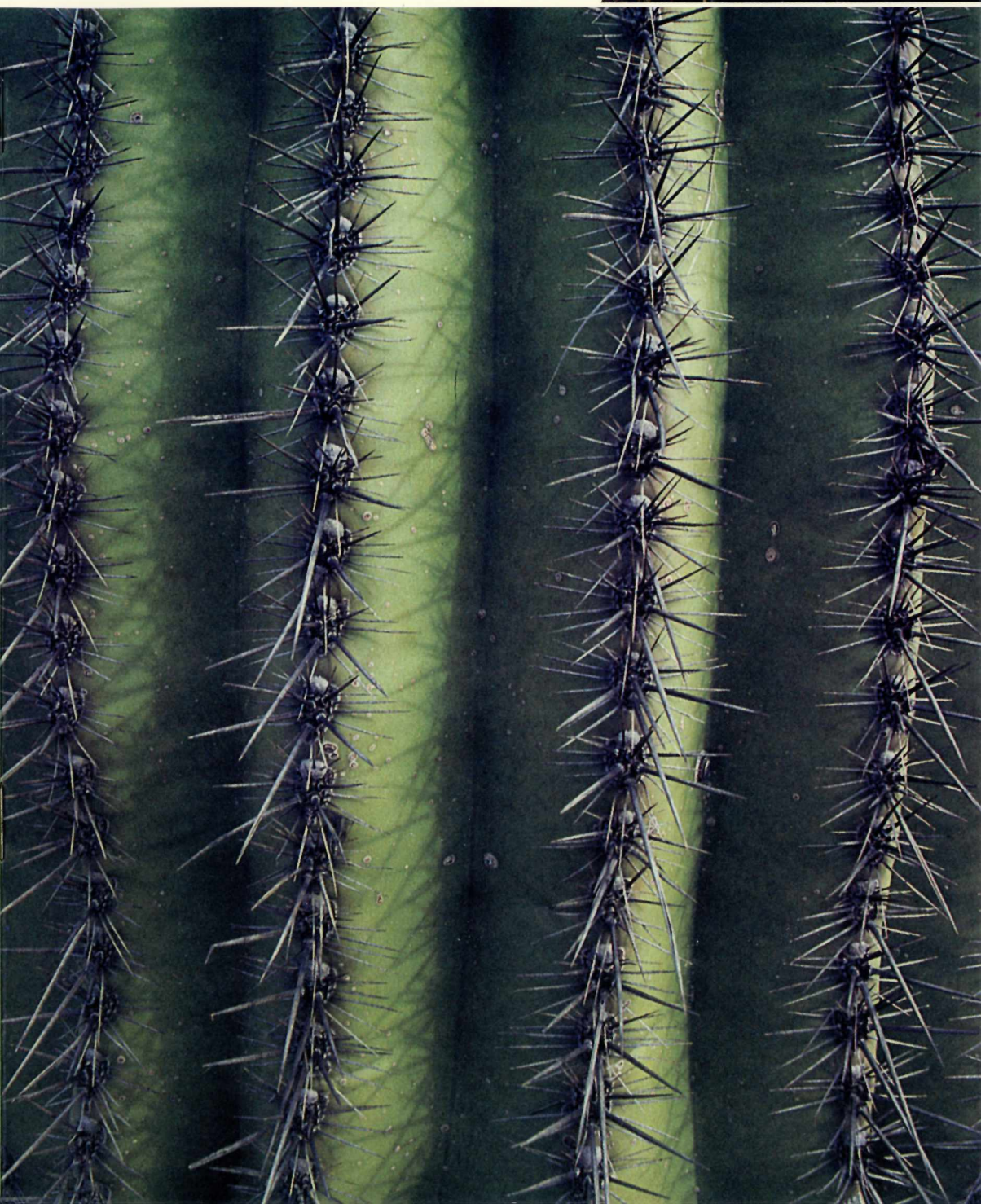


S A G U A R O

Reflections on the Cactus Forest Drive



Saguaro National Monument is comprised of two sections — the Rincon Mountain section commonly referred to as “Saguaro East” and the Tucson Mountain section referred to as “Saguaro West.”

