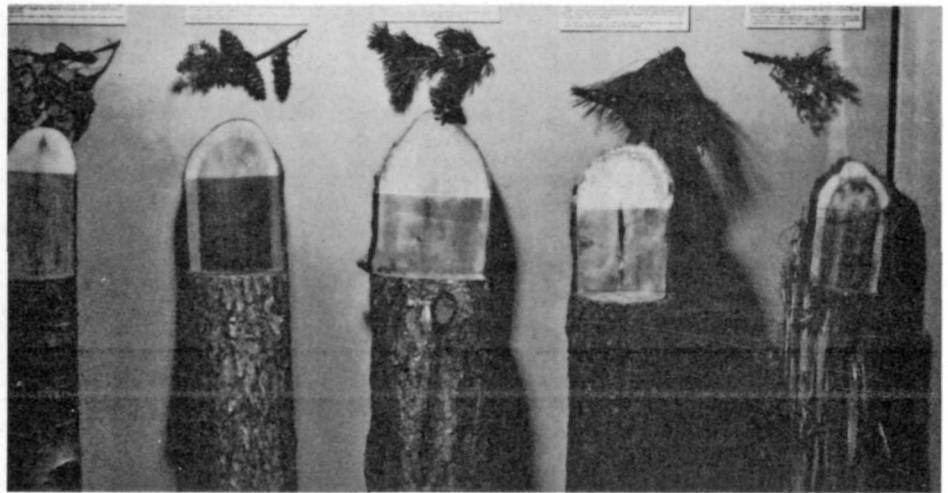
Mesa Verde National Park does not have a wide variety of birds. Throughout the summer, it is very dry and the only birds are those common to the arid pinyon-juniper zone. During the spring and fall migrations, many birds pass through Mesa Verde and several species of more northern birds spend the winter here. One hundred ten species have been observed. The few that are common to the area are the Montana horned owl, western crow, American magpie, green-tailed towhee, pinyon jay, northern tileolated warbler, American raven, turkey vulture, western mourning dove, dusky grouse, sparrow hawk and belted kingfisher.

The Merriam's turkey was a native to Mesa Verde but was killed off by white settlers soon after the ruins were discovered. In ancient times, the turkey was domesticated by the Pueblo Indian and there is evidence to show that large numbers were kept in the villages. They were of great importance to these people and every part of the bird was utilized.

Although some of the Pueblo Indians did not eat the turkey, evidence indicates that they were eaten by the Mesa Verdeans. Large quantities of turkey bones were found in trash heaps and no ceremonial burials of turkeys have been discovered.

Turkey bones were used extensively in making tools. More awls were made from the lower leg bone of the turkey than from any other bird or mammal bone.

The highly prized feather blankets were made almost exclusively of turkey feathers.



Aspen, Douglas fir, pinyon pine, Ponderosa pine and Utah juniper are found in the Mesa Verde area.

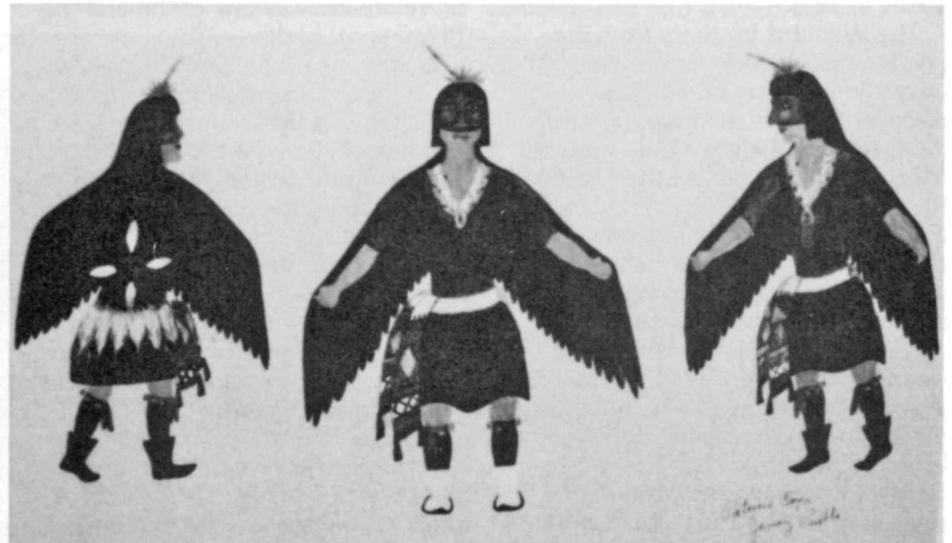
## Common Trees of Mesa Verde

The cliff dwellers used Douglas fir, pinyon pine and Ponderosa pine in the construction of their roofs. These woods are very valuable in tree ring dating.

Aspen was seldom used by the Indians since there is very little of it

in Mesa Verde. However, a great deal of Utah juniper was used in roof construction. In spite of the fact that it is often well preserved, the thin rings and erratic growth of the juniper make it valueless in tree ring dating.

Eagle Dance by Patricio Toya, Jemez Pueblo.



## Pueblo Painting

The practice of painting on paper and canvas is a relatively recent development among the Pueblo Indians, whose other artistic traditions, such as pottery and weaving, have existed for hundreds of years.

In 1917, Crescencio Martínez, of San Ildefonso Pueblo, was commissioned to do a series of water colors for the Museum of New Mexico. Other young men —

Ma-Pe-Wi, Otis Polelonema, Fred Kaboutie, and Awa Tsireh — soon made known their ability to paint and the modern school of Pueblo Indian painting was born.

