# ISLAND TRAIL

## WALNUT CANYON NATIONAL MONUMENT
## ARIZONA

Price: 15c If you take this booklet home.

There are few records of poisonous snakes at Walnut Canyon. In summer the Arizona mountain kingsnake with colorful black, white and orange bands may be seen. It is harmless, and should not be disturbed. Here, all animals are protected and are to be left in their natural state.

We hope you will join us in protecting Walnut Canyon. To insure your safety and preserve the ruins and unspoiled beauty of the area, the following rules MUST be observed:

★ Do not pick flowers, throw rocks, molest wildlife, or collect anything.

★ Hiking off the trail for ANY reason is not allowed.

★ If you smoke, be careful. A carelessly dropped cigarette or match may start a fire.

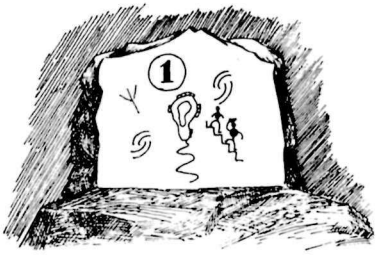
**KEEP AMERICA BEAUTIFUL**

CAUTION

This area possesses hazards not normally encountered in home surroundings. Please guard your family's safety.

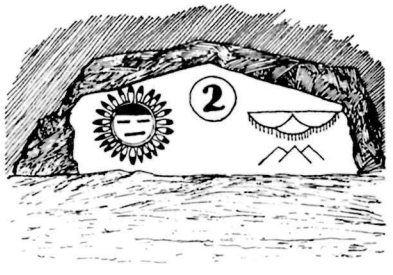
## THE ISLAND TRAIL

There is nothing in this booklet which you MUST read. The numbers along the trail and in the booklet do not require reading at specific places. If you are in a hurry, or want just the highlights of the story, read only the **BOLDFACE** print. If you have more time and would like a more complete story, read the smaller print in addition to the boldface.




**1 As we begin, so will we end - at the edge of a seemingly ordinary canyon. Even an ordinary canyon is a slice of eternity, and you are welcome to view a part of the past and to ponder the future.**

(The trail descends by several flights of stone steps to number 2. Be very careful in your descent.)




**2 You may see birds catching updrafts to soar around you. They are free to view all movement: yours, the fox with her litter, the rabbit. Before you came birds viewed other men — people called Pueblo Indians.**

Pueblo Indians are identified by a combination of three culture traits: the construction of communal houses, the practice of agriculture, and making pottery. The three

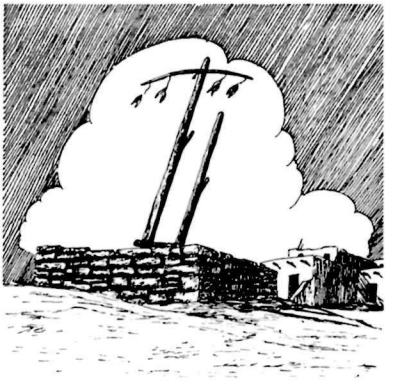
practices were part of the life of the people at Walnut Canyon. Archeologists call the Indians who lived here the Sinagua (see-NAH-wah) and place their occupation during the period of A.D. 1120 to 1250. Probably all the rooms found in Walnut Canyon were not occupied at once, so the number of people living here is difficult to estimate. A maximum population in prehistoric time was probably 400 to 500 people.

**3 When Flagstaff needed water for its growing population, a good supply was found in Walnut Creek. Indians would have understood the need. Consider why your town is located where it is, and what things all people need to live. Many things brought Indians to this canyon: water, animals, sheltered ledges where a home could be built and fields where crops could grow.**

A permanent stream existed in Walnut Canyon where the Indians built their homes. The canyon is about 400 feet

*Sheltered ledges were ideal housing sites*

(122 m) deep, and the Indians lived both in it as well as on the rim. It appears that the choice of homesites was guided mainly by availability of natural overhangs. The main canyon could be entered from side canyons which emerge nearly on the level where most of the cliffdwellings are found, so trails could be built to gain access to water, firewood, and farming fields.