The Cactus Forest drive is in Saguaro East.

Saguaro West is located approximately 25 miles west, adjacent to the Arizona Sonora Desert Museum.

On this 8 mile loop drive you will learn about the Saguaro cactus and its place in the Sonoran desert ecosystem. You should be alert for slow moving vehicles, and bicyclists, on this one-way drive. Please use the provided pull-outs if other drivers wish to pass.

A Special World

Nearly every striking feature of this special world [the Sonoran desert], whether it be the shape of the mountains or the habits of its plant and animal inhabitants, goes back ultimately to the grand fact of dryness — the dryness of the ground, of the air, of the whole sum-total. And the most inclusive cause of the dryness is simply that out here it doesn't rain very much.

Joseph Wood Krutch, *The Voice of the Desert*

Nature does not bend the elements to favor the plants and animals; She makes the plants and animals do the bending . . . And so it happens that those things that can live in the desert become stamped after a time with a peculiar desert character.

John Van Dyke, *The Desert*

As a whole, the Sonoran Desert represents the “cream” of deserts. A variety of reasons explain the diversity of life within this so-called deserted land.

Peggy Larson, *The Deserts of the Southwest*



Desert As Home

As far as living things go, all this adds up to what even an ecologist may so far forget himself as to call an “unfavorable environment.” But like all such pronouncements this one doesn’t mean much unless we ask “unfavorable for what and for whom?” For many plants, for many animals, and for some men it is very favorable indeed.

Joseph Wood Krutch, *The Voice of the Desert*

Home is a desert [for the Papago Indian]. Not a sandy, treeless waste. Indeed, a visitor in early spring, provided there have been winter rains, or in August, if summer rainfall has been normal, might wonder why it is called a “desert.” Barren, forsaken, and abandoned are not notions appropriate to a region whose floor is carpeted with the green of millions of annual plants.

Bernard L. Fontana, *Of Earth and Little Rain: The Papago Indians*

Most [cacti] have the succulent stems which store water, when they can get to it, to be saved for a rainy day — or month, or even year. Leaves are vestigial or completely absent because too much water would evaporate from them, and the stems are green with chlorophyll so they can perform the function of leaves. These stems are also often coated with wax to economize water still further and usually they are provided with formidable spines — partly to discourage animals which would be only too glad to use the succulence for their own purposes, partly because spines limit the free circulation of the hot, desiccating atmosphere, perhaps also because they provide broken shade to the surface of the plant.

All these devices have been independently invented by other plant families which also moved into the desert. Succulence, waxy coatings, and reduced or absent leaves are common.

Joseph Wood Krutch, *The Voice of the Desert*

When I walk in the desert
the birds sing very beautifully
When I walk in the desert
the trees wave their branches in the breeze
When I walk in the desert
the tall saguaro wave their arms way up high
When I walk in the desert
the animals stop and look at me
as if they were saying
“Welcome to our home.”

Jeanette Chico, *When it Rains*





Rain

There are two rainy seasons: summer and winter. Summer storms, called “chubascos” in regional Spanish, reach their greatest intensity in July and August . . . they come in the form of scattered black cumulus clouds filled with the power of lightning and the steady rumble and roar of thunder . . . They move in quickly with their electrifying and drowning force, drench the earth, and pass on to let the summer sun do its drying work before the next storm arrives . . .

The winter rains . . . fall in December and January . . . These “equipatas,” as they are known to rural Mexicans, lack the devastating force of summer rains. Lightning from such storms is rare; the downfall is slow and steady.

Bernard Fontana, *Of Earth and Little Rain*

Once I asked a Papago youngster what the desert smelled like to him. He answered with little hesitation:

“The desert smells like rain.”

His reply is a contradiction in the minds of most people. How could the desert smell like rain, when deserts are, by definition, places that lack substantial rainfall?

Gary Paul Nabhan, *The Desert Smells Like Rain*

Rincon Mountains



The wonderful diversity of plant and animal life in Saguaro National Monument depends on a diversity of habitats.

Most visitors to the monument see only a small part of it — the lowland cactus forest. But above the desert in the high back country of the Rincon Mountains is another world.

