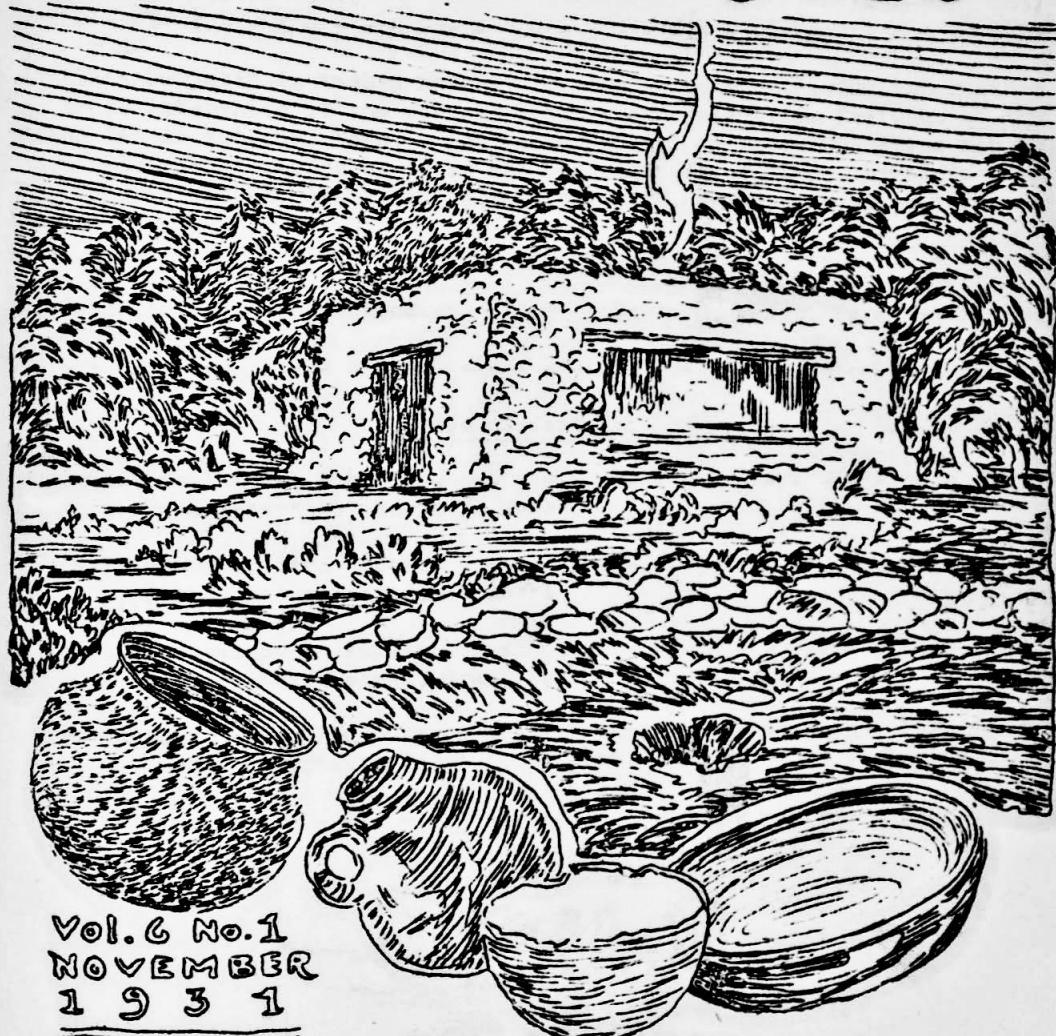


GRAND CANYON Nature Notes



VOL. 6 NO. 1
NOVEMBER
1931

AN ARCHAEOLOGICAL EXHIBIT

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
GRAND CANYON NATIONAL PARK, GRAND CANYON,
ARIZONA

Vol. 6
Grand Canyon Nature Notes

No. 1
November, 1931

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.

M. R. Tillotson, Superintendent

Edwin D. McKee, Park Naturalist

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AN ARCHAEOLOGICAL EXHIBIT

By Park Naturalist Edwin D. McKee.

THE first archaeological work done in the Grand Canyon National Park was in the summer of 1930. At that time the staff of the Gila Pueblo of Globe, Arizona, under the leadership of Mr. Harold S. Gladwin made a general survey of the prehistoric ruins on both rims and in the interior of the Grand Canyon, and excavated the so-called Tusayan Ruin on the South Rim (See Grand Canyon Nature Notes Vol. 4, No. 8). Altogether several hundred sites of pueblo ruins were discovered, and a considerable amount of interesting information was obtained. Also from the excavation numerous artifacts of value were collected. By virtue of the knowledge obtained from this splendid work of the Gila Pueblo staff, and because of the generosity of Mrs. Winifred MacCurdy, one of its members, in donating a museum building, we will soon be able to present to Grand Canyon visitors something of the story of early man in this region.

