

Southwestern
Monuments
Association



SYCAMORE

TRAIL

MONTEZUMA CASTLE
NATIONAL MONUMENT

PRICE 10¢
IF YOU TAKE THIS
BOOKLET HOME



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returning it to the register stand when you go.

MONTEZUMA CASTLE

The five-story, 20-room dwelling, located in the cliff above you is, of course, Montezuma Castle. Why is it called Montezuma Castle? Only because the early pioneers who discovered it about 1865 gave it that name. It is unbelievable the Aztec ruler, Montezuma, ever saw or even heard of this dwelling.

The cliff house was constructed by Pueblo Indians, similar to those who built Tuzigoot, an ancient village, also a National Monument, 30 miles to the north. Archeologists have been able to determine by a study of pottery found here that the dwelling's construction started about the year 1100 A.D. and that it was abandoned about 1400 A.D. Unfortunately, scientists have not yet discovered why these prehistoric people left this area. It is possible that they overfarmed their land, causing it to become infertile. Perhaps it would not produce enough corn, squash and beans upon which the Indians depended for food. Disease as a result of poor sanitation conditions could have taken its toll, and it is possible that these peaceable farmers were harassed by warlike nomads. At any rate, it is felt that the survivors drifted north, eventually to become absorbed by the ancestors of the present Hopi, and possibly other pueblo tribes.

NATIONAL PARKS AND MONUMENTS

Montezuma Castle National Monument is one of more than 170 areas administered by the National Park Service, United States Department of the Interior. These include such magnificent scenic areas as Grand Canyon and Carlsbad Caverns National Parks and other Parks and Monuments set aside for their scenic, scientific, historical and archeological values. These superb areas belong to you and are a part of your heritage as American citizens.

The National Park Service has the responsibility of preserving the Parks and Monuments in their natural, unspoiled condition and of making them available for your enjoyment in such a manner as to leave them unimpaired for the enjoyment and inspiration of future generations. In order to achieve this high purpose, such destructive activities as woodcutting, hunting, grazing, mining and even flower-picking are prohibited. We hope you will join with us in protecting Montezuma Castle National Monument by "taking only pictures and inspiration and leaving only footprints and goodwill."

The men in the uniform of the National Park Service are here to serve you and will welcome the opportunity to make your stay at Montezuma Castle more enjoyable.

SYCAMORE TRAIL

This is your guide book for the trail which leads west from the benches in front of Montezuma Castle ruin. As you walk along this trail, you will find interesting plants, ancient Indian remains, and rock formations which tell a fascinating story. Each spot of special interest is *marked by a numbered stake*. Under the corresponding number in this leaflet is a short description and discussion.

The information recorded here is necessarily brief, but the ranger will be glad to provide additional information or answer any questions you may have.

Take your camera along!

Caution

If you smoke, please be very careful while you are on the trail. A carelessly dropped cigarette stub or match may start a bad fire.

1. NETLEAF HACKBERRY (*Celtis reticulata*). This is an Arizona representative of the Elm family. It occurs in other parts of the Southwest, and in the Colorado desert portion of California. Its berry, about the size of a pea, is reddish brown when it ripens in late summer. The Yavapai Indians ground the ripe berries, seed and all, into meal and ate it raw.

2. CREOSOTE BUSH (*Larrea tridentata*). Often erroneously called Greasewood, this plant is extremely drought-resistant. Not only does it have an extensive root system, but its leaves produce a waxy covering which keeps them from losing moisture in dry weather. Examine the leaves carefully and note their varnished appearance. Its yellow flowers, beginning in April, are followed the next month by thousands of fuzzy white seed capsules.

Creosote Bush gets its name from the odor of the crushed leaves, which were used by Indians and old timers. When boiled, the leaves yield a strong tea used as a remedy for chest colds and sore throats. They were also used in poultices.

3. VELVET MESQUITE (*Prosopis juliflora* var. *velutina*). Under favorable conditions this bush reaches tree height. Turn it upside down and you would have a tree anyway, for the roots sometimes contain more wood than the trunk and branches. They reach down great distances in their search for water, sometimes as much as 60 feet.