Modern Indian painting has developed into a distinctive style that is becoming known throughout the world. These paintings tend to reflect the more important activities and customs of the various tribes. Pueblo paintings often portray the village and ceremonial life of these close-knit people.

## Ute Indian Beadwork

The Utes were formerly nomadic hunters who occupied all of central and western Colorado, eastern Utah and parts of northwestern New Mexico. The tribe was divided into many small bands, each one led by a chief. They were warlike people who acquired horses from the Europeans at an early date. Possession of horses intensified their conflict with settlers. They now live on reservations in Colorado and Utah.

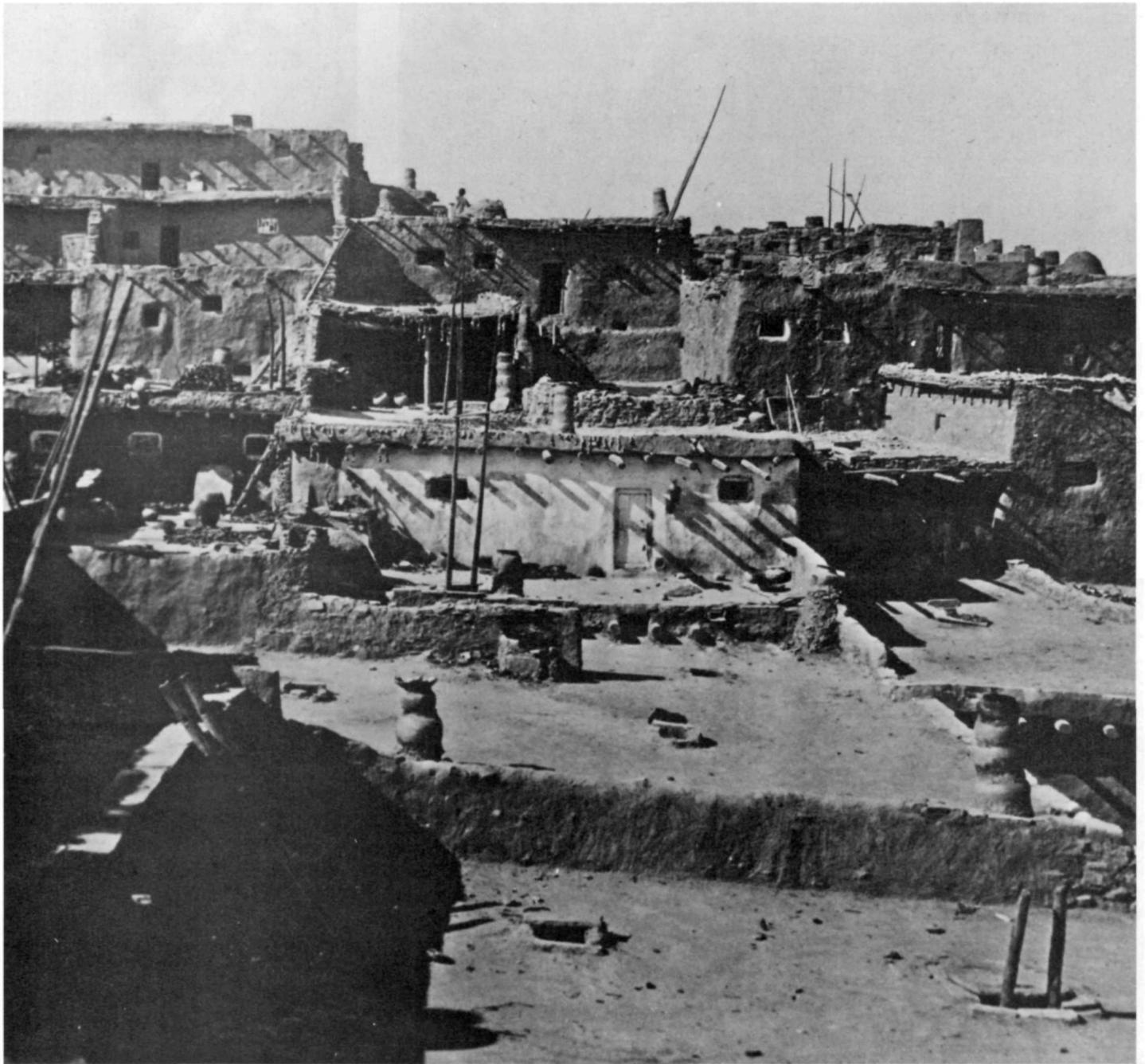
Before the coming of the white man, the Utes made beads from stone, shell, bone and seeds. When glass beads were introduced, they were eagerly accepted and the Utes became famous for their beadwork. They showed a strong preference for light blue, light green and yellow beads.



## Navajo Blankets

The Navajo blankets and ceremonial sash in the museum's collection exemplify the various dyes,

yarns and weaving techniques of the late 1800's.



Zuni Pueblo, New Mexico, 1879 — Smithsonian Institute Photograph

## **Descendants of the Mesa Verde People**

### **Migration from the Mesa Verde**

It is believed that the Pueblo Indians of Mesa Verde left because of a long period of drought. Tree ring studies indicate that the period from AD 1276 through 1299 was abnormally dry. No evidence has ever been found of farming Indians remaining at Mesa Verde after that time.

During the drought, springs gradually dried up and the crops probably failed year after year. Finally, the Indians were forced to move to regions with a more dependable water supply. The major migration was southwest toward the

Rio Grande Valley of New Mexico. There was probably a light migration south and southwest toward the Little Colorado River of Arizona.

