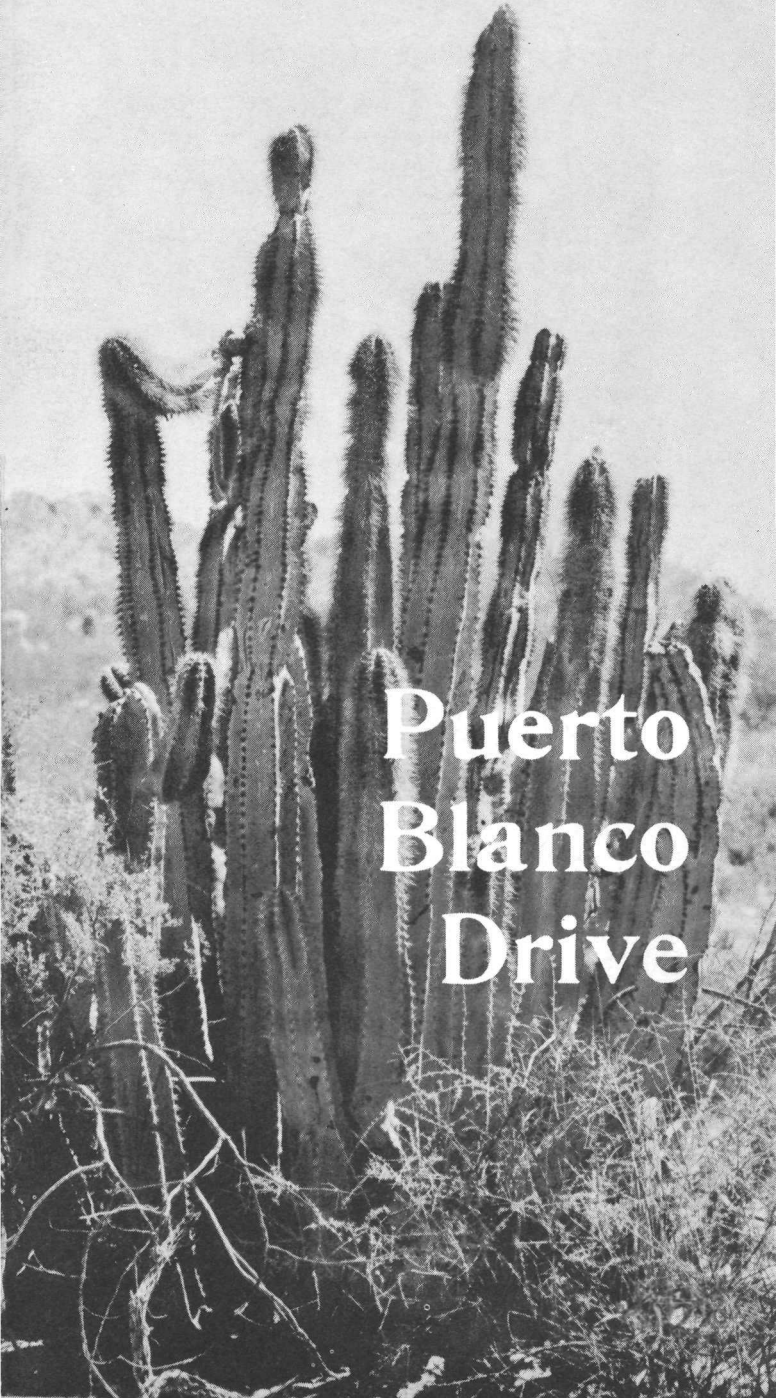
10 cents if you take this booklet home

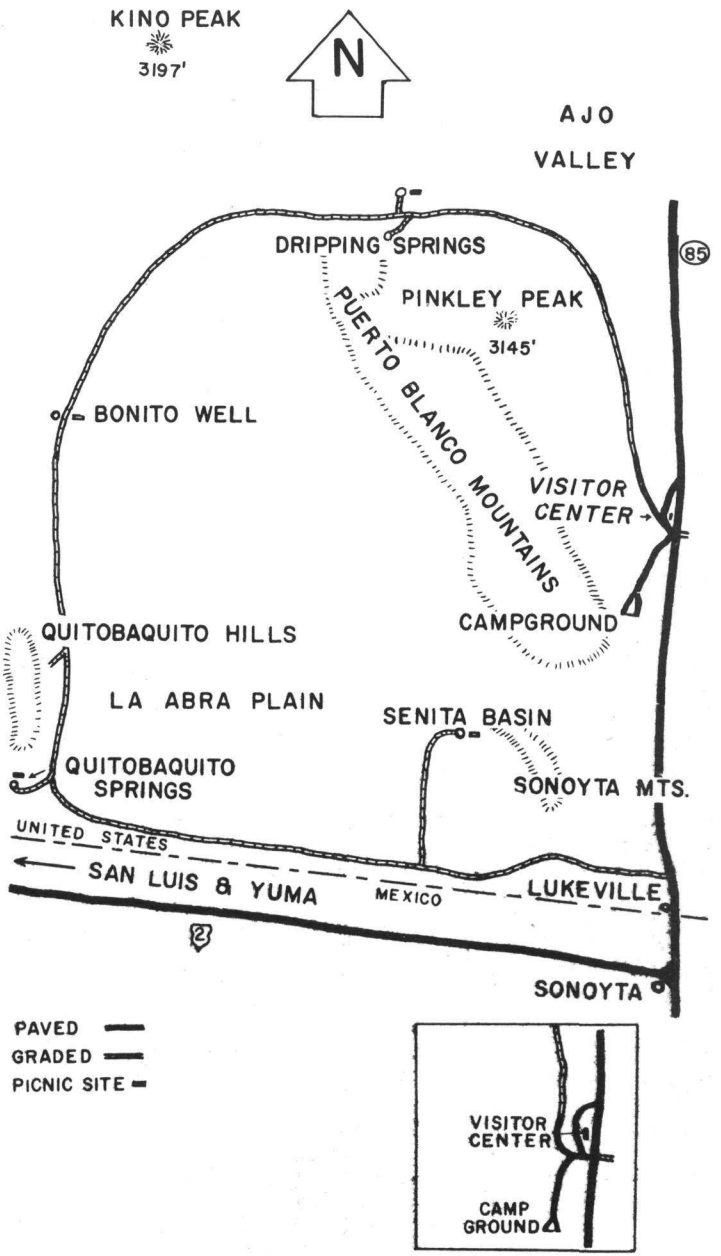


Puerto Blanco Drive

ORGAN PIPE CACTUS NATIONAL MONUMENT

ARIZONA

PUERTO BLANCO DRIVE



Puerto Blanco Drive

How to use this leaflet

The Puerto Blanco Drive is designed so you may leisurely enjoy the scientific and natural highlights of this part of the Sonoran Desert. We believe such enjoyment may be enhanced by better understanding what you see. Numbered posts along the drive refer to matching sections in the leaflet which interpret these special points of interest. Your questions and observations will be welcomed when you return to the Visitor Center.

Description of the Drive

The narrow graded road will take you through 51 miles (including the spur roads) of the southwestern section of the Monument. Although the road may be traveled either way, a counter-clockwise direction from the Visitor Center is recommended. Be alert, especially in the blind washes and curves, for oncoming traffic.

Cars driven off the road onto the desert floor leave tracks which last for years. You may, however, have to ease off the road for an approaching roadgrader. The preservation of the natural scene with a mimimun of disturbances is our obligation. All natural features must be left as you find them so those generations yet to come may find the desert in the same wild condition.

Litter detracts from the desert scene. Please save your disposables for their proper place.

Bobcat

Photographic tips

The strong shadows of late afternoon and early morning offer the photographer a scene of bold contrasting light; a proper attire for the dramatic desert community. Colors tend to be flat under the midday sun, which can be deceptively bright. Study the lighting and set your camera carefully. Best chances for seeing wildlife are during early morning and late afternoon hours.

1. Sonoran Desert

All around you are the plants, animals and geology that distinguish this as the Sonoran Desert. What first appears a strange and harsh land turns into an intriguing and interesting place as you become familiar with your surroundings. Most of the plants near here will be introduced at the various turnouts along the way.

To your left are Twin Peaks (2,615'), a frequent hiking objective for those staying in the campground. You may wish to add your name to the register on top.

2. Decomposing Saguaro

Even in death a saguaro (sah-WAR-oh) cactus continues to serve the plant and animal community around it. Termites, ants and other insects find food and shelter in its carcass. Decomposition of the cactus is thus sped for its eventual return to the soil as humus, making fertile ground for new plants. The tough, woody skeleton remains long after the pulpy body has distintegrated.

