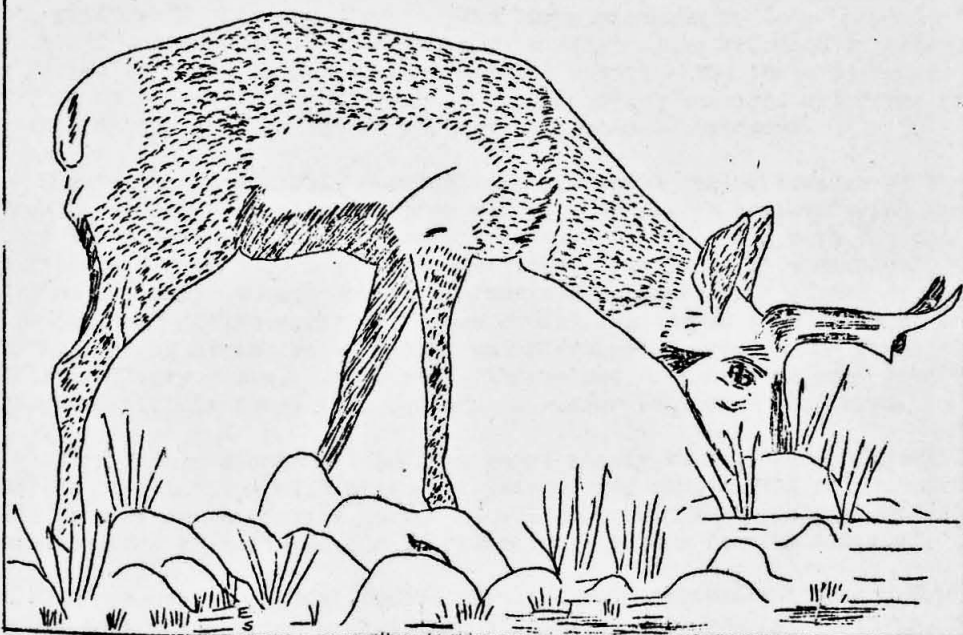


Nature Notes  
of  
Grand Canyon



Vol. 3. - No. 1.

U. S. DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
GRAND CANYON NATIONAL PARK

VOL. 3  
GRAND CANYON NATURE NOTES

NO. 1.  
JUNE 30, 1928.

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This bulletin is issued monthly for the purpose of giving information to those interested in the natural history and scientific features of the Grand Canyon National Park. Additional copies of these bulletins may be obtained free of charge by those who can make use of them, by addressing the Superintendent, Grand Canyon National Park, Grand Canyon, Arizona.  
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M. R. Tillotson, Superintendent. By - G. E. Sturdevant, Park Naturalist.  
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ANTELOPE FOR BURROS.

When the Grand Canyon was created a national park in 1919, a single species of large mammal - the wild burro - was found occupying the broad Tonto platform within the Canyon. The burro appeared to be at home in the region and increased at a tremendous rate after being released by prospectors who failed to find the anticipated mineral wealth. The innate desire of the burro to leave behind a multitude of progeny which devoured all forms of vegetation that grew in the area required a remedial measure.

Plants that ordinarily survive in a semi-arid region because of their spines or strong pungent odors were simply food for these long-eared beasts. All of the numerous species of cactus, native to the area, were dug out and the roots and more succulent parts devoured. The "mesquite" (*Agave utahensis*) suffered a similar fate. Even the grasses disappeared and showed no promise of returning. "False sage" or "burro brush" (*Coleogyne ramosissima*), a gray perennial shrub of the rose family, which everywhere covers the Tonto Plateau, was browsed very close. The burros, themselves, appeared in poor condition and park officials found it necessary to remove them from this area.

After this was accomplished the range slowly revived and conservationists studied the situation with a view of introducing some mammal of more esthetic value to replace the former hordes of wild burros. The antelope, which was feared by some to be in danger of extermination, was finally selected.

On September 30, 1924, twelve antelope kids arrived from Reno, Nevada. One was lost while being packed down the trail. The remaining eleven, however, were turned loose in the vicinity of Hermit Camp and for two years were fed daily rations of rolled barley and hay.

In June 1926, three young does put in their appearance. As there was deficient natural vegetation at Hermit Camp, the antelope gradually drifted east on the plateau to Indian Garden. It appeared for a time that they would show an increase at this locality. Food and water were both abundant. Five young were noticed in 1927 but freshets, caused by torrential showers that visit this locality during the summer, and predatory animals wiped out the increase. The fore part of the month marked another increase as six fawns are now present at Indian Garden.

Losses, however, have nearly ~~off-set~~ offset all increases. After nearly four years of experimentation the antelope now ~~total~~ total thirteen or one more than the original number introduced. These include four of the original animals, two does and two bucks, three does of the 1926 crop, and six fawns born this month. Whether a permanent increase will eventually result, will probably require several years to ascertain.

#### CASSIN VIREO OBSERVED.

A pair of Cassin Vireos (*Vireo solitarius cassinii*) were reported on June 18th by Mr. Edwin D. McKee. They were heard calling and then seen low in the branches of a group of pinons near the Park Service Camp. This pretty little bird has been reported from the park but once before.

#### KAIBAB FAWN CAPTURED.

To Congressman Samuel S. Arentz of Nevada goes the credit of capturing the first Kaibab fawn of the 1928 crop.

