

FLORA & FAUNA OF THE SONORAN DESERT

By George Constantourakis

This arid, sun-baked region of North America covers an area of 120,000 square miles across southern Arizona to California, the Colorado River Delta, and extends deep into the Mexican state of Sonora, and the peninsula of Baja California.

About 60 miles west from Tucson, AZ is the Papago Indian Reservation stretching 2.5 million acres down to the Mexican border, today it is home to some 6,000 Papago or '*Tohono O'dham*' (the desert people). The *Tohono O'dham* used to migrate in the desert foothills in the winter, and in the summer they returned to the lowlands where flash floods watered their fields allowing them to farm corn, beans, and squash. They also hunted and gathered desert food. They were masters in living in the harsh desert conditions. However when the summer rains occasionally failed to come they would be faced with starvation.

The Sonoran desert - with temperatures exceeding 110 degrees Fahrenheit in the summer and moderate winters - is one of the largest and almost intact arid ecosystems in the world. What is of particular importance is that the Sonoran desert has rainy seasons in both summer and winter, thus fostering a varied animal life and making it the richest botanically desert with more than 2,500 species of plants - mainly short trees and shrubs, and a great variety of 300 types of cactus.

Cacti are plants typical to arid zones. They exhibit a wide variety of size, form, and adaptations to dry conditions. Cacti are succulent and store water, sometimes in the roots, but usually in swollen stems and are thus capable of sustaining the plant over several years without rain. They are leathery plants with thick waxy cuticle. Cacti have a wide range of flowers. Bird-pollinated dayflowers are reds and yellows and are scentless. Moth and bat-pollinated flowers are white and strongly perfumed. The fruits are usually fleshy and sometimes edible.

The symbol of the Sonoran desert is the:

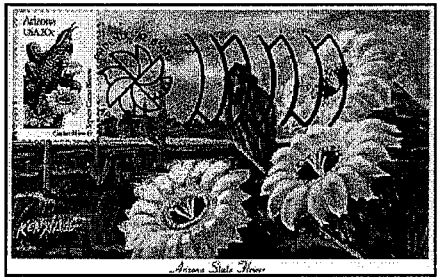
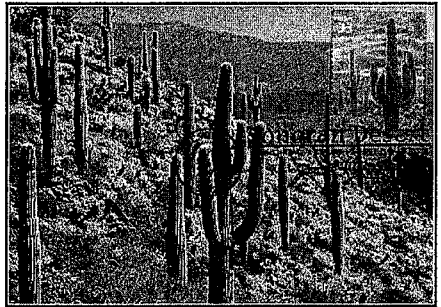
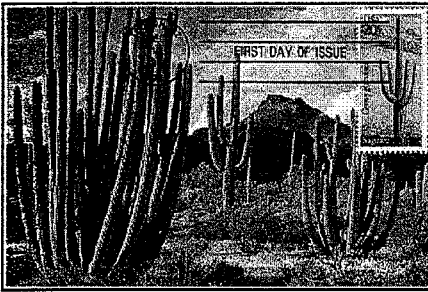
SAGUARO CACTUS (*Cereus giganteus*) or Giant Cactus *Figures 1 & 2* found only in southern Arizona and northern Mexican state of Sonora. This cactus grows to a height of 50ft and lives up to 200 years. The Saguaro rise up mountain slopes and are widely separated from each other, because their shallow spreading root systems must collect as much water as possible from the meagre supplies the soil yields. The Saguaro with its chubby arms resembles a man with his hands up. The desert Indians considered it as another type of a human being. The Saguaro has an internal skeleton covered with pulpy flesh. On the tips of its long arms can appear white waxy flowers. The lustrous white Saguaro blossoms *Figure 3* are Arizona's Official State Flower.

AGAVE (*Agave deserti*) *Figure 4*.

This cactus is best-known as the American Aloe or Century plant, so called because according to legend it flowers only once a century. Actually it flowers only once between the ages of ten and twenty-five years. Shortly before it flowers, a long stalk grows rapidly upward to a height as great as 40ft. The flowers are large and yellowish and cover short, horizontal branches that spring from the upper half of the stalk. These flowers are pollinated by hummingbirds, bats, bees, and moths. Some plants die after flowering, but their roots often develop into new plants. Its leaves

WILDLIFE OF SONORAN DESERT

Clockwise from Left: (Figure 1) SAGUARO CACTUS (*Cereus giganteus*) Issue: Dec. 11, 1981; For: Protection of Desert Plants Cancel: First Day, Tucson, Arizona. (Figure 2) SAGUARO CACTUS (*Cereus giganteus*) Issue: Apr. 6, 1999; For: Protection of Fauna and Flora of the Sonoran Desert; Cancel: First Day, Tucson, Arizona, special illustration and mention *SONORAN DESERT - COMMEMORATIVE STAMPS*. (Figure 3) BLOSSOMS OF SAGUARO CACTUS Issue: Apr. 14, 1982; For: State Birds and Flowers; Cancel: First Day, Phoenix, Arizona, special illustration. (Figure 4) AGAVE (*Agave deserti*) Issue: Dec. 11, 1981; For: Protection of Desert Plants Cancel: First Day, Tucson, Arizona.



are large, thick, and fleshy, and can store considerable quantities of water. They are spiked, particularly at the tips, are evergreen, and grow to a length of about 6ft in a cluster around the base of the plant. Many species of Agave are of economic importance, as they yield sisal or sisal hemp. Fibbers about 3 to 5ft long are obtained from its leaves.