3. Geology—Pinkley Peak

The massive mountain rising ahead of you is Pinkley Peak, named for Frank Pinkley. "Boss" Pinkley was the able and popular superintendent of all the Southwestern National Monuments during their difficult formative years in the early part of this century.

The Puerto Blanco Mountains, like the Ajos (AH-hose), were formed by volcanic lavas flowing from fissures in the ground. Only in recent (tertiary) geologic times were they thrust or faulted into mountains. The ranges in this area belong to the southern portion of the North American Basin and Range Province.The dark brown basalt rock typifies the lava while the yellowish blotches (tuff) are the hardened or compressed ashes from earlier eruptions.

4. Ajo Valley

The broad expanse ahead of you is the Ajo (AH-ho) Valley, separating the Ajo and Puerto Blanco Mountains.

Fierce summer rains erode the scantily vegetated slopes and force rock debris out of the canyon mouths to deposit it in triangular-shaped alluvial fans. The finer material is carried farther out onto the valley floor to become outwash plains or *bajadas* (ba-HAH-dahs). The complex of normally dry washes or *arroyos* in the valley channel the occasional great walls

of water after summer cloudbursts. Hence the mountain ranges, as they rise, continue to crumble, fill the valleys and slowly bury themselves.

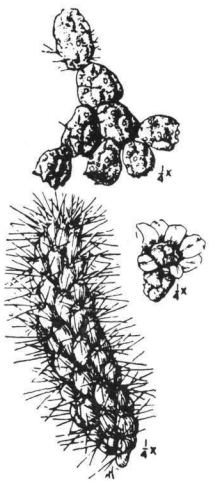
5. *Ajo Mountains*

The Ajo Mountains, across the valley to your right, rise 4,808 feet above sea level and 2,400 feet above the Estes Canyon Picnic Area. *Ajo* is the Spanish word for garlic and refers to the ajo lily with its edible garlic-like root. Within those shadowed canyons is an abundance and variety of plant and animal life found nowhere else in the Monument. Here the desert bighorn sheep, mule deer, whitetail deer, javelina and other wildlife find browse, occasional waterholes, and seclusion from man.

The isolated pinnacle at the northern end of the range is Montezumas Head, an important feature in mythology of the Papago Indians.

6. *Desert Pavement*

Rapid runoff from summer rains is not confined to *arroyos*. Sheetflooding carries debris over the *bajada* and deposits it as the water subsides. Lighter soil particles are carried away, leaving the tiny cobblestone-like effect of desert pavement.

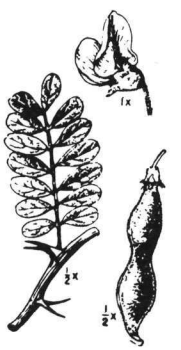


Chain-fruit Cholla

Notice the chain-fruit cholla (CHOY-ya) 7 yards to the right of the post and the many others scattered all around you. Blossoms appear on last year's fruit, adding a new segment to the "chain" which gets longer each year until it falls off from weight or disturbance.

7. *Wash Environment*

The vast network of *arroyos* over the valley floor are the avenues of rainfall runoff. Consequently, these drainages host a dense plant community, including a rich variety of spring flowers. Possibly the backbone of such environments is the legume or pea family. While some legumes are shrubs, others such as the ironwood, mesquite, palo-verde, smoke-tree, catclaw acacia (*see* page 7), and whitethorn acacia reach tree size. Features aiding identification are thorns, compound leaves and seed pods.



Ironwood

Blue Palo-verde

Notice the ironwood with the dense bluish-green foliage 13 yards ahead of the numbered stake. Wood of this tree is extremely heavy and hard. Small purple and white flowers appear in early summer.

A large blue palo-verde is located directly behind the ironwood before you. Notice that the bark is mostly green, a distinguishing feature from the gray bark of the ironwood and mesquite.

The large feathery tree 10 yards to your right is a mesquite, often confused with ironwood. Mesquite was perhaps the the most essential tree to the Indians. The beans were ground into a *pinole*

Common Honey Mesquite

flour and the wood used for fuel and utility purposes. The nutritious beans are good livestock browse and ranchers use the wood to build corrals and fences.

A mistletoe - choked palo-verde is ahead and to your left. Red mistletoe berries are a popular food for many birds, including the phainopepla.