Napier Shelton, *Saguaro*

The higher mountains of the desert region exhibit strong gradients of change in climate and vegetation. Both of these gradients are much more pronounced than those of mountains of equal elevation in more humid regions.

F. Shreve, *Vegetation of a Desert Mountain Range as Conditioned by Climatic Factors*

The giant saguaro grows in the desert scrub biotic community, which is found up to about 4,000 feet. Above that is the desert grassland transition community, then the oak and oak-pine woodlands, the ponderosa pine forest, and, on the north slopes below Mica Mountain and Rincon Peak, a Douglas-fir/white-fir forest.

National Park Service, Saguaro National Monument

Desert Ecology Trail

This 1/4 mile trail will introduce you to the diversity of plant life in the Sonoran Desert. The trail is accessible to the handicapped.

The distinctive characteristics of desert plants . . . have evolved through millions of years, in a trial and error process in which only the better-fitted species have survived . . . It is fascinating to study the hundreds of forms that have succeeded and try to determine what structure they have perfected and what methods they have originated that enable them to maintain themselves . . .

Napier Shelton, *Saguaro*



Adaptation

In simple terms, there are three ways in which animals can arrange their lives in the hot desert: they can evade the heat, they can passively put up with it, or they can actively combat it by evaporation of water.

The simplest way to evade the heat is to go underground . . . The burrowing animals, the evaders, can come out in the cool night and lead a normal but nocturnal life.

There is no indication . . . that any desert vertebrate has a temperature tolerance much higher than that of its relatives in more moderate climates . . . if any animals are able to put up with the heat, insects are the most likely prospects.

Combating the heat by evaporation is efficient . . . but expensive in an environment where little or no water is available . . . Where no open water is available, animals can still use the water contained in plants or the bodies of their prey.

Knut Schmidt-Nielsen, *Desert Animals*

Saguaros are not seen as a “separate” lifeform at all, not something of an “other” outside world. Papago [Indians] classify saguaros as part of humankind; a saguaro cactus is “that which is human and habitually stands on earth.”

I was startled when I came upon some Papago who clearly take heed of the “human” vulnerability of saguaros. I heard a young city boy ask an elderly Papago woman if, lacking a harvesting pole, one could ever collect the fruit off the tall cactus by throwing rocks at the tops to knock the fruit down.

“NO!” Marquita replied with a strain of terror in her voice. “The saguaros — they are Indians too. You don’t EVER throw ANYTHING at them. If you hit them in the head with rocks you could kill them . . .”

Gary Paul Nabhan, *The Desert Smells Like Rain*



Change

Natural landscapes may appear unchanging but this is an illusion. Within the apparent constancy, daily and seasonal cycles, fluctuations in numbers, and long-term change are the rule . . . the saguaro must contend with uprooting wind and human vandalism, as well as . . . drought, frost, erosion and animals.

Napier Shelton, *Saguaro*

[This] saguaro forest is in a growth period between the visible mature saguaro stand and a hard to identify young saguaro stand. The decline of the "old" forest is a result of the effects of recurring winter freezes compounded by man-caused activities.

Statement for Management Saguaro National Monument

A saguaro cactus stands by my house
It is long and has thorns.
It is our plant and also our friend.
Did you hear that the saguaro cactus is also 'O'odham?
I heard, and I truly respect it.

Angelina Saraficio, *When It Rains*



A Feel for the Desert

When I first came to the desert I was arrested by the space first, especially what hung in a layer just above the dust of the desert floor. The longer I regarded it the clearer it became that its proportion had limits, that it had an identity, like the air around a stone. I suspected that everything I'd come here to find out was hidden inside that sheet of space.