One June 24th Superintendent M. R. Tillotson visited V. <sup>T.</sup> Park and Robbers Roost on the north rim in company with Congressmen Samuel S. Arentz of Nevada and Stewart H. Appleby of New Jersey. A new-born fawn and its mother were noticed in the vicinity of Robbers Roost. Congressman Arentz gave chase and soon had the struggling fawn in his arms. After holding it for a few minutes, during which time the mother raced around the group in an excited manner, the fawn was released.

#### BIRD LIFE ON THE TONTO PLATFORM.

By - Edwin D. McKee

The romance of a ride along the Tonto Trail and a camp at one of its springs is one which is equally as thrilling and as interesting as its name would seem to imply. The days here are always considerably warmer than on the rim and with the prevailing desert atmosphere, yet from the time that the sun sinks behind the lofty Canyon walls in the evening until it again appears over the Painted Desert next day, the gentle breeze <sup>changes</sup> transform it to a delightfully cool and pleasant place. Thus the Tonto holds a charm and a fascination all its own.

Just as the mammals and the vegetation here are indigenous and peculiar to their own particular, isolated shelf in the Grand Canyon, so the species of birds represent a group quite at variance with those of all other parts of the region. Scientifically this is known as the Lower Sonoran Zone. A recent visit to Indian Garden, Pipe Creek, and points eastward along its extent brought to notice quite a number of these birds - all interesting and some never before reported from the region. Outstanding among these is the Long-tailed Chat - a bird much heard but seldom seen. He is full of antics and tricks, and from his many varied callings would appear to be quite abundant in the heavily thicketed region bordering on Garden Creek.

First here, then there, among the willows and the cottonwoods - his presence is ever felt, but unlike his equally abundant but more sociable companion, the Spurred Towhee, his contrariness somehow always keeps a bush or thicket between himself and the curious onlooker.

Here and there one may also catch a glimpse of <sup>a</sup> Mourning Dove, a Pale Goldfinch, or even perhaps a Lazuli Bunting - the most brilliant and gaudy of western birds. Then passing on out onto the stretches of barren and sage-covered flats - away from the cool moisture and luxuriant growth of this veritable oasis, one sees only infrequently any sign of bird life. Casually a Rock Wren or even a Canyon Wren - both very remarkable singers - puts in its appearance among the bordering ledges of rock, or, more often, a small flock of the appropriately named Desert Sparrows rise and scatter before the approach of the horse. None, however, are found in great abundance. Great Vultures and lightning-like Swifts of the white-throated variety may be seen at all times but then these are birds ever on the wing, and appear to be more a part of the air than to have any relation to the immediate region.

Evening camp at Pipe Creek and another haven for Sonoran bird life is found. Here are to be seen the pretty Arizona Crested Flycatchers, the ever-interesting Peewees, and the Broad-tailed Hummingbirds in great abundance. Here also was recently recorded a single Western Robin - strayed down no doubt from the higher Transition Zone during the cool of the night. Again a pair of these small but very devastating birds of prey - the Blue Darters, or Sharp-shinned Hawks, were seen - ever on the alert and over in the search for some unsuspecting lizard or ground squirrel. In fact Birds of all kinds and descriptions help make up the population of this unique and interesting section of the Grand Canyon and through them much is added to its fascination for nature lover, tourist, and guide alike.

#### COUGARS NOT EXTINCT ON KAIBAB.

By - Chas. W. Merriam, Ranger Naturalist.

Cougars or mountain lions formerly existed on the Kaibab Plateau in great numbers, supported here by the herd of mule deer upon which they preyed. The inroads of these predatory animals controlled the size of the herd and its numbers were kept at a minimum. For the past twenty three years this cat has been subjected to a campaign of professional hunting which has been responsible for a great reduction in the number existent here. Given this encouragement the deer herd has increased considerably so that it is a common sight to count as many as five hundred deer in a few miles along the road.

A few deer, however, must yet become victims annually of these carnivores as they have not been exterminated. During the latter part of June, tracks of a small individual, perhaps a cub, were observed on the road about one-half mile north of the Grand Canyon Lodge. They were clearly defined in the dust and followed the edge of the road for some one hundred feet. The tracks were about the size of the palm of a medium size human hand.

The footprint of the cougar is very much similar to that of the common house cat except for its much greater size. The length of the average print left by the hind foot is about four and one-half inches and the width about four inches. The padded foot leaves four oval-shaped impressions at the front arranged roughly in a semi-circle. These are representative of the digits. Behind these is the impression of a large pad of rounded triangular shape with the wide base to the rear. As in all cats no claw impressions are left when walking unless the animal slips. The claws are ordinarily encased in a sheath when walking. As in the house cat the hind foot is often set exactly in the front track which aids him in advancing with greater silence of tread.

#### FOSSILS COLLECTED.

Approximately six hundred pounds of fossil material was recently collected at the Grand Canyon and shipped to the U. S. Geological Survey by Dr. David White, Senior Geologist.

Dr. White spent a little over one month making the collection and studying their occurrences in the Canyon walls. Most of the fossils are the remains of ancient plants. Perhaps most interesting of the fossils is a small collection of very ancient algal deposits. These are some of the oldest life remains ever found. Fossils indicate that a species of blue-green algae, popularly called "frog spit", was thriving when some of the oldest formations were being deposited.

#### MOUNTAIN SHEEP COMES UP BRIGHT ANGEL TRAIL.

Mr. Emory Kolb of Kolb Bros. Studio recently reported seeing a mountain sheep come out of the Canyon on Bright Angel trail and then return back into the Canyon. These animals are occasionally seen by parties on all of the trails which probably indicates their distribution throughout the Grand Canyon. Two or three times each year some individual sheep is reported exploring the Canyon rim.