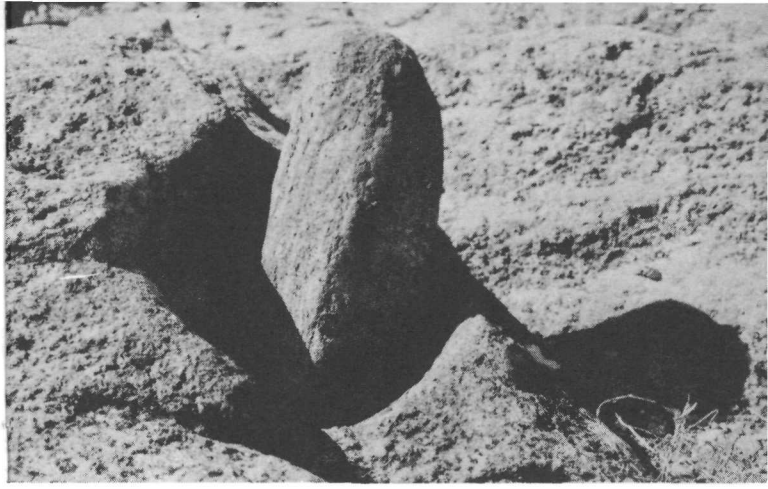
8. *Ephedra or "Mormon Tea"*

This cone-bearing shrub is a distant relative of the pine family, but differs markedly from it in having some characteristics common to the flowering plants. It is a surviving relic of an ancient, more widespread and variable group of plants. The small scale-like leaves aid in conserving moisture.

A palatable tea was brewed from it by early Mormon settlers, while tannin and alkaloids provided medicine for many ailments in those pre-drugstore days.

9. *Dripping Springs*

Follow the trail 160 yards up to the small alcove containing Dripping Springs On your way stop at the "Indian kitchen" and note its facilities. Water was available nearby for processing food that was ground in the mortar hole near the cave entrance. Cylindrical stone grinders, known as pestles, were used in this work. The ground meal could then be cooked over an open fire in the cave, where the smoke darkened the ceiling and escaped through a natural opening. Additional motar holes are located on the ledge below you near the parking area, where grinding could take place in good weather. Refuse was readily disposable by dumping into the adjacent gully.



Mortar and Pestle

Papago Indians used this area while hunting and harvesting organpipe and saguaro fruit, but not as a permanent settlement.

Since this is the only permanent waterhole in the Puerto Blanco Mountains, it is much used by wildlife. During summer months the patient, quiet observer may see desert bighorn sheep, whitetail deer and whirring swarms of white-winged doves. Rainwater has been stored in numerous fractures in the rock. Faulting or slipping in the rock below has dammed the circulation of groundwater and forced it up to the surface through another set of vertical cracks from which it drips all year.

The large shrub just to the left of the springs is a desert hackberry. Its fruits, rather dry and insipid, were gathered by Papagos for food, and are relished by birds and small desert mammals.

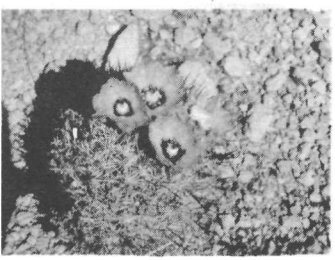
Catclaw acacia

The rocky trail branches 25 yards back of the spring and continues another 390 yards to the ridge or saddle and a fine panoramic view of the desert. The building in

the valley, on the far side, is a miner's old tin shack. The pillars of light yellowish tuff on this ridge reminded early explorers of a *puerto blanco* (Spanish for white gate), hence the name for this mountain range.

10. Acuña or Pineapple Cactus

The small reddish-spined cactus sparsely scattered about these hills is the rare acuña cactus found only in this area of the Monument. The pink and red flowers are among the first cactus blooms to appear in the spring. The blossoms are followed by a pale green fruit.



Acuña Cactus

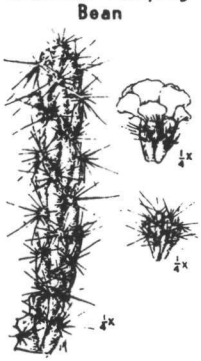
The large shrub behind the sign is a Mexican jumping bean. Its milky sap may irritate your skin much as poison-ivy would. The sap was used by the Indians as a poison when hunting and fishing.