### **Present Day Pueblo Indians**

When the Pueblo Indians left Mesa Verde because of the great drought, most of them moved southeast toward the Rio Grande Valley in New Mexico. Other Pueblo Indians were already living in that region so that the Mesa Verde people mixed with them and gradually disappeared as a distinct tribal group.

Today the descendants of these ancient Pueblo Indians still live in the

Southwest. In all, there are 19 tribes; 18 in New Mexico and one in Arizona. It cannot be said that any Pueblo ways came from Mesa Verde. It can be assumed, however, that in the veins of some of these modern Indians, greatly thinned by the centuries, flows the blood of the people who once lived in the Mesa Verde region.

Present day Pueblo Indians are farmers and stockmen. Most communities also produce jewelry and pottery for the curio trade. With a few exceptions, visitors are welcome, and sometimes a guide will be provided for a small fee.

## Contributions of the American Indian

Many of the articles we use in our daily lives were given to us by the American Indians. These things, not known in the Old World before the discovery of America, were taken over by the white man and now form an important part of our civilization. All of the products listed below, and many others, were developed by the Indians of North, Central and South America and passed on to us.



### Food Products

corn (maize)    popcorn  
 potato    sweet potato  
 pumpkin    squashes  
 beans (kidney, lima, tempary, scarlet runner, yam)  
 jerusalem artichoke    chili pepper  
 tapioca (manioc)    cacao (cocoa)  
 tomato    arrowroot  
 pineapple    strawberry  
 peanut    avocado  
 maple sugar    mate (Paraguay tea)  
 sunflower    wild rice  
 vanilla    pecans  
 cashews    black walnuts

### Mixed Foods

pemmican    succotash

### Drugs

quinine    cascara sagrada  
 cocaine    peyote  
 ipecac

### Gums

rubber    Peruvian balsam  
 copal (varnish base)  
 chicle (chewing gum base)

### Miscellaneous Plant

tobacco

### Domestic Animals

turkey    curassow  
 Muscovy duck    llama  
 alpaca    guinea pig

### Dyes

cochineal    indigo

### Fibers

cotton (long staple)  
 henequen (sisal fiber)

### Sports

canoeing    snowshoeing  
 tobogganing    lacrosse

## Navajo Weaving

Steps in the weaving of a Navajo blanket:

1. Source of the Wool. Practically every Navajo family has a herd of sheep. From them comes all of the wool used in the blankets. The Navajos obtained their first sheep from the Spaniards in the year 1600.

2. Shearing the Sheep. Navajo women and girls take care of the sheep and they often do much of the shearing. They use shears, purchased at the trading post. Wool that is not needed for weaving is sold.

3. Washing the Wool. The wool is carefully washed in order to get rid of dirt, grease, and burrs. Yucca root soap or regular commercial soap is used and the wool is hung on bushes to dry.

4. Carding the Wool. Carding is necessary in order to straighten the fibers for spinning. Regular cards, purchased at the trading post, are used. Carding is a slow, tedious but necessary task.

5. Spinning the Yarn. Spinning is done with the old fashioned spindle or distaff. It is a slow, tiresome task that takes more time than the actual weaving of the blanket. Careless spinning results in a poor blanket.

6. Dying the Yarn. In the early days, the Navajos made their own dyes. Today, commercial dyes are generally used. Wool may be dyed before or after spinning. Black, brown, gray and white are natural wool colors.

7. Stretching the Warp Yarn. The warp yarn is stretched on the frame before the loom is set up. This warp is the framework of the blanket and must be strong and even. If it is not stretched properly, the blanket will curl.

8. Weaving the Blanket. After the loom is set up and the warp yarn is hung in place, the weaving begins. No design is drawn. The weaver carries the entire pattern in her mind. Navajo weaving methods have changed very little since they were borrowed from the Pueblo Indians many centuries ago.