The construction of the "Wayside Museum of Archaeology" building close to the excavation of the Tusayan Ruin has just been completed. It now remains for the exhibits to be installed and to be so arranged as to tell in definite order the various phases of an interesting story.

The location of the ruin and museum is about two miles south of Lipan Point in the southeastern corner of the National Park. Since it is on a branch of the East Rim Drive, practically all of its visitors will have previously seen the geological exhibits at Yavapai Station. They will have been introduced to the great series of chapters contained in the Earth's history. For this reason it is planned to have as a first exhibit at the Wayside Museum of Archaeology a chart showing man's place in the history of the world.

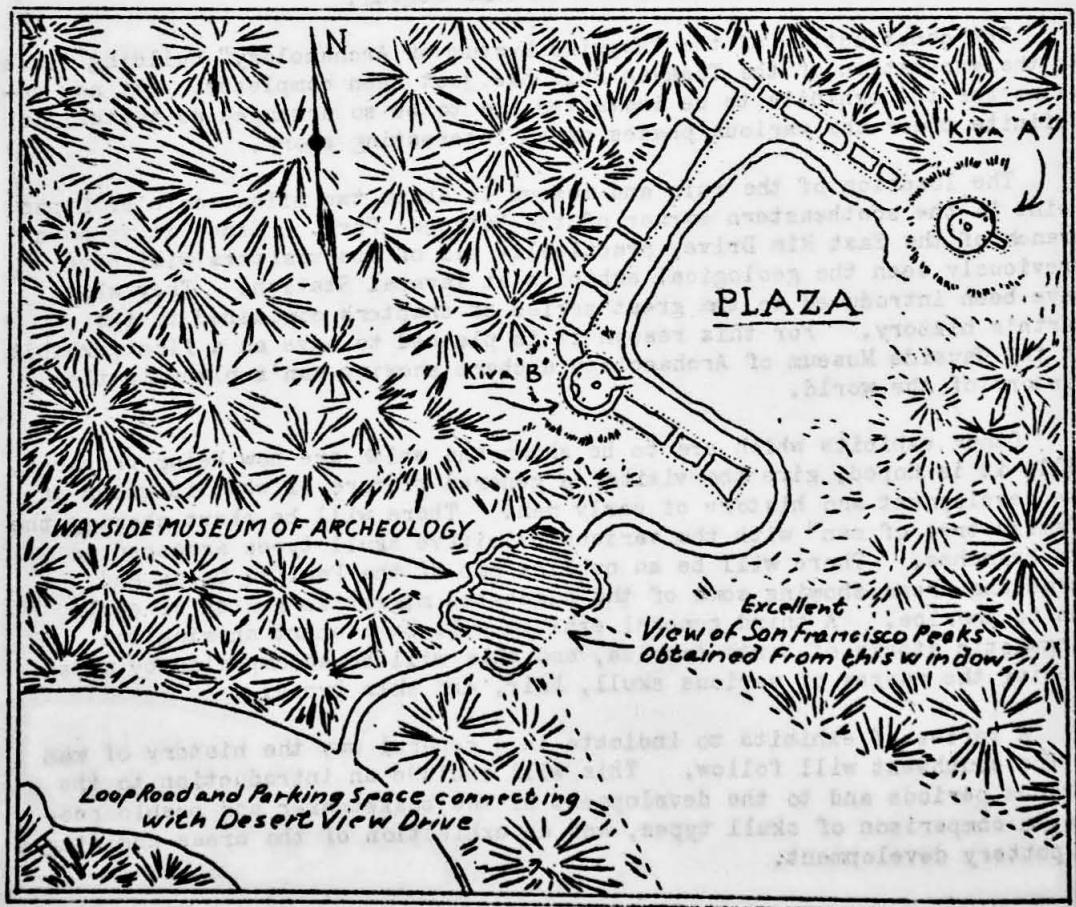
Other exhibits which are to be shown and which are now being prepared, will, it is hoped, give the visitor a general picture of what is known of the development and history of early man. There will be chart showing the "family tree of man" with the various primitive skull types arranged on its branches. There will be an outline map of the Pacific Ocean and bordering areas showing some of the suggested migration routes of early man to America. A third general exhibit will be a chart showing the linguistic stocks of North America, and this will be accompanied by maps showing the ranges of various skull, hair, and skin types.

A series of exhibits to indicate in a general way the history of man in the southwest will follow. This will include an introduction to the various periods and to the development of the basketmaker and pueblo people, a comparison of skull types, and an exhibition of the areas and stages of pottery development.

Dating of pueblo ruins by the use of tree rings will be demonstrated and some of the methods of modern scientific archaeology will be shown.

The final group of exhibits at the Wayside Museum of Archaeology will deal with the purely local material. This will include a model of the ruins outside, and several exhibits of pottery and various other artifacts found in and around Grand Canyon. There will also be exhibits of the stages of paint and pottery making and of shell work.