Mexican Jumping Bean

11. Arizona Succulent Desert

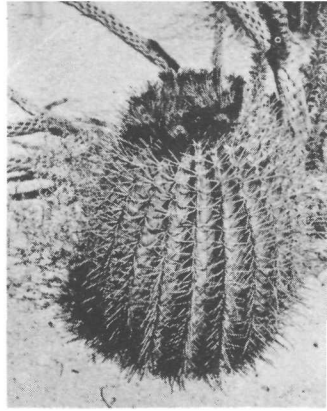
This valley offers the sensitive combination of soil texture, temperature, moisture and drainage to allow the growth of such cacti as organpipe, Coville barrel cactus, buckhorn and teddybear cholla. These succulents absorb water through the roots for storage in their tissues, to use in times of drought.

The cactus family is thought to have evolved from the rose family 18 to 20 thousand years ago. In order to conserve moisture, the water-consuming leaves have been specialized into spines, while the green



Buckhorn Cholla

food - making chlorophyll, normally found in the leaves, continues to function in the large fleshy stems. Notice the organpipe cactus skeleton near the stake.



Coville Barrel Cactus

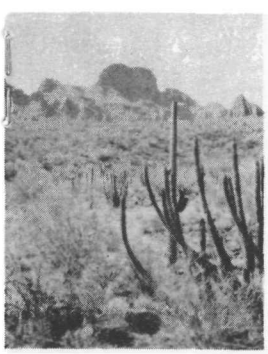
12. Sangre-de-drago

Sangre - de - drago (Spanish for dragon's blood) refers to the reddish sap found in the roots. It was used by the natives for tanning, dyeing and as a miscellaneous cure-all for illnesses. The pliable branches have led to the name limberbush. The thick fleshy stems and leaves have water storage capacity suitable to desert aridity.

13. Kino Peak

The dominant, block-like mountain on your right is Kino Peak (3,197'), highest point in the Bates Mountains. It commemorates Father Kino, the Jesuit missionary priest who spent 24 years of the late 17th and early 18th centuries on the Sonoran Desert, teaching Christianity and improved agriculture to the Indians. He established a small mission in 1701 near the village of Sonoyta, just across the Mexican border. Kino was also a competent geographer and a very hardy traveler. He once rode 50 miles in a day, slept a few hours and rode 75 miles the following day.

Kino Peak



14. Golden Bell Mine

To your left are the diggings of Charlie Bell, a luckless miner who failed to make his fortune here. The mine yielded ½ ounce of gold per ton of ore and

was reportedly "salted" with shotgun blasts of gold dust in an effort to sell it.

15. *Organpipe Cactus*

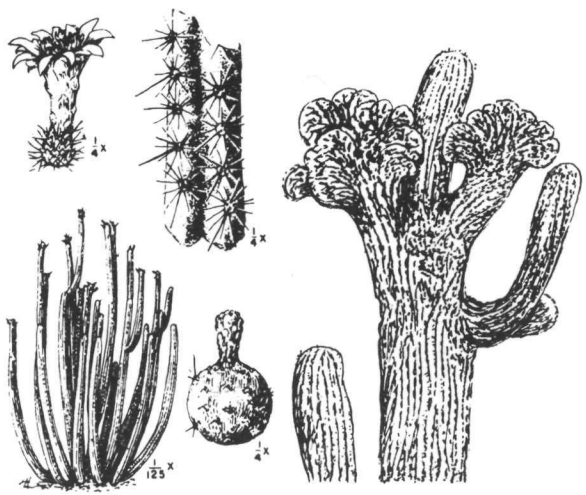
Following the short walk to the wash on your right leads to one of our finest specimens of organpipe cactus. The organpipe, although not so abundant as the saguaro and other cacti, is important here, since this area represents its northernmost range. It occurs in greater abundance in the adjacent Mexican state of Sonora.

The light lavender flowers bloom near the stem tips in May and June, and are followed by red fruit in July. Indians occasionally come into the Monument to collect the tasty fruits, once a staple part of their diet.

The seven saguaros under the paloverde 25 yards to your right were all "born" under the maternal shelter of this "nurse" tree.

16. *Bonito Well*

The windmill is a lonely symbol of man and his struggle for water on the desert and serves many species of wild



Organpipe Cactus Cristate Saguaro

life as well as domestic cattle. Bonito (pretty) Well belongs to a local rancher, who with his father and brothers grazed cattle here before this area was proclaimed a National Monument in 1937. This family has a revocable permit, which cannot be passed on to others.

Note the mesquites and tamarisks or "salt-cedars." The latter are native to the Mediterranean region.