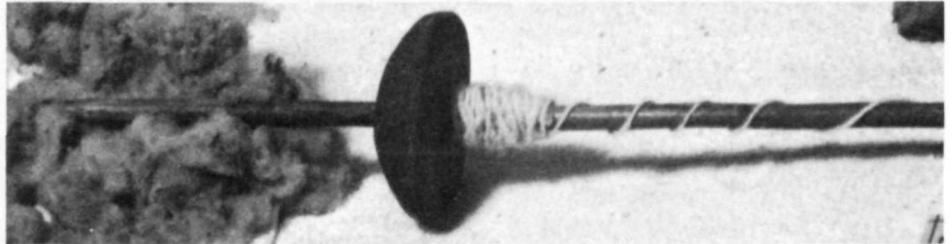


## Natural Dyes

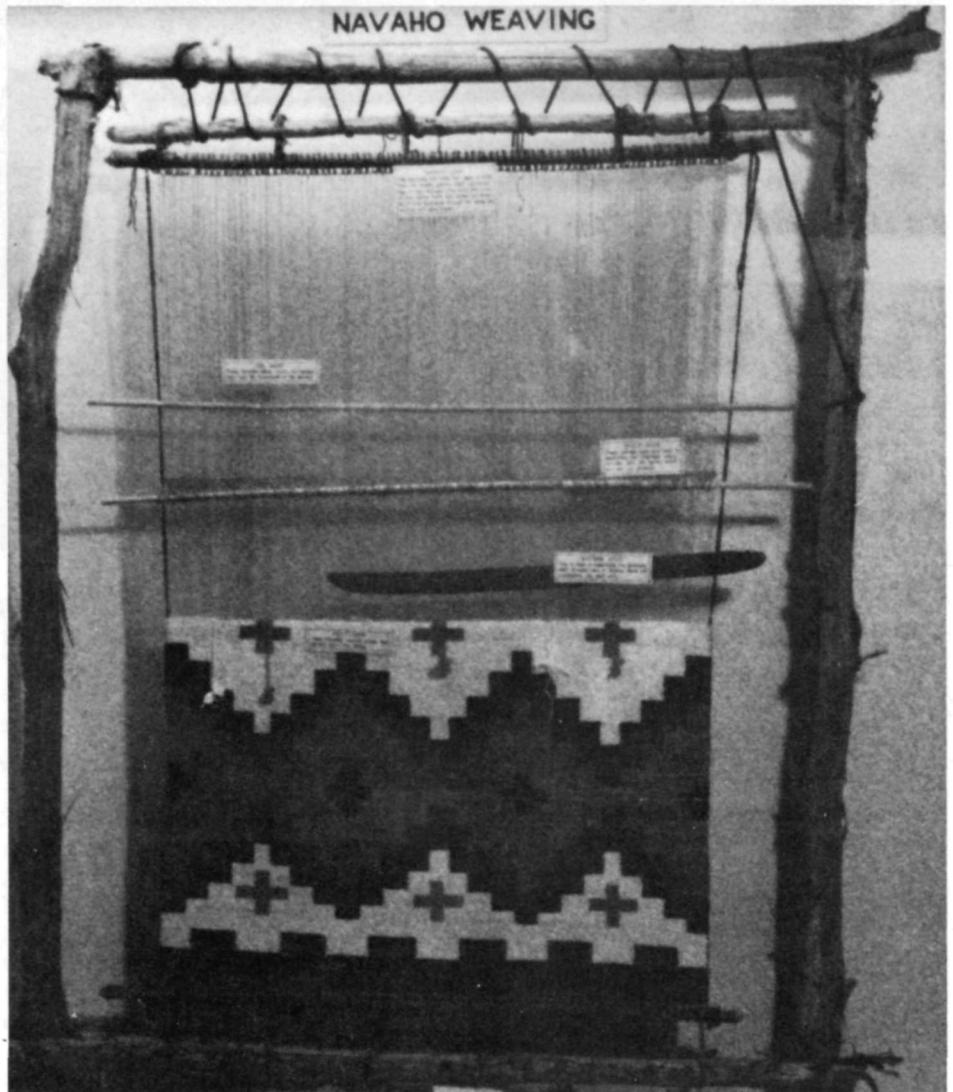
Dyes for Navajo rugs were made from: Indian paint brush, Cliffrose, wild holly root, juniper root, black walnut shells, red gilla, mountain mahogany root, green groundsel, Gamble's oak bark, yellow onion skin, sagebrush, red onion skin,

sumac, pinyon, pitch, ocher, rabbit brush, ground lichen, rubber weed, black alder bark, prickly pear cactus fruit, sumac bark, juniper mistletoe, purple larkspur, red juniper root, red hematite, and juniper berries.

Navajo women still use this type of spindle in spinning the yarn for their blankets. Similar spindles have been found in some of the ancient cliff dwellings.



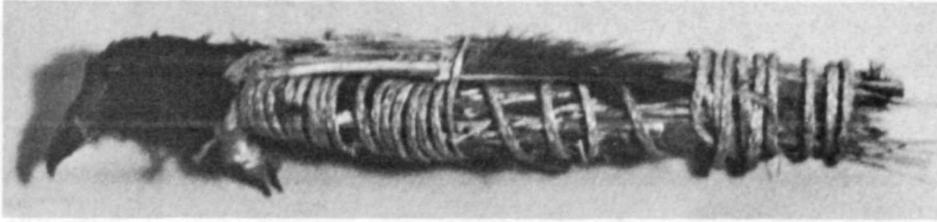
The Navajos borrowed this type of loom from the Pueblo Indians many centuries ago. It has changed little since that time. At first, cotton cloth was woven; but by 1600, the Spaniards introduced sheep to the Indians, and the weaving of wool began.



## Contemporary Indian Artifacts

Carved wooden birds and the two raven skins were found in a small cliff dwelling in northwestern New Mexico. Their age is uncertain, but it is believed that they date from about AD 1700. The exact use of the birds

is unknown, but it is assumed that they were used in ceremonies. Traces of paint on the wooden birds indicate that they may have been highly colored.

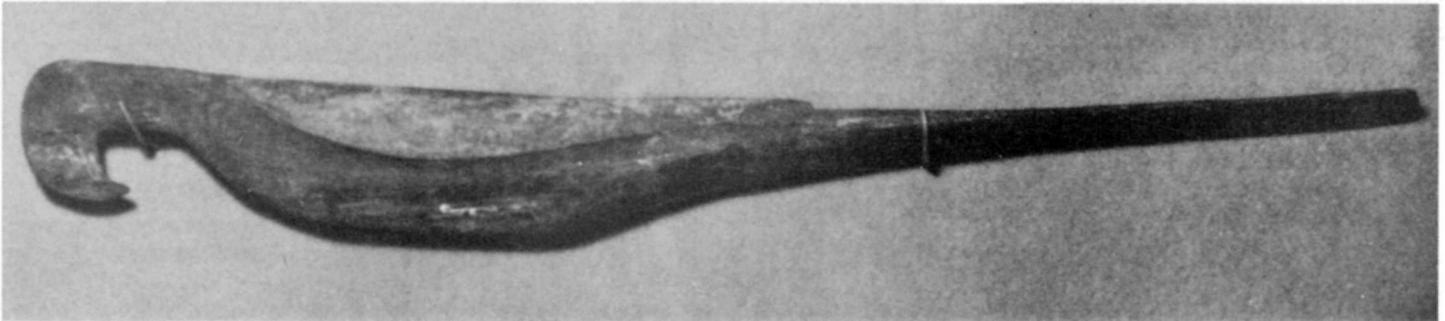


These two raven skins are filled with dried plants and plant fibers. The use of actual skins was rare among the early Pueblo Indians. (Loaned by Mr. J. Felix Gomez, Pagosa Junction, Colorado.)