While this outline of exhibits may appear as portentous and ambitious for a small one-room museum, we believe that they can be condensed into a short but comprehensible story through whose medium the Tusayan Ruin will mean to the visitor more than just the remains of ancient masonry. It is hoped that something of the unity of nature and the development of life may be grasped through this museum, especially when taken in conjunction with Yavapai station and other features of the Grand Canyon.



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EARLY NOVEMBER BIRD RECORDS

By Clyde C. Searl, Ranger Naturalist

THREE bird baths at Yavapai Point have recently become very popular to birds as evidenced by the visits of countless numbers, both migrants and permanent residents. During the first few days of November, the weather was fairly warm so the birds continuously increased in numbers and were apparently in no hurry to leave. One interested visitor remarked that she thought the birds waited in the trees until they became thirsty just so they could drink again. Cold weather and rain began at the Canyon on November 8, and with its arrival most of the birds departed.

For four days, from November 4 to November 7, careful records were kept of the birds seen at the point, and some interesting records were made. In all, sixteen kinds of birds were recorded, the greatest number being seen on November 6 when fourteen species were noted. Many of the birds were migrants, but others were winter residents on the south rim of the Canyon.

Very few Western Robins visited Yavapai Point. Three or four came to one bath on November 6, but they were apparently not pleased with the great numbers of other birds and failed to make their appearance again. Inasmuch as Robins remain at Grand Canyon throughout the winter it is hoped that they will soon become more common visitors to Yavapai.

The Rocky Mountain Evening Grosbeak was one of our most common visitors. It has been at Grand Canyon for almost a month, attracting much attention at the various bird baths about the village. Fifty or sixty individuals remained around Yavapai all day long and as many as twenty were seen about a bath at one time, seeming, by means of their huge bills, to get more water than their share. About half of the Grosbeaks seen were in immature plumage.

Pygmy Nuthatches were seen on all four days, and it is hoped that they also will be common visitors all winter long. One of the baths at Yavapai, one that seems to be the most popular for a great number of birds, is in the open and apparently is disliked by the tiny Nuthatches. Not even one was seen at the open bath, the two baths close to the trees being preferred. The Rocky Mountain Nuthatch, probably as common as the Pygmy, but not as friendly, had no preference of bathing place. It was seen on all four days.

Cassin Purple Finches were common all four days. They were nearly as numerous as the Grosbeaks, and were apparently on friendly terms with all of the other birds. Infact, five or six kinds of birds were often seen at a bath at one time, and their various colors provided a beautiful picture. Of the finches, either the females far outnumbered the males, or else many of the males had not yet reached the age of colored crowns. The latter was probably the case.



Mexican Crossbill

The little Mountain Chickadee was seen nearly all day long, and even when not in view, its note could be heard in the woods. Chickadees have taken advantage of the baths at Yavapai much longer than have any of the other birds.

A pair of Rocky Mountain Hairv Woodpeckers seemed to make daily calls at Yavapai. They were seen several times before any record was started, though not always together. This fact added a little special interest in that it was fun trying to catch the birds in the proper light to show the distinguishing marks of sex. The pair was not seen on November 7.

The Chestnut-backed Bluebird was the most common of all birds. It was seen on all four days in characteristic large flocks. All day long these birds could be seen in the trees and great numbers were constantly at the baths. Close observation revealed not a single Mountain Bluebird.

Only one Gray Titmouse was seen at Yavapai, and the writer can not remember ever having seen another at the Point. The fact is rather strange, inasmuch as the Titmouse is a fairly common bird throughout the year on both rims of the Canyon. On November 6, one of the little crested fellows came to drink, was disturbed, and did not return to the bath, although careful watch was kept throughout the day.

A single Long-Crested Jay made daily visits to the bath, announcing its coming in its characteristic way, and frightening all other birds away. Fortunately, the fellow was a gentleman, and just as soon as he had drunk his fill, he would go on his way, leaving the territory to the smaller birds. A Woodhouse Jay came for water on November 4 and 5.

One Townsend Solitaire was seen on November 6. It was some time before I could definitely determine that the bird was a Solitaire. It would come to drink with flocks of Bluebirds and after taking a few hurried sips would fly to a tree and await the arrival of another flock of birds at the bath before it would venture to drink again. The species has not been recorded at Grand Canyon many times.

Cedar Waxwings made a few visits, although not more than a dozen were seen altogether. They were not observed at all on November 7. The birds appeared to be as flighty as the Solitaire and it was only good fortune that allowed a few quick glances. At first only immature birds were seen so the identity was a puzzle until later the definitely marked adults made their appearance.

Mexican Crossbills were very common. Eighteen were seen at one time on the top of a tree. These birds were often in the company of Grosbeaks, Finches and Bluebirds. The males with their varying dull red color did not stand out very sharply in the crowd. Crossbills were seldom seen alone at a bath.

The Shufeldt Junco was common, and apparently is the only Junco to date to find the comforts of Yavapai. Thirty or more could be seen at a time hopping around, and feeding in the area around the baths.