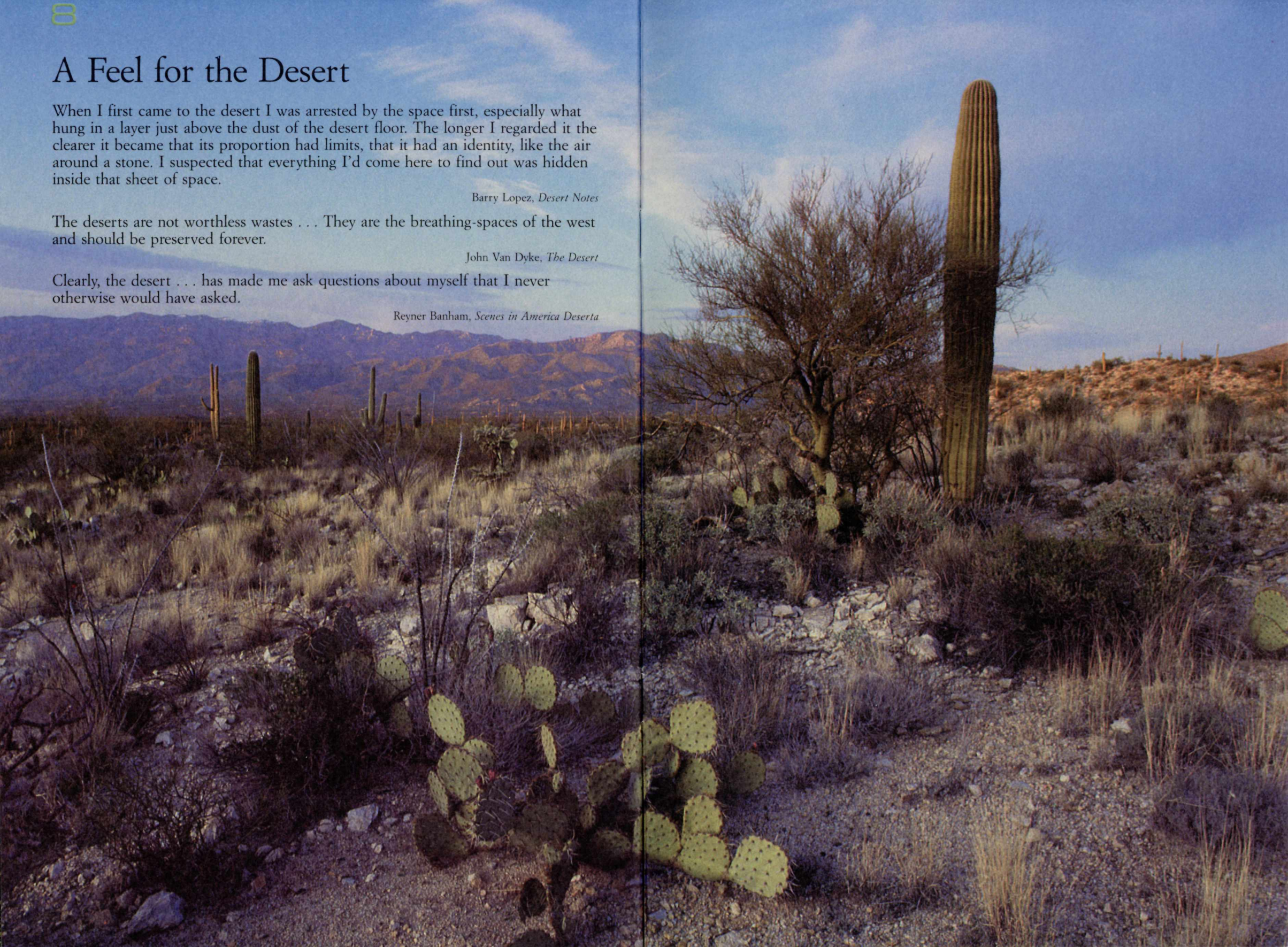
Barry Lopez, *Desert Notes*

The deserts are not worthless wastes . . . They are the breathing-spaces of the west and should be preserved forever.

John Van Dyke, *The Desert*

Clearly, the desert . . . has made me ask questions about myself that I never otherwise would have asked.

Reyner Banham, *Scenes in America Deserta*



This guide to the Cactus Forest Drive, Saguaro National Monument, is a brief anthology — all of these writers have given voice to a love of desert.

We hope that their words will bring you to a better understanding and appreciation of the Sonoran Desert.

Many of these books are available in the park Visitor Center or can be obtained at your local library.

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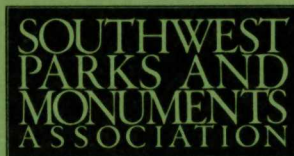
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