BARREL CACTUS (*Ferocactus wislizeni*) Figure 5

All cacti are well known for their ability to store water through their stems. This is best shown in the Barrel cactus. The cylinder-shaped stems are swollen with water-storing tissue. Such is the capacity of the stems, that they can survive for years without replenishing their stores with water. The stems are often pleated to form 'ribs', running lengthwise down the stem. These ribs allow the stems to expand as they take up water, and to contract again as the reserves are depleted.

HEDGEHOG CACTUS (*Echinocereus engelmannii*) Figure 6

This type of cactus owes his name on its long spines. The spines sit on organs called areoles or spine cushions, developed from modified side shoots. The main function of the spines is of course protection, for in the sparse desert vegetation any plant is under threat of being eaten. But the spines also play an important role in regulating temperature by providing shade for the plant. It is a day-flowering cactus, with red odorless flowers, which are pollinated by birds, whose sense of smell is limited.

BEAVERTAIL CACTUS (*Opuntia basilaris*) Figure 7

PRICKLY PEAR CACTUS (*Opuntia polyacantha*) Figure 8

These are similar cactus species the first one has red flowers, while the second has yellow. They reproduce easily because rodents and rabbits eat its pear-like fruit Figure 8 and consequently scatter its seeds. In times of drought its pink, prickly fruit is the main food of some animals. The fruit is safe for humans; it can be peeled and eaten raw or cooked, or used to make jam, candy, liquor, or perfumes. The yellow waxy flowers of the pear cactus bloom in June and July.

DESERT COTTONTAIL RABBIT (*Sylvilagus auduboni*) Figure 8

The Desert Cottontail Rabbit is the best-known gnawing mammal in North America. On card it shown feeding on a Prickly Pear Cactus blossom. This rabbit is nocturnal, spending the day hiding in a 'snug' from under a bush, in grass, burrow, or hole under a log.

DESERT MULE DEER (*Odocoileus hemionus crooki*) Figure 9

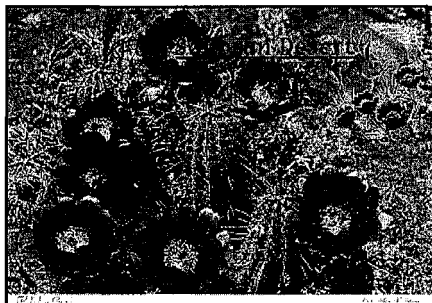
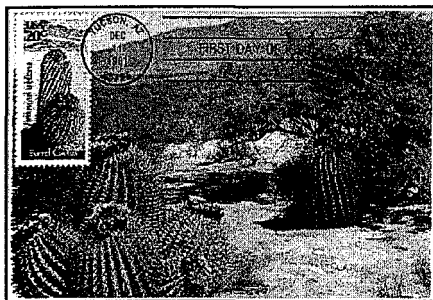
Mule Deer are so named for their large ears. They have short, black-tipped tails; that distinguish them from the white-tailed Deer. The male is larger than the female. Its antlers have two equal branches each forking into two tines. In the summer it is reddish-brown (see card), and in the winter is greyish (see stamp). Mule Deer move about in small groups of a doe, her fawns, and her year-old young. Bucks travel alone

GILA MONSTER (*Heloderma suspectum*) Figure 10

The Gila Monster or Beaded Lizard is the only poisonous lizard in the Southwest. It is dark with yellow molting, bead-like scales, blunt head, fat tail, and it measures 24 in. Its bite, although rarely fatal to humans, serves to overpower animal predators and prey. The poison is not injected like that of a snake but flows into the wound as the lizard chews on its victim. It feeds mostly on eggs and small vertebrates.

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Clockwise from Left: (Figure 5) BARREL CACTUS (*Ferocactus wislizeni*) Issue: Dec. 11, 1981; For: Protection of Desert Plants Cancel: First Day, Tucson, Arizona. (Figure 6) HEDGEHOG CACTUS (*Echinocereus engelmannii*) Issue: Apr. 6, 1999; For: Protection of Fauna and Flora of the Sonoran Desert; Cancel: First Day, Tucson, Arizona , special illustration and mention SONORAN DESERT - COMMEMORATIVE STAMPS. (Figure 7) BEAVERTAIL CACTUS (*Opuntia basilaris*) Issue: Dec. 11, 1981; For: Protection of Desert Plants Cancel: First Day, Tucson, Arizona. (Figure 8) DESERT COTTONTAIL (*Sylvilagus auduboni*) and PRICKLY PEAR CACTUS (*Opuntia polyacantha*) Issue: Apr. 6, 1999; For: Protection of Fauna and Flora of the Sonoran Desert; Cancel: First Day, Tucson, Arizona , special illustration and mention SONORAN DESERT - COMMEMORATIVE STAMPS.