**4** More years ago than most minds can comprehend — 200 million years — this was an area of extensive sand dunes on the edge of a vast plain. At the bottom of the canyon, looking like gray, pulled taffy candy, is a series of fossil sand dunes in the Toroweap formation. Pressure, created by the weight of a shallow sea which later covered the dunes, compressd them into sandstone. The bottom of that shallow sea filled with fine silt and sea shells. Over the centuries the deposits became thicker and thicker. As the sea drained away it left this floor, compressed into what you see as stair-like ledges of Kaibab Limestone.

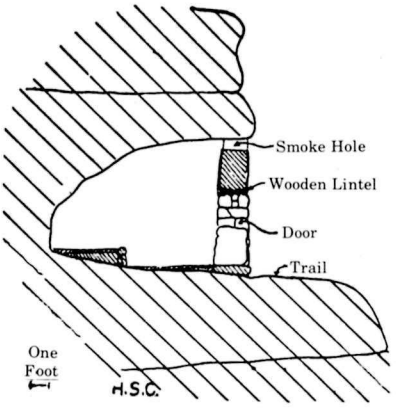
**5** As time passed, mountains rose, streams drained and cut the land, and canyons began to form. Walnut Creek cut into the soft limestone; then the sandstone was exposed. Here the creek met harder stone, and the canyon narrowed. Ledges were formed in the softer limestone.

**6** The oaks, ponderosa pine and douglas fir which you have walked beneath began years ago. Ponderosa have needles in bunches of three, 5 to 11 inches (13 to 28 cm) long. To some people wind through the branches sounds like waves on a beach. The fir trees have harder and stronger wood than the pine, with different needles and cones. These tall trees are sacred to the Pueblo Indians, who believe the color of the needles will foretell growing conditions. Firs grow where it is moist and cool, usually above 7,000 feet (2134 m) elevation; in Walnut Canyon you see them on the north facing slopes of the canyon, where snow and other moisture last longer.

**7** Not all ledges were used for homesites. No doubt Indian children played here while mothers, aunts and grandmothers ground corn and wove blankets.

Looking across the canyon large rock falls can be seen in different places. When roots of a tree go down into soil and rocks, cracks are followed in a search for water. Rain and snow seep into these cracks; the water freezes and melts, and growing tree roots widen them. Someday a piece of rock in the canyon wall will fall with a loud crash. How many houses must have been crushed during the 800 years since they were built! Still, these homes will no doubt be standing long after our subdivisions have gone into ruin.

Once the family had selected a cave, they did very little to enlarge it. Most of the ledges are shallow and extend back into the rock no more than 10 to 12 feet (3 to 3.7 m). The Indians closed off the



*Section of cliffdwelling*

front and partitioned rooms with masonry walls. Chunks of limestone were laid up to form a double wall with the straight faces turned to the outside and the gaps filled with rubble. Clay and mud were used for both mortar and plaster. A layer of clay is found about 100 feet (30 m) above the stream bed; when pulverized and mixed with water the clay produces a satisfactory mortar.

The rooms vary in size with an average of 80 square feet (7.36 sq m) of floor space for each. The outer wall was set back far enough under the ledge so that rain water running down the cliff would drip outside the wall. Floors were layers of hardpacked clay, which produced a fairly level surface; some rooms had floors with as many as 10 thin layers, none exceeding three-eighths of an inch (9.53 mm) in thickness. Floors were often on two levels, with a slightly raised platform or bench in the rear of the room.

Little wood was used in construction. There were poles to support tops of the doors, and apparently a few pegs set into the walls for hanging clothing or utensils.

Construction tools included stone axes, hammers, and picks. In those tools which had a handle, a groove was made three-fourths of the way around the stone to hold the "J"-shaped handle, which was lashed to the stone.

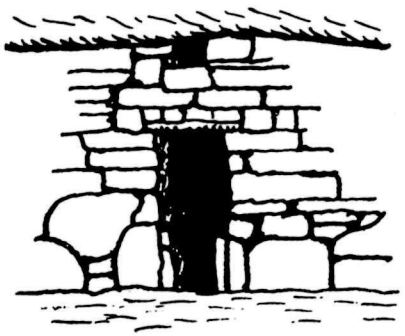
**8 As you walk the trail, you move from one plant community into a different one. The ferns, firs, and oak**

**in the shady area need coolness and more moisture than do the juniper, pinyon pine and other sun-loving plants that are found as you move into the warmer parts of the Trail. Perhaps you'll be interested in making a few comparisons. How might you use the wide variety of plants if you lived in these homes?**

Wild fruits in this area include grapes, blueberry elder and currant. Also wild potato is sometimes found in the canyon bottom; the tubers are small, seldom as large as small cherries. A drink can be made from Mormon tea, and several annual plants can be boiled and eaten as greens; these include spider flower or beeplant, lambsquarter, and several types of mustard.