One pair of Gambel Sparrows made their appearance on November 7, but evidently it was only a passing visit. The male heralded their coming with his cheery song, and after allowing a careful check, flitted away into the woods singing as he flew.

Ranger Naturalist Ralph Redburn was in attendance at Yavapai on November 8, the first stormy day of the month, and he reported that not a single bird was seen all day long. On November 9, a solitary female Mexican Crossbill spent several hours in the top of the trees around Yavapai, constantly calling out in her toneless note. Late in the afternoon the note of a Mountain Chickadee was heard, but the bird was not seen.



The absence of the birds after the arrival of the storm may be accounted for in two ways. The storm undoubtedly sent many of the migratory birds on their way, while most of the resident birds probably found a plentiful supply of water in the rain pools making it unnecessary to visit the baths at Yavapai.



PLANT SUCCESSION IN KAIBAB LIMESTONE

By Pauline Mead Patraw.

ALONG the rims of Grand Canyon from one end to the other are cliffs, crags and fallen fragments of rock, the Kaibab Limestone. Most of its grey and buff masses are apparently bare of vegetation but this appearance is usually deceiving. Very slowly, but surely and consistently, Nature is covering these rocks with plants that advance upon them in an orderly succession. First, very hardy, small primitive ones, the pioneers, coat the bare surfaces. They collect moisture and a little soil and so make way for another group of plants of higher order, plants that can withstand a severe habitat but that can not grow on the bare rock. These further alter conditions on the rock, providing more soil, a means for moisture retention and also shade under which less hardy, often larger plants can start. Finally the typical forest type of the plateau is established, and, if undisturbed, maintains itself. In case a fire destroys this rock covering, or the rock itself is broken so that a bare surface is exposed, the process of plant succession which requires perhaps thousands of years to reach completion, is repeated. Such cycles are going on in Nature continually, one following another in a never ending series.

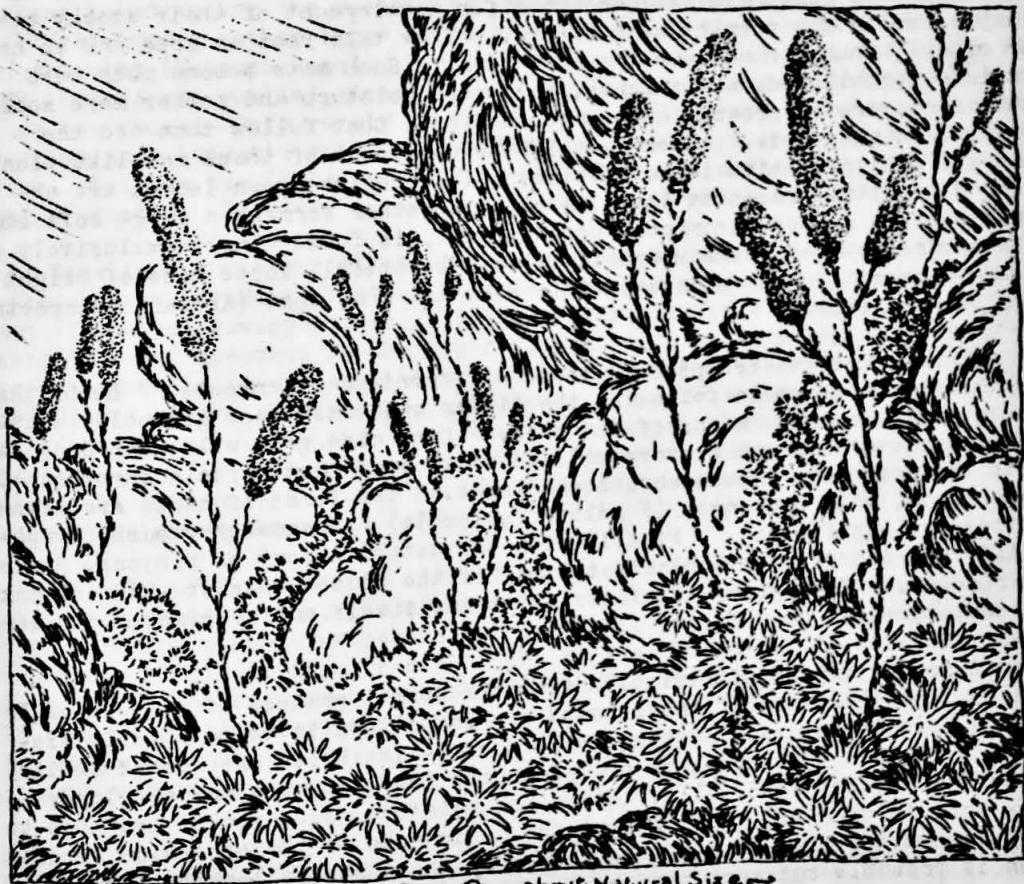
In the normal succession of plants on rocks, lichens,-those peculiar, primitive plants (mutually beneficial combinations of algae and fungi)-are the pioneers. They take a foothold on limestone with comparative ease, secreting carbon dioxide which with water forms a weak acid. This acid eats readily into limestone and makes small holes into which the root-like appendages of the lichen penetrate, fixing securely to the rock surface.