Seeds are produced in pods like string beans up to 5 or 6 inches in length.

The dried bean pods and beans, ground into meal, made for the

Indians one of the most nourishing of breadstuffs. Cooked, green Mesquite bean pods are still considered a delicacy by some Indians.

Atole (ah-TOL-ay), a popular native beverage, is made from the cooked and strained beans. A gum, similar in properties and value to gum arabic, is sometimes extracted from the trees in commercial quantities.

4. **CANOTIA** (*Canotia holacantha*). The shrub is somewhat out of place down here on the flat. It is common on the limestone hillsides along our entrance road and above the museum. Its principal value is for erosion control, for livestock respect its thorns.

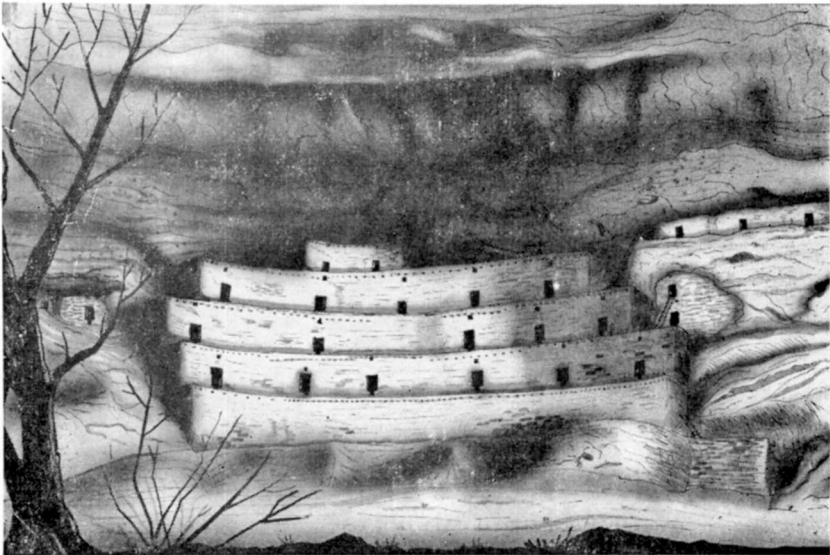
During much of its life the Canotia has no leaves. The green-barked stems, ending in sharp points, contain chlorophyll, the substance which gives plants their green color and helps manufacture plant foods.

5. **LIMESTONE CLIFFS**. The white cliffs here are composed of several types of limestone, a rock made up largely of calcite (CaCO_3). The "layered" appearance shows that these beds were deposited as sediments at the bottom of a large body of water. The water was in a great lake which occupied the present Verde Valley during the Pliocene period, just before the Ice Age. The lake existed about three million years ago.

6. **REMNAINT OF A CLIFF DWELLING** (*Castle "A"*). Behind this stake is a large ground floor room. It is one of over 40 rooms which once made up this six-story cliff dwelling. It was occupied at the same time as Montezuma Castle. The building was destroyed by a fire several hundred years ago. When all the ceilings burned out, the walls weakened and fell.

Do you see the old milling stones—the trough-shaped metate and the small mano—on the floor just where the Indian family left them?

Theoretical reconstruction of "Castle A"



7. **PREHISTORIC ROOM.** If you climb the ladder, you will find Stake # 7 beside the door of a prehistoric dwelling. Above the door (partially restored) are two holes which the Indians made, perhaps to allow smoke from their fires to escape. The odd feature is, not that this family had smoke holes, but that in the entire Montezuma Castle, 100 yards away, there is not one. Yet both of the cliff dwellings were occupied at the same time, by members of the same community.

8. **BEAM HOLES.** Look up! When the Indians built a ceiling, they placed one end of each supporting beam in a hollow in the cliff face, then packed mud around the beam end to make it secure. Now, with the beams gone, you can see the round mud sockets into which they fitted. From the second floor, where you stand, you can see that these sockets represent two additional floor levels, the third and fourth stories.