**9 You are coming to ruins with fairly complete walls and doors. If you look for dark mud, particularly around door openings, you will see where the National Park Service has stabilized the most fragile walls. Soot on the walls and ceilings, often so caked it does not seem real, built up over the years from pitchy pine torches or fire; the light must have been bright in the small, dark rooms. A woman worked many hours to gather the clay and plaster the walls of her home. Some hand prints can still be seen, having survived since before the time of Columbus. (We hope you will not touch them, as the dry plaster crumbles easily.)**

*Door of a cliffdwelling showing smoke hole*

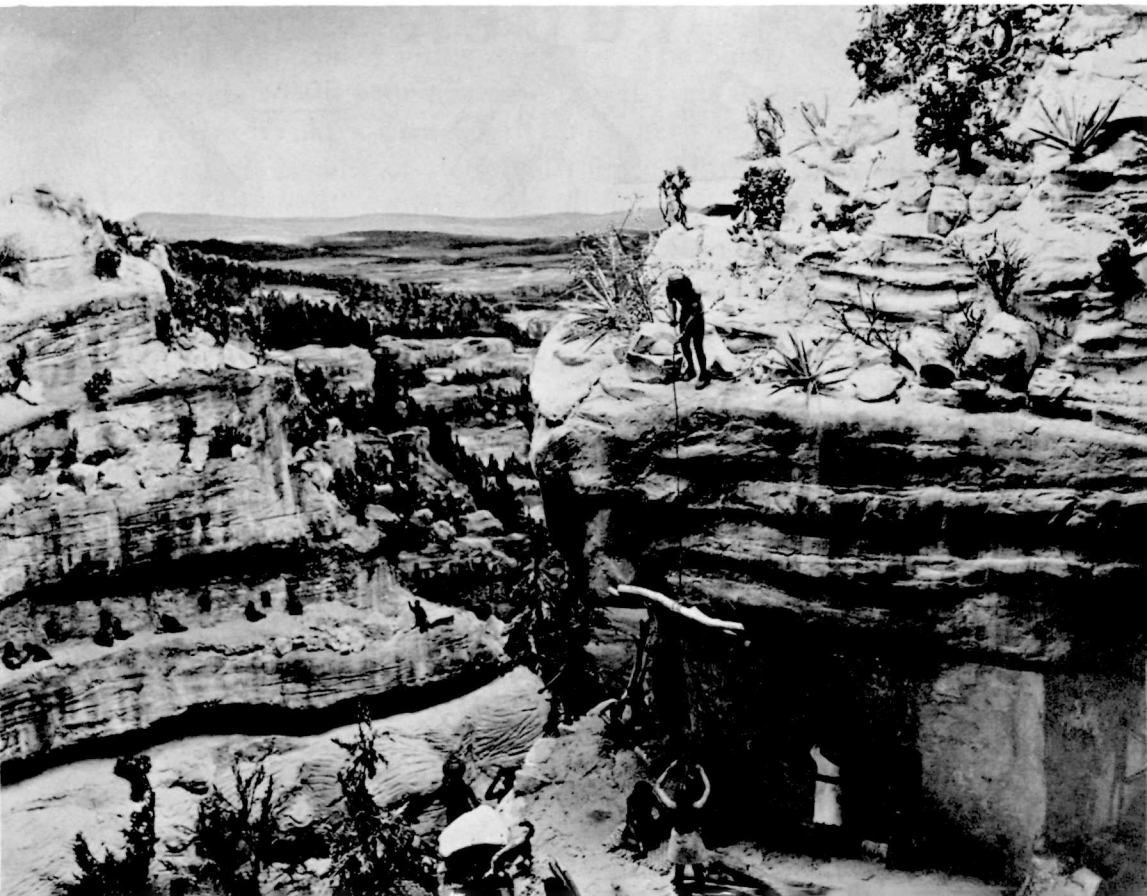


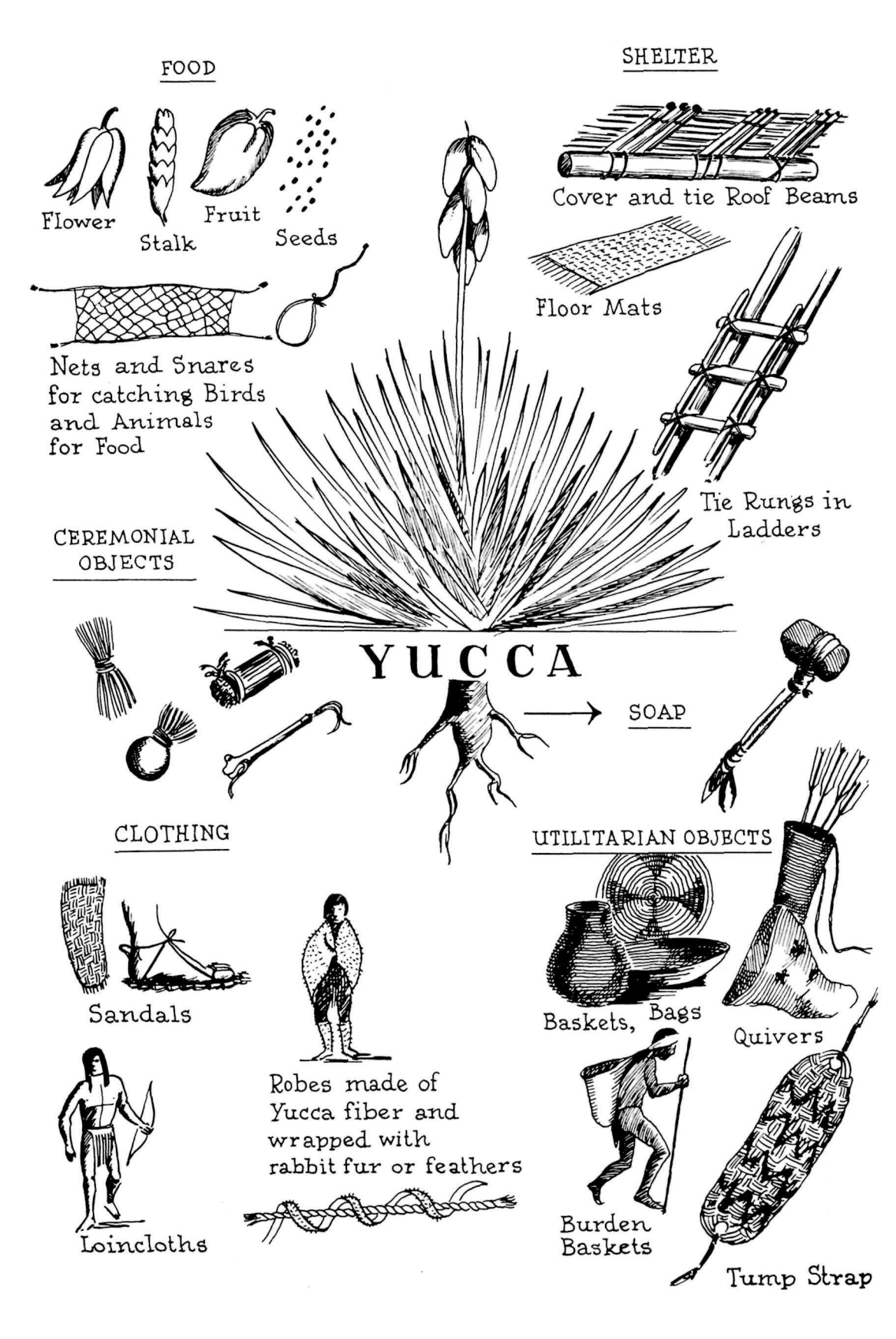
**Are you too tall to enter these doors? In A.D. 1150 the average man living here was 5 feet 6 inches (168 cm) tall, making it necessary even for him to bend over as he came inside. But the small doors were much easier to cover with skins and fur blankets; air could enter**

from the bottom of the doorway, circle past the cooking fire, and bring the smoke out the small hole above the door.