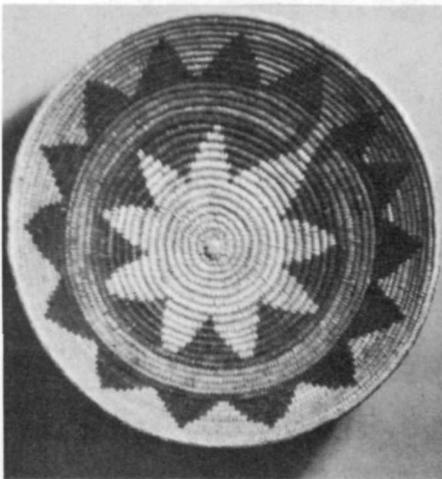
The beak and long tail leave little doubt that this figure represented a parrot or macaw. (Loaned by Mr. J. Felix Gomez, Pagosa Junction, Colorado.)



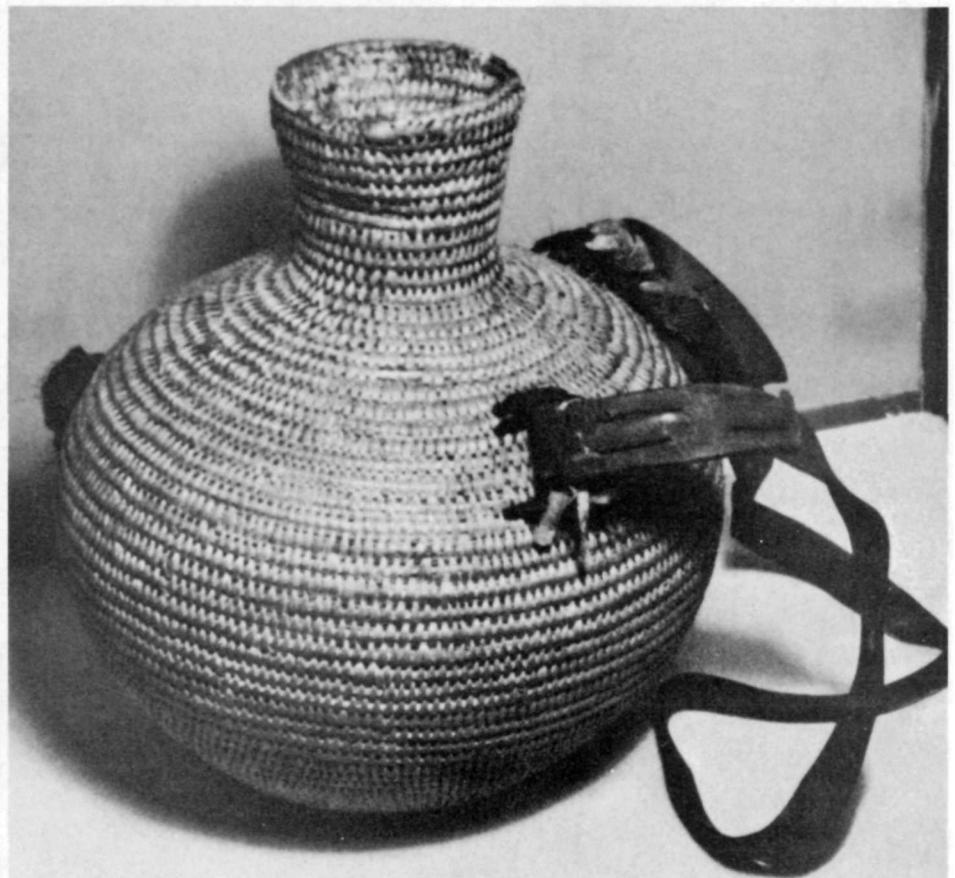
Pitch covered Paiute water bottle.



Jicarilla Apache water bottle lined with pitch.



Modern Indian tribes each have their own individual styles of basketry decoration. Navajos seldom make baskets today. They prefer to purchase them from the Paiutes who now copy the traditional designs as in the "wedding basket" above.