9. **CHARNEL HOUSE.** Parts of 15 skeletons were found in this cave. The cliff dwellers became crowded for grave space in their cemetery, so they cleaned out old graves to make room for new burials. The scattered bones from some of the old graves were dumped into this room.

10. **TWO BURIALS WERE FOUND HERE.** Fifteen inches below this spot, on the bottom of an artificial pit, were the remains of one tiny baby. Over it was a stone slab. Above the slab was the body of another baby, and above that the mud surface of the floor. These babies may be seen in the museum.

11. **STOREHOUSE.** See the third floor family's storehouse above that the clay surface of enough to hold a family's entire supply of corn. (You are still standing on the second floor level.)

12. **FOR HEATING AND COOKING.** This firepit lined with stones is a common type. Another type, lined only with clay, was just as common, but less durable.

13. **THE CEMETERY.** Originally the ledge above this marker extended out to form a roof over a row of seven graves which lay under



Cist burial of a middle-aged woman, with bowls, ear bobs, beads, and thunder bird pendant.

it. They were all sealed by slabs of limestone set up in front. The seven graves contained parts of 15 skeletons. As old burials were disturbed to make room for new ones, some of the old bones were probably dumped into the cave described under # 11. Totalling the dead found in this cemetery in the cave, we have about 30. The total dead found in the graves in the entire excavation of this ruin was not over 45. This is but a small percentage of the persons who must have died while the building was occupied.



Floor of Room 5 with water jar, firepit, metates and manos as found in excavations.

14. **MAHONIA** (*Mahonia fremonti*). This is often called Algerita or Arizona Holly. Navaho Indians extract a yellow dye from the wood. The crushed berries were sometimes used by the Indians to paint their skins and ceremonial objects a deep purple. Prehistoric Indians may have used the berries for food.

15. **ARIZONA SYCAMORE** (*Platanus wrightii*). Furnished a hard wood used as beams and rafters for ceilings in cliff dwellings. Kept dry, this wood lasts indefinitely but rots very quickly after exposure to moisture. In this vicinity you see many splendid specimens of this tree, for this is one of the finest Sycamore groves in the state. Ancestors of some of these trees are still holding up ceilings in Montezuma Castle.

16. **DESERT SOUTHWESTERN CONDALIA** (*Condalia lycioides*). This bush is sometimes called Southwestern Jujube, or Graythorn. Yavapai Indians crushed the black berries, added water, and drank the resulting liquid. Further south, the Pima Indians ate the berries without preparation.

17. CATCLAW ACACIA (*Acacia greggi*). The Catclaw has grasping habits. If you don't believe it, brush your arm or leg against it (at your own risk, of course) and you will understand how the plant received its name.

This shrub, like its relative the Mesquite, produces pods which were a common food source for the Indians. The pods were usually pounded into a coarse meal and made into porridge or cakes.

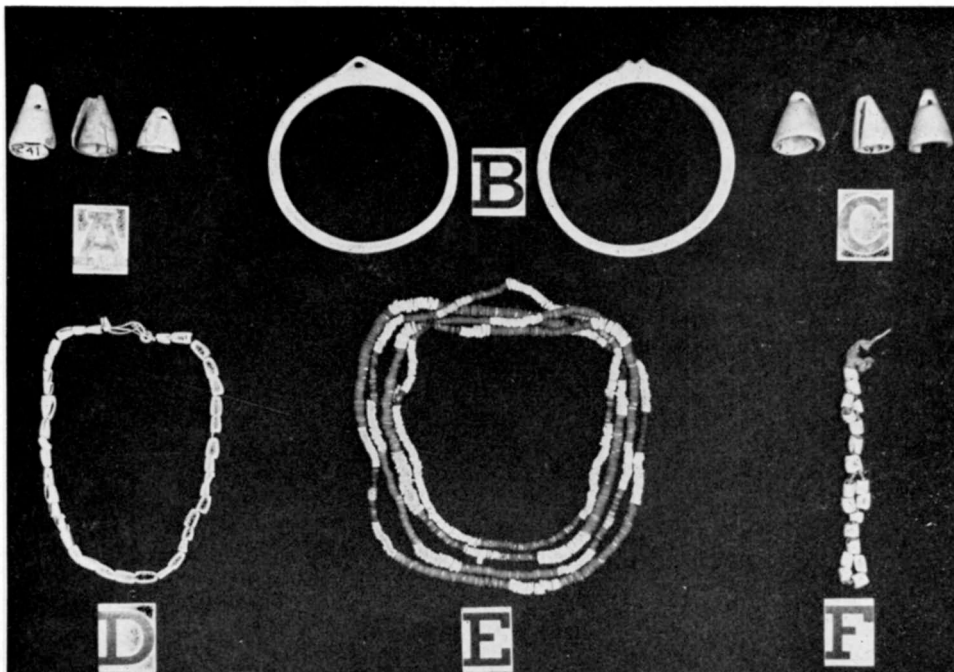
18. SINGLE WHORL BURRO BUSH (*Hymenoclea monogyra*). In common with Seepwillow this plant is finding wide use in erosion control plantings. Notice how it is thriving in these sandy areas where little else will grow.