17. *Cristate Saguaro*

A short walk across the wash on your right is a large example of a cristate cactus. This abnormal growth, not yet fully understood, may be due to an injury causing a local change in the plant. These fan-shaped "crests" may also appear on the organpipe, and rarely on the barrel and cholla cacti.

18. *Cipriano Junction*

The primitive road to your right winds north through the arid expanse of the Growler Valley, and is not recommended for passenger cars.

This is the eastern portion of the California Microphyll Desert, so named because of the predominance of such small-leaved plants as the creosote-bush and its smaller companion, the gray-green bur-sage. Together they comprise about 80% of this desert vegetation.

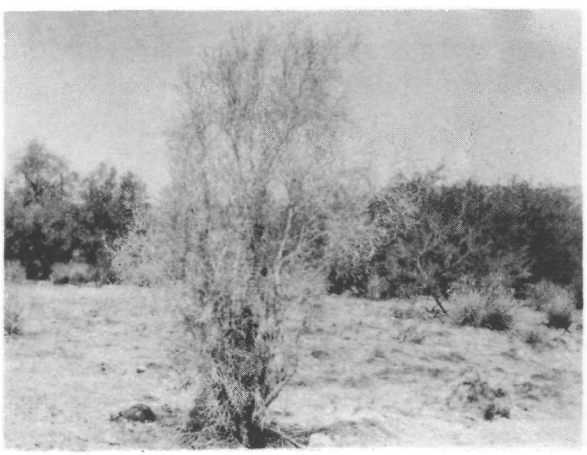
The small varnish-covered leaves and branches of the creosote-bush minimize water eveporation, a most important ability in a hot desert. After a rain the plant gives off a musty, resinous odor which explains its Mexican name, *hedi-ondilla,* meaning roughly "little stinker." The sticky lac on the branches was used by Indians as a glue and for waterproofing basketry. The leaf was used in remedies for rheumatism, tuberculosis, gastric problems and as an antiseptic for wounds. The dark walnut-sized balls

often found on the stems are caused by an insect, the gall midge. A few small yellow flowers may appear after a winter rain, but are normally abundant only in the spring, after which appear white, fuzzy seed pods.

Cipriano Junction and Pass are named for Cipriano Ortega, a local "badman" of the late 1800's. When not terrorizing the citizenry, he was an enterprising freighter, miner and civic organizer.

19. *Smoke-tree*

The smoke-tree, another member of the pea family, is found in the Monument only in the nearby sandy washes, where



Smoke-tree

(Detail)

it can benefit from run-off. Water is conserved when the plant drops its leaves early in the season. To the imaginative traveler the tree appears as a gray cloud of smoke rising from a desert campfire. The many small indigo flowers appear in late spring.

Indians used a dye extracted from the twigs to color baskets, and ate the roots of a similar species.

Turn right at the junction ahead for your next stop and Quitobaquito Pond.

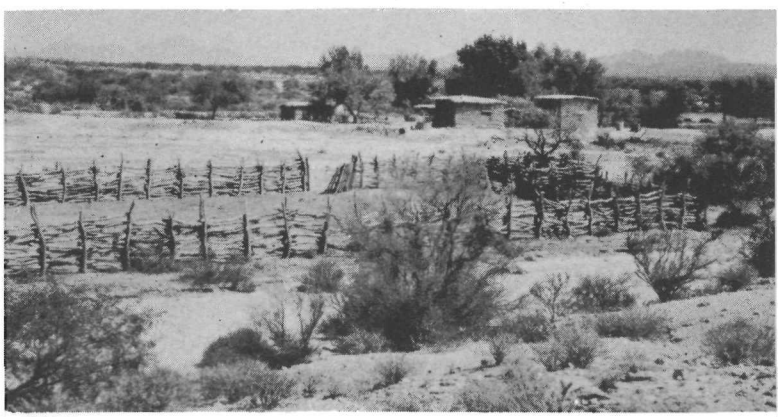
20. *Rock Altar*

This pile of "prayer stones" was placed here by the Papago Indians as they passed to or from Quitobaquito Springs. A sprig of creosote-bush was placed between two stones which were added to the pile as a token of good luck for the journey ahead.