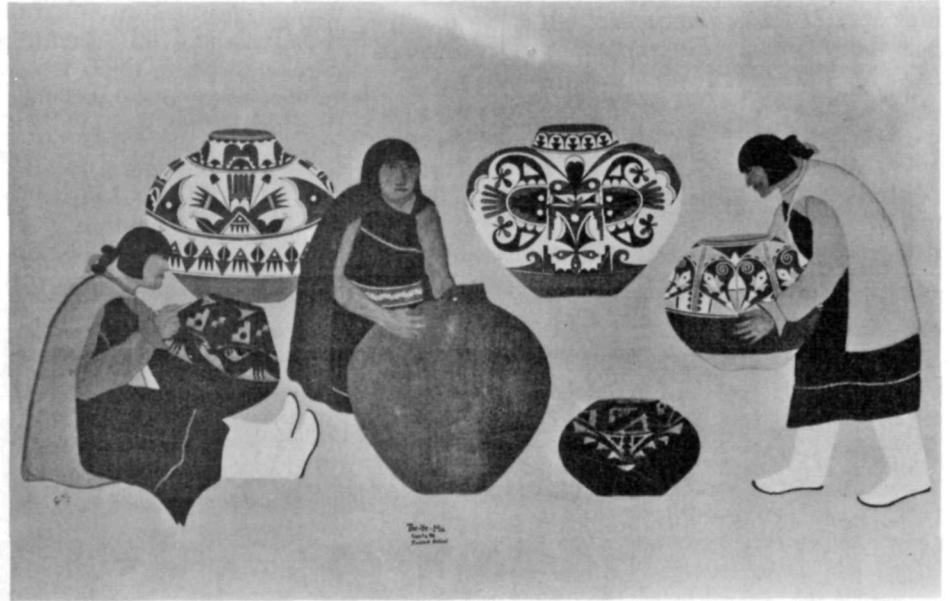


## Modern Native American Art

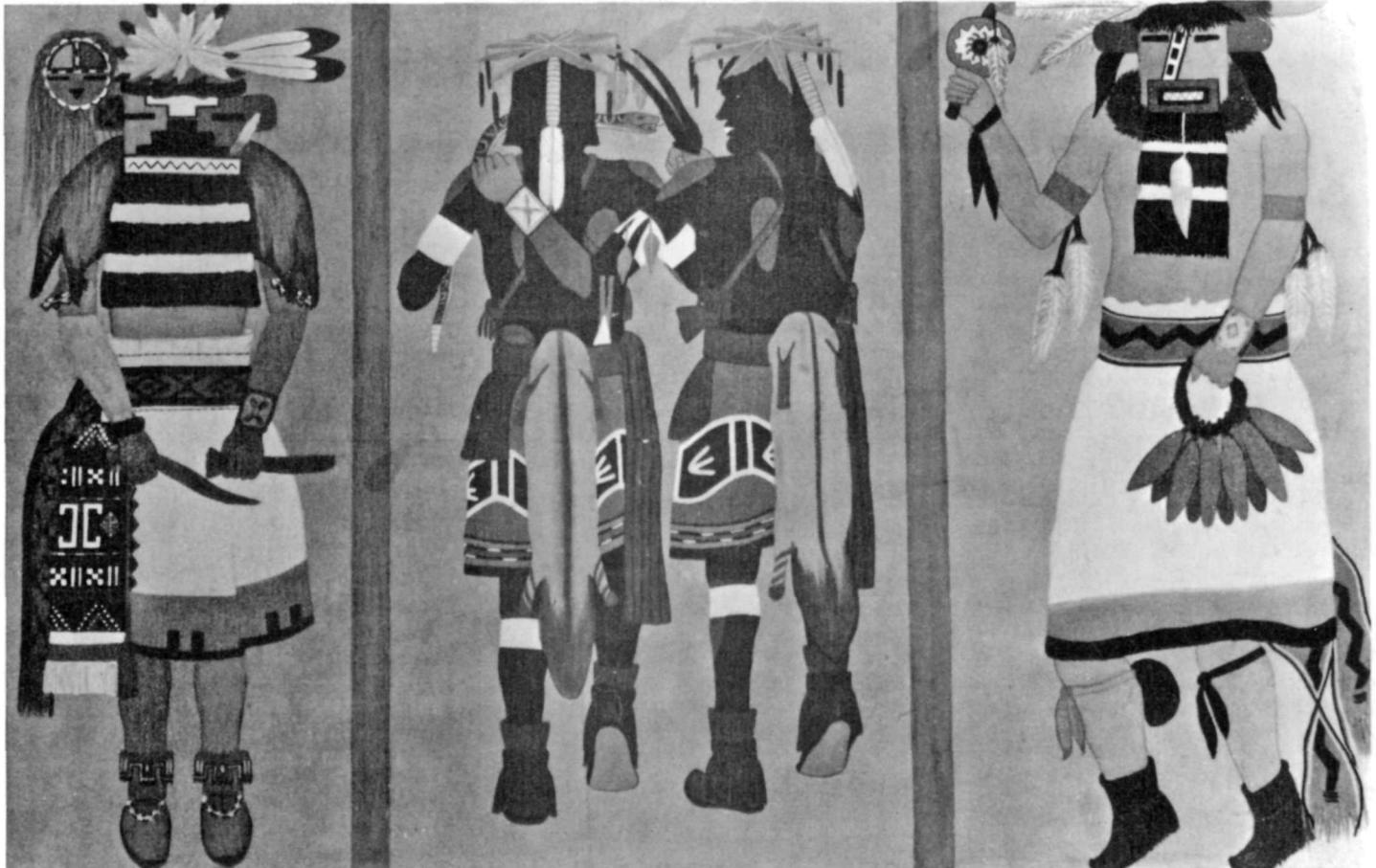
Modern Native American art is displayed in the gallery off the museum. The exhibit consists of six large paintings, ranging in size from 3 x 5 feet to 6 x 15 feet. These were given to the park in 1935 by the Santa Fe Indian School. Shown only for a short period, the art work was placed in storage prior to World War II and only recently removed, cleaned, framed, and placed on permanent exhibition.

The Santa Fe Indian School served as a focal point for training promising young artists from the various Indian tribes in watercolor and oil painting techniques. In the spring of 1932, several modern murals were painted at the school by a group of older, established artists, some of whom are represented in the Mesa Verde collection.