**10** Have you already touched the sharp spikes on the blue yucca? Then you realize what an efficient needle it would make, and what strong fibers the leaf has. Many of the Indians' daily needs were filled by this hardy plant. There is a delicate moth which depends on the yucca for its life. In the "web of life" this moth keeps the yucca alive by pollinating its seeds; the plant in turn provides food for the moth's young. Perhaps more things than we realize are as close in harmony. (See next full page of uses of yucca.)

**11** No doubt the simple tools used for farming and grinding corn made work hard and back-breaking. But




FOOD
SHELTER
Flower
Stalk
Fruit
Seeds
Cover and tie Roof Beams
Floor Mats
Nets and Snares for catching Birds and Animals for Food
Tie Rungs in Ladders
CEREMONIAL OBJECTS
YUCCA
SOAP
CLOTHING
UTILITARIAN OBJECTS
Sandals
Baskets, Bags
Quivers
Robes made of Yucca fiber and wrapped with rabbit fur or feathers
Loincloths
Burden Baskets
Tump Strap

**in return for their efforts the land gave the people life. When the rains didn't come, and crops failed, or variety in meals was needed, rabbit, deer, pronghorn[1], squirrel, and wild plants were available, and often meant survival through a time of need.**

The cliffdwellers were farmers, as shown by the remains of beans, squash, and the corn cobs found in their homes. Sunflower seeds were also found, but whether they were cultivated or gathered from wild plants is not known. The Indians depended on rainfall to water their crops, and did not build irrigation ditches as did their neighbors in the Verde Valley. The average annual rainfall here is about 20 inches (51 cm); to help the crops, rain had to come mostly in summer.

Soil near the canyon rim is generally too shallow and rocky to produce good crops, but some soil deep enough to hold moisture can be found. The Indians also built small dams across arroyos near the canyon, causing soil to build up in terraces where seeds could be planted with a sharp stick and tended with a stone hoe. The Sinagua had summer camps where watchers maintained vigil to keep away animals. What a struggle it must have been to raise crops without benefit of steel tools, fences, insecticides and other "advantages" we now take for granted.

The Sinagua were farming at elevations where corn, beans and squash may be expected to mature in a growing season of 115 days. Since they had no weather bureau, they probably timed their plantings according to development seen in native plants.

Firepits are found in most dwellings, usually directly in front of the door, and 4 or 5 feet (1.2 to 1.5 m) inside the rooms. Fires were kindled with a wooden spindle rotated on a hearthstick until fricton ignited tinder. The spindle might have been made from barberry, the hearthstick from yucca, and the tinder from shredded juniper bark.

Walnut Canyon's early inhabitants used clay pots for cooking. These were placed directly over the fire and could

[1]Commonly known in Arizona as pronghorn antelope, although belonging to a different family of mammals.

withstand considerable heat. Some cooking may have been done on a flat rock used as a griddle, and other foods could have been baked or broiled over coals. There was very little seasoning available, although salt could be obtained from the Verde Valley, 65 miles (105 km) to the south. Salt was no doubt eagerly sought, and thus likely an item of barter; it would be used sparingly, not as part of the daily diet. For sweetening they may have used agave (century plant), cactus fruits or dried squash.

**12** **Many animals live here; birds can often be seen and heard, especially when it is quiet in the canyon. A canyon wren nests in the cliff wall and turkey vultures often soar on the winds. Lizards, squirrels, rabbits, even fox are found among the rocks. Some are here all year; others are seasonal residents. Which animals would you think are permanent residents?**

Among the trash heaps left by these ancient people, archeologists find bones of deer, pronghorn, turkey, rabbit, and various birds. The bow and arrow was the principal hunting weapon, although other wooden weapons may have been used.

Your visit to Walnut Canyon can give you only a hint of the great variety of wildlife in this area. Animals found here and considered good food by living Indians include coyote, wolf, fox, dog, bobcat, porcupine, badger, squirrel, gopher, woodrat, deer, and chipmunks. Occasionally elk, bear and mountain lion are also found. The birds you may see, especially during spring and summer, include turkey vulture, violetgreen swallow, raven, jays, juncos, nuthatches, goldfinches, crossbills, and sparrows.