Fremont Cottonwood

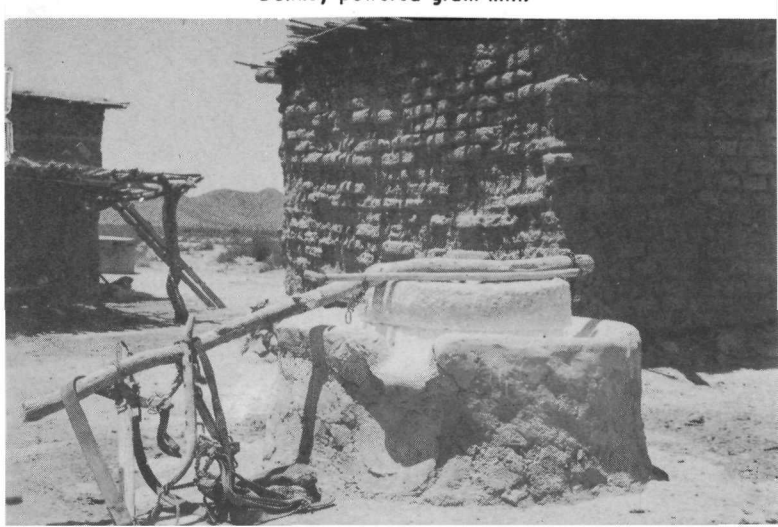
Quitobaquito

Exhibits around the pond tell the story of this desert



Historic Indian settlement by pond.

Donkey powered grain mill.



oasis. We hope you will linger here awhile among the cottonwoods, read the exhibits, enjoy the bird life, the diverse vegetation, and the tranquil atmosphere of this sylvan beauty spot.

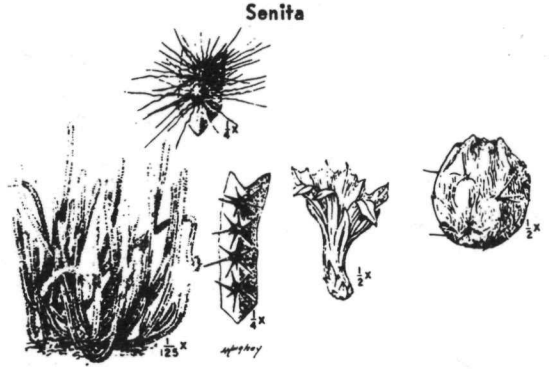
21. *Wright Cholla and Salt-bush*

The abundant grayish cactus in this vicinity is the Wright cholla. Summer flowers add a dash of yellow to this otherwise inconspicuous plant. It prefers fine silt or sandy soil, which may drift over the cactus, giving it a hummock appearance. The cholla serves as a good soil binder on this loose desert floor.

The four-wing salt-bush derives its name from the four "wings" extending from the seed. The bush is good browse, probably due to its salty taste. Indians ground the roots and blossoms into meal, mixed it with saliva, and used it as a cure for ant bites.

22. *Senita Cactus*

The Mexicans noticed the specialized gray whisker-like spines on the upper ridges of this cactus and called it *senita,* meaning "old one." There is a similarity to the organpipe in the clustered branching-from-the-ground type of growth; however, the senita has fewer ribs and spines. Small, pink, unpleasant-smelling flowers usually bloom during May nights. Senitas in the United States are limited to this vicinity of southern Arizona, but are abundant in Sonora, Mexico. (*See* cover).


Senita

23. *International Boundary*

The southern portion of Arizona, between the present boundary and the Gila River, was purchased from Mexico by the United States in 1853-54. It was obtained for 10 million dollars, through a treaty known as the Gadsden Purchase. Boundary surveys were soon begun through this little known and often hostile region. Passes through the torrid mountain country to the west offered the only route to Yuma. This route, aptly known as the *Camino del Diablo* or Devil's Road, twice turned back the survey party. They eventually succeeded by traveling at night and building fires as survey markers.

Across the fence is Mexican Route 2, a paved, scenic short cut from Sonoyta to San Luis and cities in California.