On the Kaibab limestone, as on other types of rocks, grow many species of the hardy crustose lichens, scale-like plants of black, orange, grey, white and yellow, usually so small that they appear like a part of the rock itself. It is common to find as many as eight or nine different kinds on a small lime-

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stone rock. Leaf-like lichens (foliose) or mosses are able to grow on the moisture and debris collected by the crustose lichens. Foliose lichens may either precede or follow the mosses. The commonest species of foliose lichens occurring in the Upper Sonoran Zone on the South Rim of Grand Canyon are (*Parmelia conspersa* V.?), a large crumpled, pale green type, and (*Gyrophora hirsuta*), a conspicuous large dark grey form. The large branching fruticose lichens are seldom if ever found on the Kaibab limestone. The commonest mosses found there are *Grammia montana*, dark grey-green and hardy, and a soft, more delicate thick green type named *Polytrichum juniperinum*.

In the long process of succession the lichen stage is by far the longest, probably lasting many hundreds of years. On north facing slopes, in holes and in cracks of rocks, however, the stages advance far more rapidly than otherwise. In many cases the south face of a rock may be entirely bare, the top spotted with brightly colored crustose lichens, while the depressions and north face are already dark with large lichens and mosses.



Rock Rose Growth - about Natural Size

Seed plants finally advance on top of the lichen and moss beds. These represent herbaceous forms which usually precede the shrubs and trees. Some of the first to invade the bed are types which grow exclusively on limestone as for example the rock rose (*Petrosphytum caespitosum*) and an alum root (*Heuchera rubescens*). Many others as fern bush (*Chamaebatiaria millefolium*), sulphur flower (*Eriogonum arborescens*), a rubber plant (*Tetraneuris arizonica*), and golden aster (*Chrysopsis villosa*) prefer limestone, although they do not require it. Common trees and shrubs of the region as pinion pines, Utah juniper, cliff rose, sage brush (*Artemesia tridentata*) etc. follow these lime-loving plants.

There are, as might be expected, deviations from the normal process of plant succession described above. These are caused by the peculiar forms of certain plants that grow on limestone and by peculiar properties of limestone itself.

One of these deviations is due to creeping plants that form mats on rock. Although they must have soil and room for development of their stocky roots, they serve in one respect as pioneers. They take root on moss and in holes or cracks, then spread over the bare rock. Such mats become much more rapidly established, are thicker, hold more moisture and gather more soil; therefore, are of greater advantage to plants that follow than are the lichen and moss beds. Rock rose is the commonest of these mat-like plants and the most effective in succession. Its greyish green leaves are arranged in little rosettes that lie close together forming a large soft bed. Alum root, a rather uncommon creeping plant, is found almost exclusively on the north faces of rocks where it forms a beautiful, loose mass of bright green leaves. Other plants of this type are sand wort (*Arenaria compacta*) and Sulphur flower.

Moss sometimes creeps over these different plant carpets. Herbs that are mentioned above as following the lichen and moss stage gradually scatter over the rock by means of the mats. Here also grow wild snap dragons (*Pentstemon glaber* and *P. torreyi*) and snake weed (*Gutierrezia sarothrae*). With them come the common shrubs and trees. The first of these are often sage brush, wild hydrangea (*Fendlera rupicola*) and snowberry bush (*Symphoricarpos longiflorus*). Finally with the establishment of pinyons, junipers, cliff rose and grasses - plants typical of the plateau forest - the climax is reached. This group of plants maintains itself and so remains the same if undisturbed.

A second important deviation from the normal process of succession is due to that character of the limestone which allows it to be readily dissolved by rain waters. Consequently pocket-like holes are formed on its surface. When these pockets are protected from the wind and are large enough to collect sand, silt, leaves and moisture, seed plants are able to take root in them and grow without the assistance of the otherwise necessary lichen and moss stage. When this is the case the length of succession is probably cut more than half. If a tree overhangs the rock, pro-

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tecting it and providing soil-building materials in the form of dead leaves and cones, the process is again greatly hastened.

There are certain species that occur consistently in limestone pockets. Fern bush is the commonest and the most striking example. It is a plant with matted superficial roots that are very effective in holding soil. A great many of these roots may be massed in a small space so that even quite small pockets provide room for a good-sized fern bush. There is a large number of small leaves on this rounded symmetrical plant, and when they fall in the autumn they add considerably to the debris which later forms useful soil on the rock. Many plants of the climax type such as grasses, cliff rose and pinyons, grow in the protection of fern bush. Unlike many of the pioneers, however, fern bush is not readily killed off by the plants that start life in its protection so that it persists well into the climax stage.