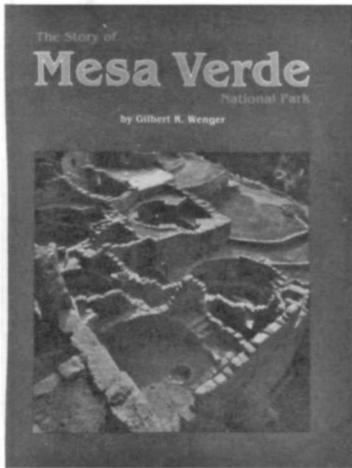
Pottery Making by Romando Vigil, San Ildefonso Pueblo, approximately 8 x 6 feet in size. (National Park Service Photo)



Kachinas by Jack Hokeah (Kiowa), Miguel Martinez (San Ildefonso), and Joshongeva (Hopi). Approximately 11 x 7 feet in size. (National Park Service photo)



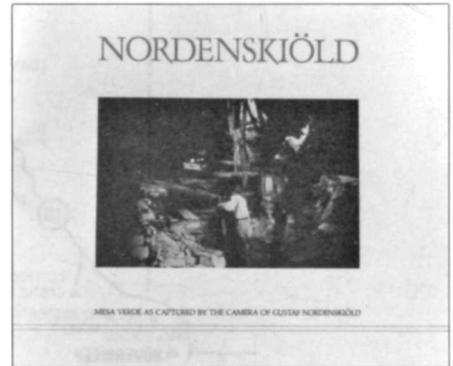
**These Publications, and Others, Are Available in the Book Store**



**The Story of Mesa Verde National Park.** Gilbert R. Wenger, (paper). A non-technical publication written to help visitors better understand and appreciate the natural and human history of Mesa Verde National Park. **\$4.95**

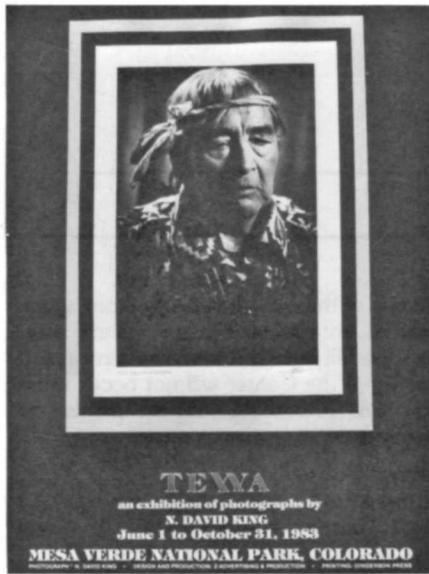


**Archeological Techniques Used at Mesa Verde National Park,** Gilbert R. Wenger, (paper). Written for the layman and the average visitor at Mesa Verde National Park. **\$3.95**

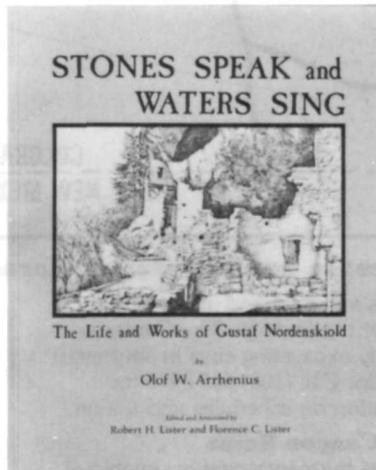


**Nordenskiöld Portfolio.** A portfolio of copies of 15 photos taken in 1891 of Mesa Verde National Park by Gustaf Nordenskiöld, suitable for framing. **\$10.50**

\*\*\* SPECIAL \*\*\*



**Tewa Poster.** Poster of one of the 30 photographs of the Tewa Speaking Indians of the Tewa Photographic Exhibit by N. David King. **\$1.50**



**Stones Speak and Waters Sing, The Life and Works of Gustaf Nordenskiöld,** by Olof W. Arrhenius contains actual notes, drawings and journal entries of Nordenskiöld and his companions while at Mesa Verde and on their horseback trek to the Grand Canyon in 1891. **\$11.95**