19. FOUR WING SALTBUSH (*Atriplex canescens*). This plant is often erroneously called "Sagebrush." It is adapted to a wide range of soil and climatic conditions and is highly prized as a forage plant. It is deep rooted and is useful for erosion control.

20. BEAVER CREEK. This stream of water derives its name from the many beaver that inhabit its banks. The prehistoric Indians used it for the irrigation of crops and domestic purposes. It is still used by present-day farmers for irrigation. This creek originates about 20 miles northeast of this point and empties into the Verde River 3 miles south. One and one-half million gallons of water from Montezuma Well are added daily to this stream. The waters are too warm for trout, but catfish and carp do live here.

21. SEEPWILLOW BACCHARIS (*Baccharis glutinosa*). Is also known as Seepwillow, Water Wally and Water Motis, and probably by a few other names. The stem of this shrub has been used in the past by Indians to make paint brushes with which to decorate pottery. The

Prehistoric Indian shell ornaments.





Arizona Sycamore.

brush is made by cutting away the woody, outer part of the stem and exposing the pith, which will absorb a large amount of paint and then allow it to flow back again—something on the order of a fountain pen.

In recent times Seepwillow has been of great value in erosion control work since it grows along water courses where its deep spreading roots firmly bind the soil in place. It can thrive, too, in an overgrazed area, for livestock will not eat it.

22. DESERT WILLOW (*Chilopsis linearis*). The strong straight stems of this plant were used by the builders of Montezuma Castle for thatching ceilings. It is not a true Willow, but is a relative of the Catalpa. Dry Catalpa-like seed pods often are in evidence.

23. VELVET ASH (*Fraxinus velutina*). The Ash is a dioecious tree, that is, one in which the male parts (stamens) occur on one tree and the female parts (pistils) occur on another. This is one of nature's methods to prevent inbreeding. This individual is a female (pistillate) tree. Notice, in spring and early summer, the seed crop it produces.

24. VELVET ASH (*Fraxinus velutina*). Oh, yes, you just saw one of these at Stake # 23. Do you notice any difference between the two? The other one was mama and this one is papa. This is the staminate plant and does not produce seeds. No. 23 is raising some of his children.

25. ARIZONA BLACK WALNUT (*Juglans major*). The individual you see here is an immature tree. Adults in this region reach heights of 45 to 50 feet and diameters of 15 inches or more. Indians used the nuts for food, for they are very rich and nourishing.

26. WESTERN SOAPBERRY (*Sapindus drummondi*). Some specimens produce amber colored fruit rich in saponin which is sometimes used by natives of the southwestern United States and Mexico for washing clothes. The fruits are poisonous, and in parts of Mexico natives stupify fish by throwing the crushed fruits into water.