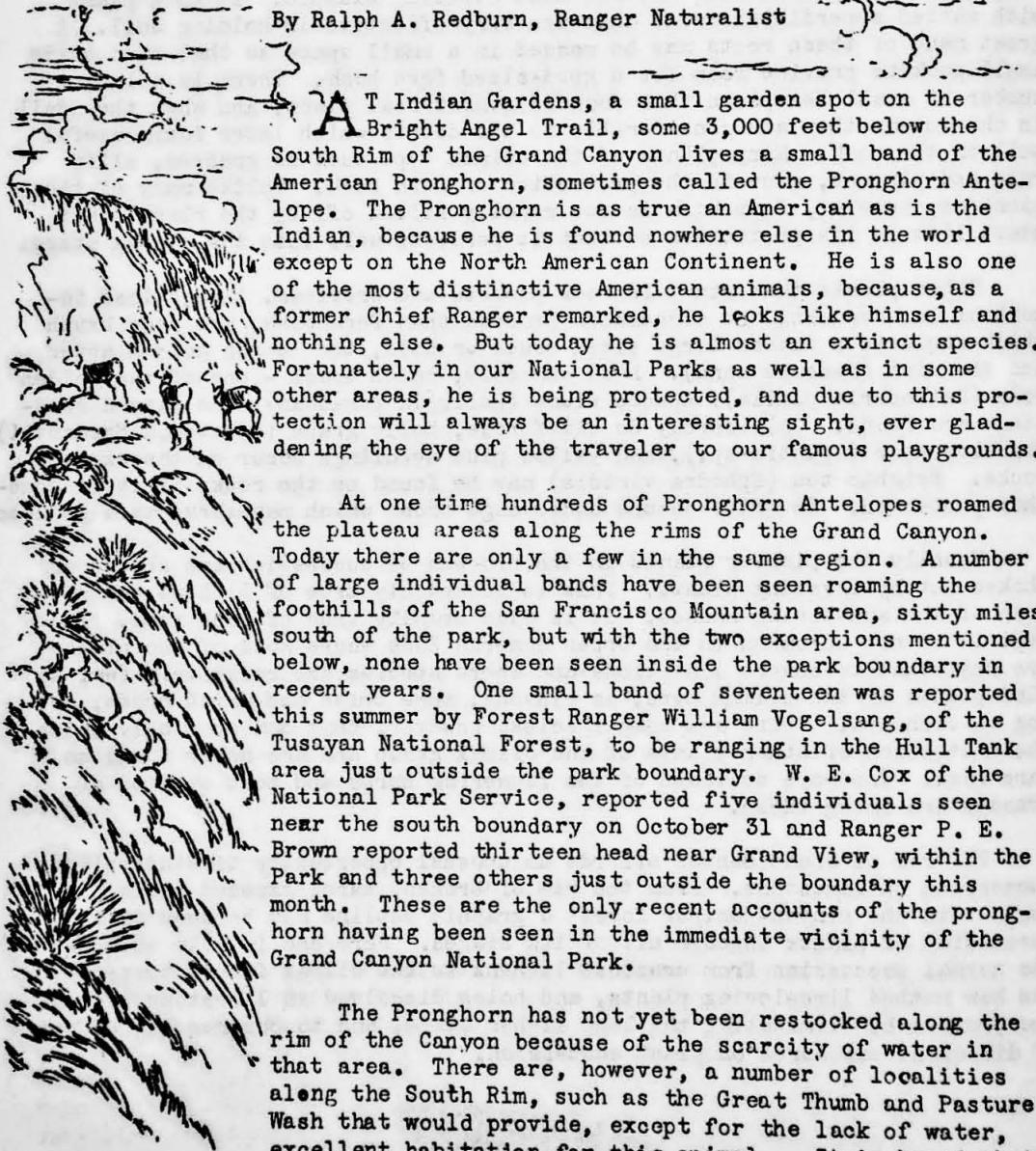
Other plants that start in rock pockets and crevices, though less important in advancing the succession process than fern bush, are sage brush which requires a rather large sized crack or hole, the common golden aster and the mint (*Hedeoma nana*). Less commonly, match brush - one of the golden rods (*Petrodoria pumila*), Apache plume (*Fallugia paradoxa*), and pinyon seedlings are found. Only rarely do cliff rose, holly grape (*Odostemon fremontii*), prickley pear (*Opuntia* sp.), and yellow pine seedlings occur on the exposed rocks. Brigham tea (*Ephedra viridis*) may be found on the rocks if it is somewhat protected. It often occurs under sage brush which may serve as a pioneer.

Usually the pioneer plants in the process of succession are shaded or choked out by invading plants. This is invariably true of lichens and of some of the sun-loving mosses. It is also usually true of rock rose. In fact it is not uncommon in the Upper Sonoran Zone where most of the plants are resistant to severe conditions and where species are relatively few, to find plants of the climax type, as pinons, sage brush and match brush, acting as pioneers. There are some species, however, that can grow only under the protection of other plants of the climax group and are never found on bare rock. The more delicate of the flowering herbs and most species of grasses are among these.