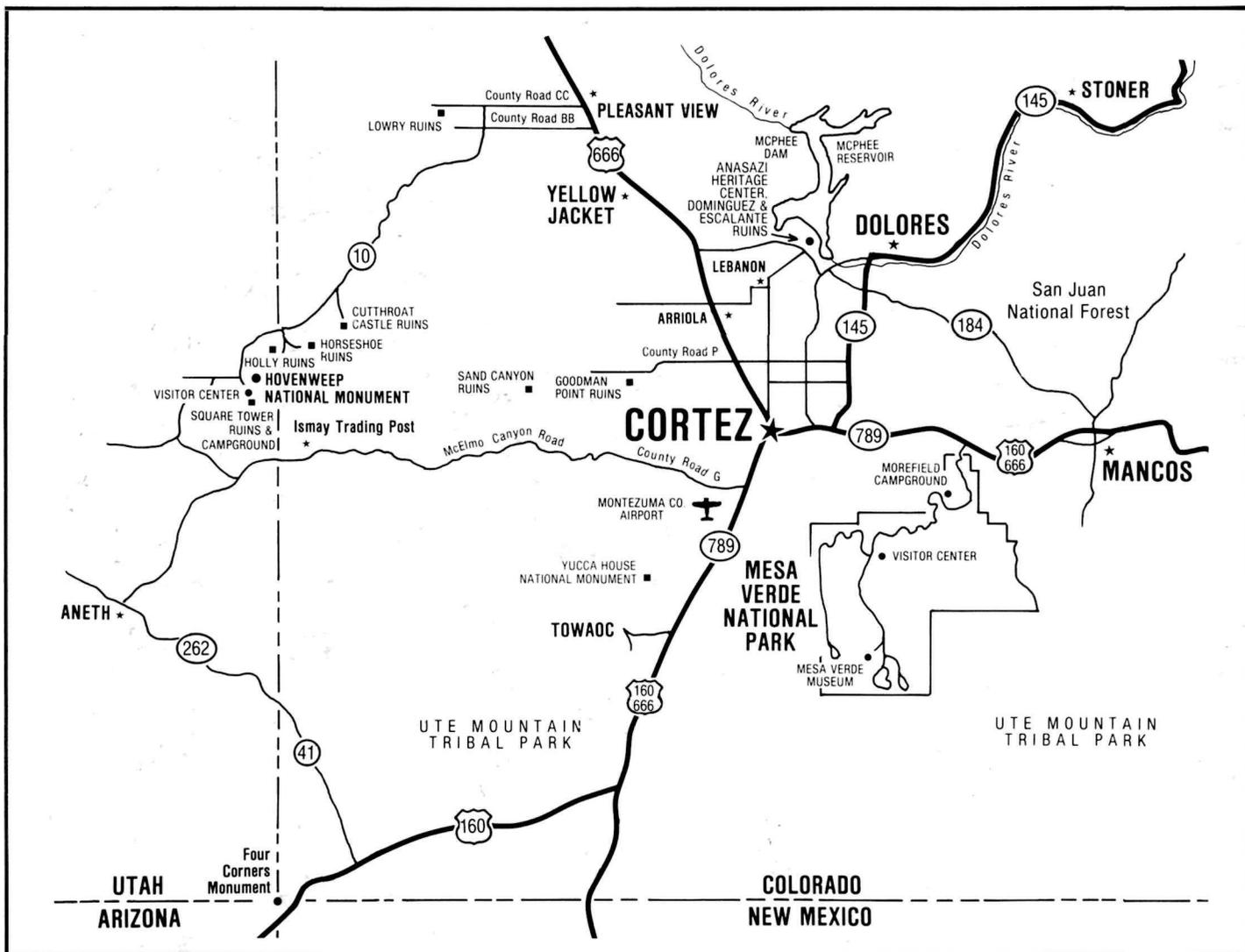


**Flowers of Mesa Verde National Park,** Stephen R. Wenger, (paper). Illustrated with color photos of the most common flowers found in the Mesa Verde area. **\$2.50**

**Tewa Catalog.** Catalog of 30 photographs of the Tewa Photographic Exhibit by N. David King. **\$3.50**



**Mesa Verde Story,** as told by museum dioramas. Five 5-1/2" x 8-1/2" color prints showing Early Man, Basketmaker, Modified Basketmaker, Developmental Pueblo Period, and Great Classic Pueblo Period. Comes with mailing envelope. **\$1.00**



## Other Anasazi Ruins and Points of Interest in Southwestern Colorado

### Hovenweep National Monument

Hovenweep covers 784 acres and consists of six groups of ruins where pre-Columbian Indians once lived. These ruins are known for their towers and all except Square Tower are isolated and difficult to reach. All approach roads to Hovenweep are of graded dirt. Inquire locally regarding road conditions since storms may make them impassable.

There is a modern campground near the ranger station. Camping supplies, firewood and gasoline are not available at the monument. Both monument and campground are open all year.

### Goodman Point Ruins

This large, unexcavated site is part of the Hovenweep National Monument.

### Yucca House National Monument

This large, unexcavated late Anasazi site is off a paved dirt road and difficult to reach. Beware of rattlesnakes.

### Crow Canyon Archaeological Center

Crow Canyon Archaeological Center, northwest of Cortez, offers programs for persons of all ages to work beside professional archaeologists in collecting

artifacts and data and in learning to interpret the findings. The Center is currently excavating sites in southwest Colorado. Call (303) 565-8975 for information on schedules and tuition.

### Sand Canyon Ruins

A vast thirteenth century pueblo of over 350 rooms, kivas and towers, is currently being excavated by Crow Canyon Archaeological Center. Phone 565-8975 for information.

### Ute Mountain Tribal Park.

The Ute Indians offer tours to many cliff dwellings, ruins and scenic primitive areas that until recently were not open to the public. Tours start at the Ute Pottery Plant 15 miles south of Cortez on U.S. Highway 666. Reservations are required and all tours must be accompanied by an approved tribal guide. A fee is charged. Phone 565-3751.

### Anasazi Heritage Center — Dominguez and Escalante Ruins

The Anasazi Heritage Center is a new archaeological museum and research center located on Highway 184, one mile west of Highway 145 near Dolores. The center is set into the hillside near the

remains of the twelfth century Dominguez and Escalante ruins. These ruins are now open for self-guided tours. The permanent opening of the Center will not occur until early 1988. Phone 882-4811 for further information.

### Lowry Ruins

Lowry Pueblo was constructed by Anasazi farmers about AD 1090. Its Great Kiva, or ceremonial room, is one of the largest ever found. It also has a unique painted kiva in which the original decorated plaster can still be seen. The pueblo was home to a community of about 100 people. It is easily reached off Highway 666 near Pleasant View. Picnic tables and toilets are available.

### Four Corners Monument

This monument marks the only point in the United States where four states meet at one point. One-half mile off Highway 160, this attraction is operated by the Ute and Navajo Indians and a small entrance fee is charged. During the summer months, you may buy wares directly from area Indians. No facilities are available at the monument.