WESTERN DIAMOND RATTLESNAKE (*Crotalus atrox*) Figure 11

This venomous snake owes one of its names on the bold diamond-shaped markings along its back, and the other name on the tail with segmented rattle made from modified scales (one segment added with each moult). The Western Diamond Rattlesnake is capable of delivering a fatal bite. It is found in arid and semi-arid areas. In the hot summer months is active late in the day and at night. It has a life-span of nearly 26 years.

CACTUS WREN (*Campylorhynchus brunneicapillus*) Figures 12 & 13

The Cactus Wren is the largest North American Wren 7-9" (18-22cm). Its crown is rust-colored brown, bordered by a conspicuous whitish eyebrow. The back is brown, marked by irregular broken whitish streaks and blackish spots. The wings are heavily spotted with rows of blackish and cinnamon-buff or white. The tail is long and barred with blackish and light brown. The underparts are whitish or light buff spotted with black, which is more concentrated on the upper breast. The Cactus Wren is found in the deserts and arid hillsides of the Southwest, notably where there is abundant cactus. It is also common in riparian brush. It forages for food very methodically, searching under leaves and ground litter. It nests in cactus plants. The thornier cactus serve as protection. It builds several nests using one as home and the others as decoys. The Cactus Wren flies slowly on fast-beating wings, covering short distances. Its rough song - similar to a car refusing to start - is a characteristic sound of the desert. It often sings with its head up and tail pointed straight down from the top of a cactus (see stamp on Figure 12). The Cactus Wren is the Official State Bird of Arizona.

GILA WOODPECKER (*Melanerpes uropygialis*) Figure 14

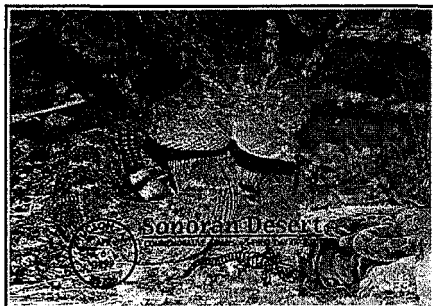
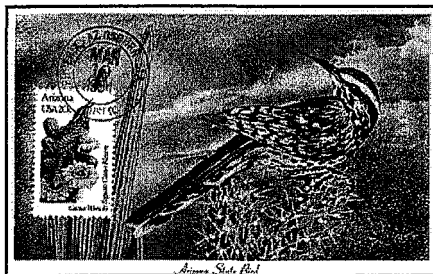
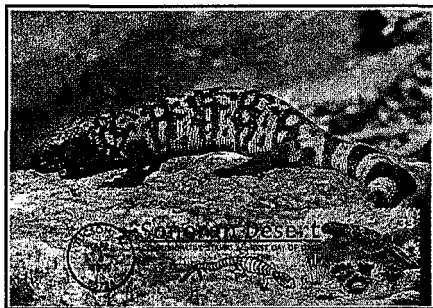
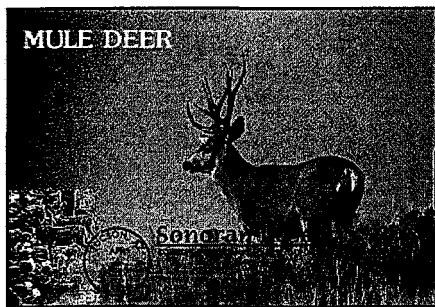
The Gila Woodpecker is a medium size bird 8-8 1/2 " (20.5-21.5cm). It is found in cactus deserts and streamside woodlands. The male is larger, has a red patch on the crown that is lacking in the female. Both have pale forehead, head and most underparts are gray-tan. The upperparts are barred with black and buff-white, including most of the wings and the center of the tail. The Gila Woodpecker feeds in cacti, trees, and bushes, as well as on the ground. It eats all manner of insects, worms, and fruit. It excavates nesting and roosting holes in cacti and in various trees.

GAMBELL'S QUAIL (*Callipepla gambelii*) Figures 15 & 16

Gambell's Quail measures 10-11 1/2 " (25-29cm). It is found in desert scrub, cacti, mesquite, and riparian areas. The male is grayish on the upperparts, with a bright rust-brown crown and a conspicuous black curved head plume. The forehead and throat are black, outlined by white. The sides and upper breast are gray, with a buff belly. The buff belly has a bold black circle in the male, that instantly distinguishes Gambell's. The female is similar but paler. Gambell's Quail are often seen in large coveys that include family groups in the summer months. Their presence is revealed by the sound of many, soft clucking notes of a flock concealed in the brush. When flushed, then often fly in noisy bursts of whirring wings, uttering explosive alarm calls.

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