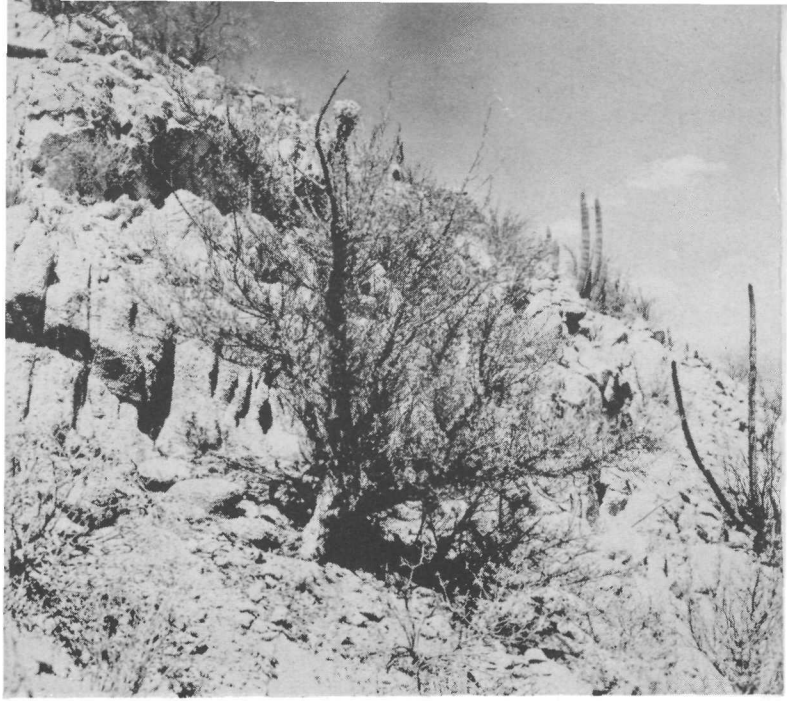
24. *Senita Basin*

In this quite, verdant basin the alert observer may see such wildlife as peccaries, mule deer and desert bighorn sheep.

Notice the senita cactus just across the road on your left. A stroll about the area to your right will reveal scattered stands of this unusual plant.


Elephant-tree

Follow the trail to your left about 80 yards up the slope to an elephant-tree, a member of the torchwood family. Do you see a resemblance in the reddish-brown tapered branches to an elephant's trunk? The aromatic leaves with 10 to 35 pairs of leaflets produce



Elephant-tree

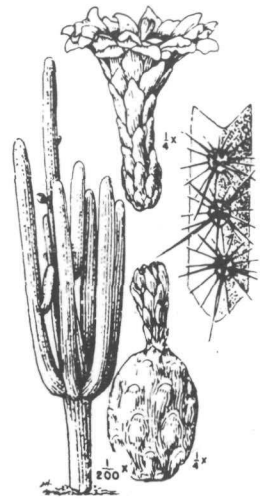
copal, a resin which was burned as an incense by the Indians during religious ceremonies. In Mexico, where the tree is more common, the red sap was used for dyeing, and tannin extracted from the bark was employed in curing hides. Freezing temperatures may kill the sensitive branches, although the root system will produce a new growth.

Note the difference in color and texture of the granite rock comprising these ancient Sonoyta (son-NOY-ta) Mountains as compared with the younger, dark volcanic formations to the north and east.

A half mile ahead at the turnaround is a picnic site.

25. *Saguaro Forest*

The road passes through one of the best saguaro stands in the Monument as you near the end of the drive. These giant cacti, ever symbolic of the Sonoran Desert, may reach a height of 50 feet, an age of 200 years, and weigh many tons. The creamy blossom, appearing in April and



Saguaro

May, is the state flower of Arizona.

The Papago Indians use the fruit and seeds for food, and in preparing an alcoholic beverage.

Saguaros continue to produce flowers and fruit in season through severe dry periods, by utilizing water stored in their tissues. The holes in these giants were excavated for nests by Gila woodpeckers. After the rest of the plant has died and rotted away these hardened cavities, known as "cactus boots," remain intact on the desert floor. One of these boots may be seen at the Visitor Center.

Look to your right into the Mexican state of Sonora, and at the massive granite Cubabi (coo-BAH-be) Mountains. The small cluster of buildings you see is Lukeville, while the Mexican village of Sonoyta lies out of sight 2 miles beyond.

We trust you have enjoyed wandering over this part of the Sonoran Desert, and that you will take home a bit of its ideas, its ways and moods. Perhaps you have taken the Ajo Mountain Drive. If not, we recommend this 21-mile scenic route that winds eastward into the Ajo Mountains and through the hills and valleys of this colorful part of the Monument. A guide for the drive, and suggestions for hikes into the Ajos, are available at the Visitor Center.

4-66—3rd. SWMA Ed.—10M

THE NATIONAL PARK SERVICE

The National Park Service of the United States Department of the Interior administers the National Park System, which is dedicated to conserving the scenic, scientific, and historic heritage of the United States for the benefit and enjoyment of its people. Organ Pipe Cactus National Monument was established as a unit of this system so that an outstanding section of the Sonoran Desert could be preserved, not only for the present generation of Americans but also for those to follow.

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