**13 Vandals have always been a problem where historic buildings are found, and these rooms are no exception. We ask you to stay on the trail, and not disturb the ruins, so that you won't be hurt and so the ruins will survive. As you can see, the houses across the canyon are in good condition.**

**14 All around you are the homes of people long since departed from Walnut Canyon. At the most populous time this canyon must have resounded to the voices of several hundred people. It was a good life here, with nearly everything available that they needed. Why would they leave?**

Drought and disease may have worked to displace the cliffdwellers. One likely cause of abandonment was drought. With only a slight decline in annual rainfall, or not enough rain in the growing season, the stream would have failed and

food supplies would have been small, disrupting the entire community.

Tree-rings reveal that 23 years of drought prevailed in the Southwest from A.D. 1276 to 1299. It appears that Walnut Canyon dwellers were gone by that time, perhaps forced out by earlier droughts of less duration.

Living in close quarters with poor sanitation made disease a serious problem. The Sinagua suffered from teeth problems, arthritis, and other bone deforming diseases.

The cliffdwellers are not a vanished race. Their blood flows in the veins of living Pueblo Indians. Hopi legends indicate their ancestors lived in cliff homes, and there is some evidence to support this. Studies made of skeletons reveal that the Sinagua were short, stocky people, much like the Hopi; certainly the daily life was similar, and the Hopi villages were begun at the time other parts of the Southwest were being deserted.

**15** **You may have noticed a bush which looks like holly, called barberry; other common names are "mahonia" and "algerita." It is used extensively by modern Indians, and presumably was widely used by prehistoric Indians as well. The wood is strong, making excellent arrowshafts and weaving tools; a bright yellow dye is made from the roots. Deer also find barberry a good winter food.**


*Barberry*

**16** **Have you felt that we could learn something from the people who once lived in this community? We build our cities on level land, where ordinarily crops would be planted. When we've paved all the fields,**