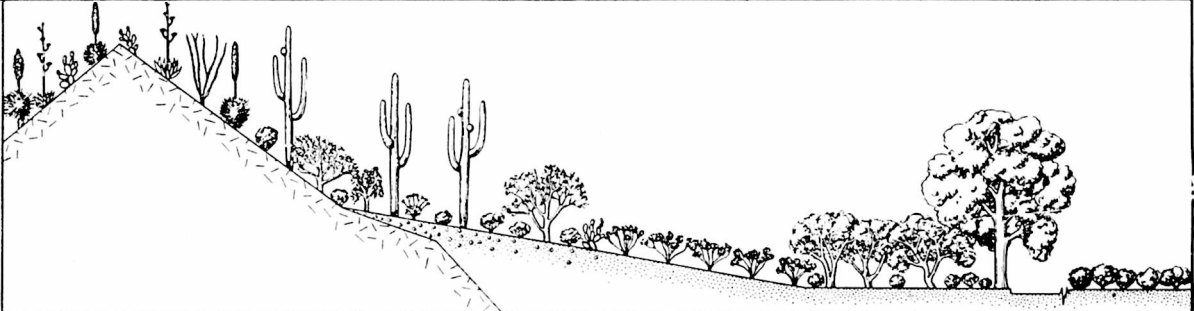
VEGETATIONAL TYPES	YUCCA-AGAVE-SOTOL		PALO VERDE-SAGUARO-CACTUS		CREOSOTE BUSH	MESQUITE	WILLOW- COTTONWOOD	SALTBUSH
	YUCCAS OCOTILLO TURPENTINE BUSH PRICKLY PEARS FALSE MESQUITE	AGAVES SOTOL EPHEDRAS JOJOBE	PALO VERDES OCOTILLO PRICKLY PEARS EPHEDRAS JOJOBE	SAGUARO DESERT IRONWOOD CHOLLAS BRITTLE BUSH BUR SAGE	CREOSOTE BUSH BUR SAGE WHITE THORN CAT CLAW	MESQUITE CAT CLAW SALTBUSHES LYCIUMS JUJUBE	WILLOWS COTTONWOOD ARROW WEED BATAMOTE	SALTBUSHES GREASEWOOD PICKLEWEED
BASIN-AND-RANGE PROFILE								
LAND FORMS & SOIL CONDITIONS	ERODING MOUNTAIN SLOPE		UPPER BAJADA	LOWER BAJADA	BOTTOM LAND	STREAM CHANNEL	PLAYA	
	SHALLOW, ROCKY OR GRAVELLY SOIL WITH GOOD DRAINAGE. NO SUBSURFACE WATER		COARSE-TEXTURED, ROCKY, WELL-DRAINED SOIL. PARTLY UNDER- LAID BY ROCK BENCH. NO SUBSURFACE WATER.	SANDY AND FINE- TEXTURED SOIL. OFTEN WITH CALICHE HARDPAN. NO SUBSURFACE WATER.	FINE-TEXTURED SOIL WITH POOR DRAINAGE AND LOW SALT CON- TENT. SUBSURFACE WATER AVAILABLE.		SIMILAR TO BOTTOMLAND BUT WITH HIGH SALT CONTENT.	

Chart showing the distribution of Arizona desert plants in relation to varying locations and soil conditions (From "Manual of Southwestern Desert Trees and Shrubs," by Benson and Darrow, by courtesy of the University of Arizona.)

27. MIMOSA (*Mimosa biuncifera*). We have already introduced you to two members of this family, the Velvet Mesquite and the Catclaw, and this is the third which makes its home in this area. Its thorns make it even more unpleasant to get acquainted with than the Catclaw, and the smaller seed pod offered little inducement to Indian food gatherers.

28. Please leave this booklet when you go, or you can purchase it by dropping 10 cents in the coin slot of the stand where this booklet was obtained.

* * * *

In addition to the plants that have been called to your attention many others may be found growing in this area. In fact, 167 species representing 60 families have been recorded within the boundaries of this monument. This is because Montezuma Castle National Monument is situated in the very northern part of what is known as the Lower Sonoran plant zone. Typical plants of this arid zone are the ones that you have seen such as the Creosote Bush, Mesquite and Catclaw. Other plants typical of the Upper Sonoran plant zone, but found here, are Hackberry, Utah Juniper, and Indian Paintbrush.