The rim of Grand Canyon affords an unusual opportunity to study plant succession on limestone. From the rim of broken, bare, exposed rocks south into the pinyon-juniper forest a graphic outline may be seen of a succession of plants through all of its stages. Here one is able to trace the normal succession from crustose lichens to the climax forest type; to see how matted lime-loving plants, and holes dissolved in limestone hasten the process by eliminating the long lichen stage, and to observe the effect of different exposures on plant succession.

AN EXPERIMENT IN GRAND CANYON WITH THE AMERICAN PRONGHORN

By Ralph A. Redburn, Ranger Naturalist



At Indian Gardens, a small garden spot on the Bright Angel Trail, some 3,000 feet below the South Rim of the Grand Canyon lives a small band of the American Pronghorn, sometimes called the Pronghorn Antelope. The Pronghorn is as true an American as is the Indian, because he is found nowhere else in the world except on the North American Continent. He is also one of the most distinctive American animals, because, as a former Chief Ranger remarked, he looks like himself and nothing else. But today he is almost an extinct species. Fortunately in our National Parks as well as in some other areas, he is being protected, and due to this protection will always be an interesting sight, ever gladdening the eye of the traveler to our famous playgrounds.

At one time hundreds of Pronghorn Antelopes roamed the plateau areas along the rims of the Grand Canyon. Today there are only a few in the same region. A number of large individual bands have been seen roaming the foothills of the San Francisco Mountain area, sixty miles south of the park, but with the two exceptions mentioned below, none have been seen inside the park boundary in recent years. One small band of seventeen was reported this summer by Forest Ranger William Vogelsang, of the Tusayan National Forest, to be ranging in the Hull Tank area just outside the park boundary. W. E. Cox of the National Park Service, reported five individuals seen near the south boundary on October 31 and Ranger P. E. Brown reported thirteen head near Grand View, within the Park and three others just outside the boundary this month. These are the only recent accounts of the pronghorn having been seen in the immediate vicinity of the Grand Canyon National Park.

The Pronghorn has not yet been restocked along the rim of the Canyon because of the scarcity of water in that area. There are, however, a number of localities along the South Rim, such as the Great Thumb and Pasture Wash that would provide, except for the lack of water, excellent habitation for this animal. It is hoped that

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in the future a program can be developed for reclaiming as much water as possible in these areas and introducing the pronghorns, so that the latter will become as numerous as the habitat will permit.

The Park Service has within recent years been trying an experiment with the Pronghorn Antelope. It has taken a few of them down within the walls of the Grand Canyon - twelve being the original number introduced. An account of this introduction can be found in Grand Canyon Nature Notes, Volume 1, Number 8, and Volume 3, Number 1. Of the original group of animals eleven survived the trip. These were placed at Hermit Camp on the Tonto Platform 3,650 feet below Pima Point, on the south side of the Canyon. During the years 1927 and 1928 the band migrated eastward along the Tonto Platform to the Indian Gardens area, where they are now found.

The American Pronghorn is not accustomed to living on such a range as that provided by the Tonto Platform, although, as has been stated, he is a native of Grand Canyon National Park, and once inhabited the plateau areas along the rims. His home is the open plains and in former years he ranged in countless numbers over all that vast territory west of the Missouri River, in Canada and Mexico as well as the United States. But he has melted away before the advance of civilization until now he is found only in small bands in the more isolated places. Due to this advance of civilization he has been driven from his plains home up into mountainous areas as was one of his natural enemies, the coyote. But not having the ability to adapt himself quickly to his surroundings, or the cleverness possessed by the coyote to outwit mankind, he has not thrived under this sudden change in habitat. His favorite foods in the plains areas consisted mainly of grass and weeds, as well as many other herbs. But since he has been driven from the plains into the mountains and foothills he has also been driven from grasses to sage, or from a grazing animal to a browsing animal. Such a change would have ill effect upon most animals and it would take many generations, as in the case of the pronghorn, to master this readjustment. Also in different localities tastes would differ. What would apply in one region would not always apply in others. Such appears to be the case in regard to the foliage provided by the Indian Gardens area. Here the pronghorn's principal native food consists of black brush (burro brush) which is a small rosebush about the size of sagebrush. Other favorite foods are grasses, cottonwood, and wild grape.

It has taken him some time to become accustomed to this change in menu, and because he is such a sensitive and nervous animal he has had trouble in becoming acclimated to his new home at Indian Gardens. For a few years the census showed a decrease from the original number introduced. The present count, however, is nineteen, six of which are kids. There are ten bucks and nine does in the herd. It is believed that they have finally become adjusted to



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their surroundings, which will result in a steady increase from year to year, provided that new stock is introduced to insure stronger and hardier animals. This, the Park Service plans to arrange for.