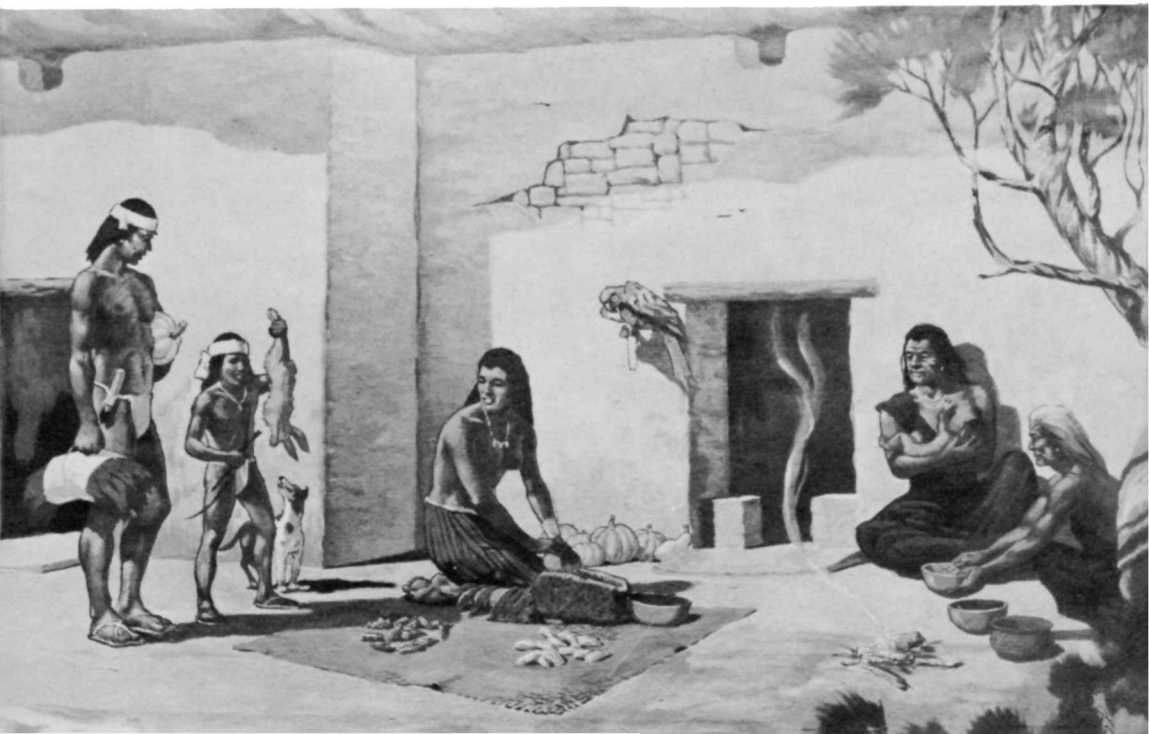
*Arizona walnut*


*Birchleaf cercocarpus*

**where will we grow our food? Are we as dependent as the Indians upon the basic elements of nature: air, soil, water, and sunlight? If so, how will we replenish the sources of our needs?**

**17** **A very hot fire with little smoke can be made from this plant. Birchleaf mountain-mahogany has many uses, including making combs from the wood, and the roots into a red dye for leather.**

*Painting by Jay Datus in the Walnut Canyon Visitor Center*



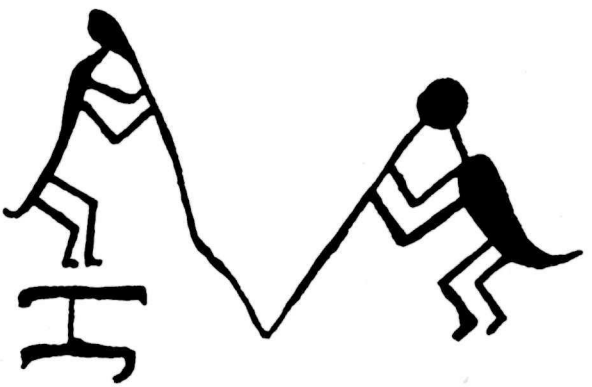
In addition to pottery-making, these Indians did some weaving and basketmaking. They were acquainted with cotton textiles, and since cotton would not mature at this elevation, they had to trade for raw cotton or for the finished products. We do not know the full details of what style clothes were worn, but we are sure they adorned themselves with shell beads, pendants, armlets, paint of several colors, and jet buttons. Turquoise ornaments are found here, though the nearest sources known are many miles away. Shells were imported from points as distant as the Gulf of Lower California.

Petroglyphs are relatively rare here, because of the absence of smooth stone into which the designs can be chipped. Local petroglyphs are mostly simple designs, except for one showing hump-backed flute players.

**18 We come to the beginning of the end. The hardest part is yet ahead — a climb of nearly 200 feet (61 m) out of this slice of history and eternity. Won't you rest along the way as you climb?**

**Although several centuries, some wars and a thousand inventions separate us from the world of prehis-**

*Petroglyph cut on the walls of Walnut Canyon, below the "Island." These cannot be seen from the trail*



**toric Indians, not all that much has changed. Fewer of us till the soil, but we still build our homes and love our families. Amidst the concrete and noise we search for our roots and our birthright: for the wind in the trees and the bird's song.**

* * * * * *


Walnut Canyon National Monument was established by presidential proclamation November 30, 1915 to protect the cliffdwellings. The ruins are of educational, ethnological and archeological value, and the National Park Service preserves them as nearly as possible in their original state.

*Looking up canyon from the "Island"*

The cliffdwellings were known to early pioneers in this area, and in 1883 were visited by James Stevenson of the Smithsonian Institution. For many years the main road from Flagstaff to Winslow ran within a few yards of the canyon and thus brought many visitors, even in horse and buggy days. Careless digging, "pot hunting", became a popular pastime, and the Walnut Canyon ruins were almost destroyed by thoughtless people seeking relics. In 1912 Dr. Harold S. Colton, founder of the Museum of Northern Arizona, made a survey of the cliffdwellings and located 120 sites with more than 400 rooms in Walnut Canyon.

If you are interested in the cause of conservation you can aline yourself with any of the numerous organizations concerned with current problems in conservation and pollution. Names and addresses of some of these organizations may be obtained at the information desk.

*"Eat it up*

*Wear it out*

*Make it do*

*Do without."*

An Old New England saying.

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**This booklet is published in cooperation with the National Park Service by the**

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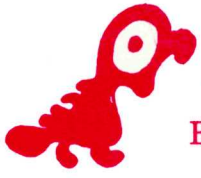

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