Perhaps you saw and heard many birds during your walk. This is not uncommon, for 138 species have been recorded here since 1937. Some visit during the summer and some during the winter, while others stay the year around. Ducks and Geese use the waters of Beaver Creek during the migration period, and Owls sleep in the holes in the cliffs above you. If you are interested in birds, note the booklet, "Birds of Montezuma and Tuzigoot," on sale here for 25 cents.

Animals, too, are protected in National Park and Monument areas. Most commonly found at this elevation (3200 ft.) are Rabbit, Porcupine, Coyote, Fox, and Beaver. During the summer months, harmless Lizards are seen scampering across the trails. Also typical, but not a menace, in this semi-desert region are Rattlesnakes, Bullsnares, Tarantulas, Scorpions, Centipedes and others.

Montezuma Castle National Monument is one of the oldest in the National Park System. It was proclaimed a monument by President Theodore Roosevelt, December 8, 1906. Montezuma Well became a detached portion of this area in 1947. The combined areas cover 783 acres.

We hope you have enjoyed your short walk and your visit to Montezuma Castle National Monument. If you have any questions about this National Monument or desire additional information relative to this area and its features, the Superintendent or Ranger will consider it a privilege to help you.

NATIONAL PARK SERVICE.

Montezuma Castle National Monument, a unit of the National Park System, is one of 21 areas administered by the General Superintendent, Southwestern National Monuments, National Park Service, Gila Pueblo, Globe, Arizona.

The traveling public is becoming increasingly aware of the National Monuments, which have received less publicity than the great, well-known National Parks, yet which possess extremely interesting features.

Many of these are in the Southwest; we hope you will take the opportunity to visit one or more of them on your trip.

*Administered as a group by the General Superintendent,
Southwestern National Monuments, Box 1562, Gila Pueblo, Globe, Arizona*

- IN UTAH:** Arches National Monument, Moab
Natural Bridges National Monument (care of Arches)
Rainbow Bridge National Monument (care of Navajo)
- IN NEW MEXICO:** Aztec Ruins National Monument, Aztec
Capulin Mountain National Monument, Capulin
Chaco Canyon National Monument, Bloomfield
El Morro National Monument, El Morro
Gila Cliff Dwellings National Monument (care of General Supt.)
Gran Quivira National Monument, Gran Quivira
- IN ARIZONA:** Canyon de Chelly National Monument, Chinle
Casa Grande National Monument, Coolidge
Chiricahua National Monument, Dos Cabezas
Coronado National Memorial (care of Tumacacori)
Montezuma Castle National Monument, Camp Verde
Navajo National Monument, Tonalea
Sunset Crater National Monument (care of Wupatki)
Tonto National Monument, Roosevelt
Tumacacori National Monument, Tumacacori
Tuzigoot National Monument, Clarkdale
Walnut Canyon National Monument, Rt. 1, Box 790, Flagstaff
Wupatki National Monument, Tuba Star Route, Flagstaff

Other areas administered by the National Park Service in the Southwest follow:

- IN ARIZONA:** Grand Canyon National Park, Grand Canyon
Grand Canyon National Monument, Grand Canyon
Organ Pipe Cactus National Monument, Ajo
Petrified Forest National Monument, Holbrook
Pipe Spring National Monument, Moccasin
Saguaro National Monument, Rt. 8, Box 520, Tucson
- IN ARKANSAS:** Hot Springs National Park, Hot Springs
- IN COLORADO:** Black Canyon of the Gunnison National Monument (care of Colorado National Monument)
Colorado National Monument, Fruita
Great Sand Dunes National Monument, Box 60, Alamosa
Mesa Verde National Park
- IN NEVADA:** Lake Mead National Recreation Area, Boulder City
Lehman Caves National Monument, Baker
- IN NEW MEXICO:** Panderlier National Monument, Santa Fe
Carlsbad Caverns National Park, Carlsbad
White Sands National Monument, Box 231, Alamogordo
- IN OKLAHOMA:** Platt National Park, Sulphur
- IN TEXAS:** Big Bend National Park.
- IN UTAH:** Bryce Canyon National Park, Springdale
Capitol Reef National Monument, Torrey
Cedar Breaks National Monument (care of Zion)
Timpanogos Cave National Monument, Pleasant Grove
Zion National Park, Springdale
Zion National Monument (care of Zion)

This booklet is published by the SOUTHWESTERN MONUMENTS ASSOCIATION

Box 1562 F, Globe, Arizona

which is a non-profit distributing organization pledged to the preservation and interpretation of Southwestern features of outstanding national interest.