The visitor seeing one of the Pronghorns for the first time probably associates it with some kind of deer. *However, it does not belong to the deer family (Cervidae), neither is it a true antelope (Bovidae), but belongs to a family of its own (Antilocapridae) of one-pronged deciduous-horned animals including one genus (Antilocapra) and several geographic races peculiar to North America (Antilocapra americana americana, and related subspecies: Antilocapra americana mexicana).

It might be well at this time to compare a few of the outstanding characteristics between the deer, antelope, and pronghorn. The deer (including elk, moose, caribou) produce what are known as antlers, which are outgrowths of the skeleton and are of the same composition as bone. Antlers are solid, the main stem being known as the beam while the branches are called tines or points. Antelope (including cattle, goats, sheep, buffalo, and muskox) produce horns which are processes of growth of the epidermal skin. Horns are hollow and are composed of a horny sheath of epidermal substance supported by a bony core and are comparable to finger nails, hair, or hoofs. The pronghorn also produces horns but each horn has one fork or prong, which distinguishes it from the horn of the true antelope. Antlers are often incorrectly called horns and horns incorrectly called antlers. The only true horns that we have on native animals in Grand Canyon National Park are those of the mountain sheep. Antlers occur on the deer and intermediate types of protuberances on the pronghorns. All American horned and antlered animals have hoofs, but all hoofed animals do not have horns or antlers.

The American Pronghorn is the only hollow-horned ruminant (hoofed animal which chews the cud) having forked or pronged horns, hence its name. The head of the animal is surmounted by a pair of upright, flattened, blackish horns, each with a single forward-pointing prong. Both the males and females are said to possess these; however, their presence on the does is more infrequent than frequent. Horns that are possessed by the does are usually quite deformed, being smaller and unsymmetrical. These may only be remnants of more beautifully developed horns of ages gone by, and it may be that after a few periods of evolutionary development all females will be without them, as some are now. The horns are hollow like those of the antelope, but the pronghorns alone, among all hollow-horned ruminants, exhibit the unique characteristic of shedding them. This process takes place in late autumn. Close watch was made this year of the shedding by the animals here at Indian Gardens. It was completed in the middle of October after a period of twelve days. The animal is never completely without horns as only the horny sheaths, which are supported by bony cores are shed. The new horn is well developed

* Based on "Field Book of North American Mammals"
By H. E. Anthony.

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under the old sheath before the latter is dropped. The horns are used for the purpose of offense or defense, although the animal depends for protection upon his ability to run and on his protective coloring. Usually this is quite sufficient to allow escape from natural enemies. The pronghorn is known today as the fastest-running native animal of the North American Continent.



MISCELLANY

COVERING that vast seldom-visited area formed in western Grand Canyon by the large peninsula known as the Great Thumb, is an almost pure stand of Juniper trees. In some places these are separated by patches of sagebrush or shadscale, but in many others they form a surprisingly dense cover. This year the blue berries appear on them in extreme abundance so a very beautiful sight throughout that area is the result.

Almost the only traces of animal life found on a recent trip to Great Thumb Point were the droppings of Coyotes, yet these were very numerous. Surprisingly enough a large percentage of them contained numerous blue Juniper berries, largely in undigested form. What then is the attraction of these berries for the Coyote? Do they serve as a food in the absence of an abundance of game?

-- E. D. McKee --





Footprints
of Baropus

THE footprints of a primitive four-footed animal known as Baropus were found in the Coconino sandstone of Grand Canyon and described by Dr. C. W. Gilmore of the Smithsonian Institution in 1927. During the past year the late Professor John L. Tilton found in the Waynesburg sandstone (also Permian Age) of West Virginia some extremely similar tracks -- certainly formed by an animal of the same genera if not of the same species.

In a recent bulletin of the Geological Society of America (Vol. 42 pp. 553) Professor Tilton stated concerning his fossil track discovery - "As to whether these specimens represent a different species than that found in Arizona the judgment must depend on the measurements. The Arizona animal is described as climbing a slope of wet, cross-bedded sand. The West Virginia animal was walking on a flat. The Arizona animal placed his hind foot before the impression of his fore foot as he went up the slope and crowded the sand backward. The West Virginia animal was walking leisurely on a flat and crowded the wet sand out laterally somewhat as he progressed. He did not place his hind foot before the impression of his fore foot."

It was with great pleasure that one year ago we escorted Professor Tilton down the Hermit Trail and were able to show him in the Coconino our finest exhibit of fossil tracks in place.

ERRATA -- Attention has been called to the fact that in the July issue of "Nature Notes" (Vol. 5, No. 9) in the article on Giant Moths, an eastern representative (*Cecropia*) of the genus Samia was listed. This should have been the western form - Samia rubra.

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In the last issue of Nature Notes mention was made under "Additional Notes on the Tanner Trail Trip" of a small flycatcher found near the Colorado River. This bird which was collected has since been identified at the U. S. Biological Survey as Empidonax traili brewsteri, a new record for the Grand Canyon National Park.