The Association lists for sale many interesting and excellent publications for adults and children and very many color slides on Southwestern subjects. These make fine gifts for birthdays, parties, and special occasions, and many prove to be of value to children in their school work and hobbies.

May we recommend, for instance, the following items which give additional information on Montezuma Castle National Monument and the Southwest:

DUPLICATE COLOR SLIDES—Kodachrome duplicates in individual cardboard redimounts—50 cents a slide, any 6 for \$2.50, any 12 for \$5.00, etc. Please order by number.

MONTEZUMA CASTLE NATIONAL MONUMENT, ARIZONA—SWMA Slides

- S-75 Prehistoric pick with wooden handle in foliage.
- S-73 Beaver Creek valley seen through door in Castle.
- S-74 Baby burial under floor in Castle.
- S-75 Prehistoric pick with wooden handle in Castle museum.
- F-7 Beaver-cut Cottonwoods at Montezuma Well.
- F-8 Large cliff dwelling at Montezuma Well.

Paul Thomas Slides

- K-12A The Castle, 600 years old.
- K-12B Montezuma Well cliff dwellings
- K-12C Cliff Ruin, Montezuma Well.
- K-12D Reflections in the Well.
- K-12E Red Rock near Montezuma Well.
- K-12F Picturesque Jerome, Arizona.

OAK CREEK CANYON—Jack Breed Slides

- OC-1 Lovely general view of Oak Creek Canyon in springtime, blooming flowers in the foreground, pattern of fruit trees, and the rugged colorful cliffs in the background.
- OC-2 Peaceful trout pool along Oak Creek.
- OC-3 Sparkling waters of Oak Creek with a

waterfall and gorgeous clouds. (Featured in full page color in the October 1946 issue of *Arizona Highways Magazine*.)

- OC-4 A quaint garden in Oak Creek, rustic fence and all.
- OC-5 View of Oak Creek from atop Schnebley Hill.
- OC-6 Roadway to Oak Creek from Schnebley Hill Trail.
- OC-7 Looking up the creek from the Sedona Bridge.
- OC-8 Lovely waterfall above a small trout pool.
- OC-9 Red Rock ranch and the colorful cliffs with clouds.
- OC-10 A favorite movie set location in this striking side canyon.

Lollesgard Slides

- L-G9 Upper Oak Creek Canyon
- L-G10 Lower Oak Creek Canyon.
- L-G11 Lower Oak Creek Canyon ranches.
- L-G12 Verdant Oak Creek Valley
- L-G13 Court House Rock, Oak Creek Canyon.
- L-G15 Fishing in Oak Creek
- L-G16 Midgley Bridge, Oak Creek Canyon
- L-G17 Ranches in Oak Creek Canyon.

- ***45. **FLOWERS OF THE SOUTHWEST DESERTS.** Dodge and Janish. More than 140 of the most interesting and common desert plants beautifully drawn in 100 plates, with descriptive text. 112 pp., color cover, paper\$1.00
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- ***95. **BIRDS OF MONTEZUMA CASTLE AND TUZIGOOT.** Collins. Up-to-date (1951) description of the bird life of these areas, interestingly and popularly written by an expert. 8 color plates. 16 pp., paper\$0.25
- **107. **TUMACACORI'S YESTERDAYS.** Jackson. The interestingly written story of 18th and early 19th century Indian and Spanish life in southern Arizona and Sonora as reflected in the early history of San Jose de Tumacacori (now Tumacacori National Monument). 96 pp., 53 excellent illustrations, color cover, paper.....\$0.75

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