ZION-BRYCE

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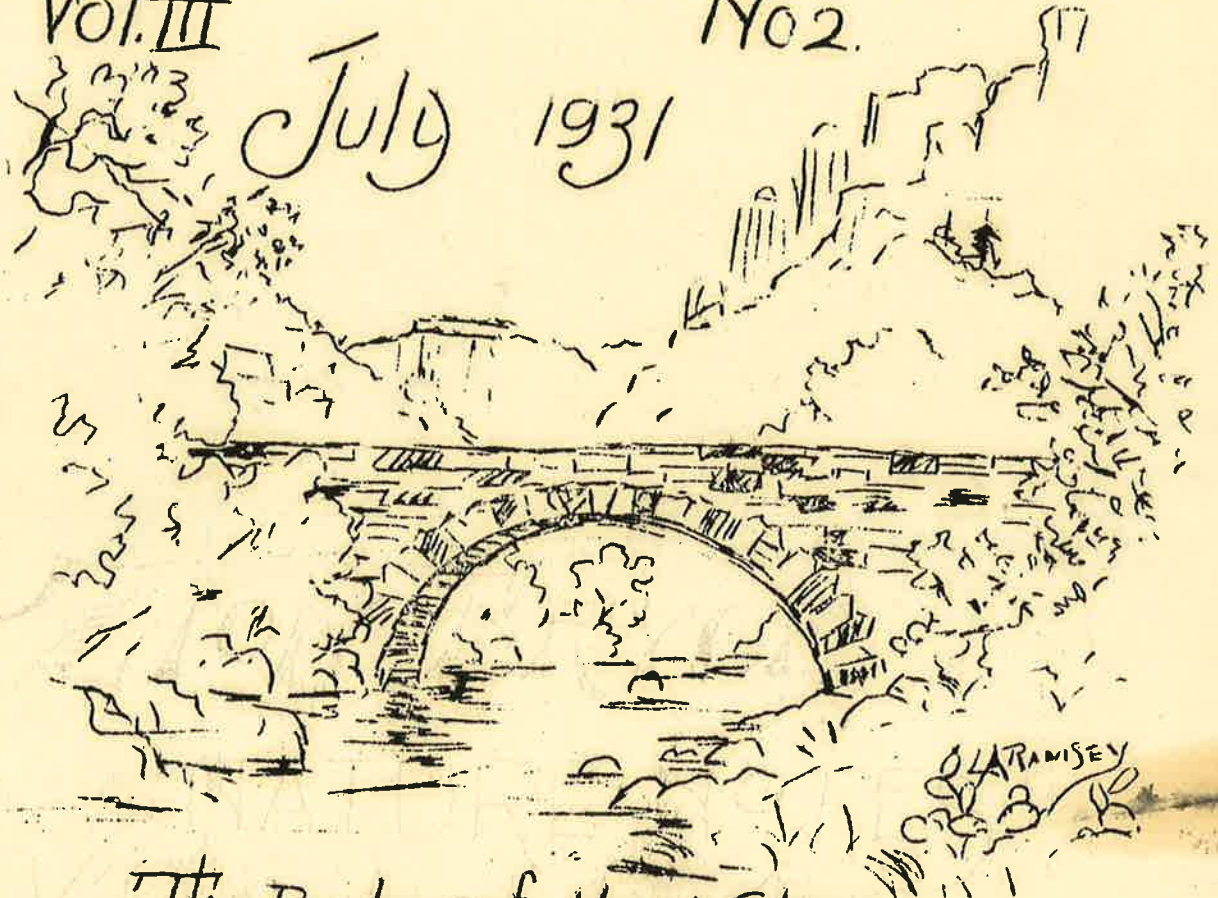

The Bridge of Many Colors

U. S. DEPARTMENT OF THE INTERIOR
National Park Service
Zion and Bryce Canyon National Parks, Utah

ZION-BRYCE NATURE NOTES

July, 1931 Vol. III. No. 2

This series of bulletins is issued from time to time during the summer for the information of those interested in the educational opportunities, the natural history, the scientific features, or the scenic beauties of the region. PUBLICATIONS USING THESE NOTES SHOULD GIVE CREDIT TO ZION-BRYCE NATURE NOTES & AUTHOR

Thos. J. Allen Jr., Superintendent

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ARE WE BLIND - OR CANT WE SEE?

By S. D. Durrant, Ranger-Naturalist

Possibly no one realizes the abundance of animal life that is present on all sides in the wilds. People have been known to say that they can see no life and complain over the dearth of animals. As we walk down the silent paths in wood or plain little do we realize the many pairs of eyes that are trained on us and are watching our every move. On some occasions, however, we are privileged to really see an unfolding of the rich fauna that surrounds us.

Two weeks ago I took a horseback trip up on the West Rim of Zion Canyon, where many wonders await the eye. I did not, however, see much mammal life, and I naturally concluded that the area was not very rich in this phase.

Just a day or so ago, I took another trip up the same trail, and many wonders of nature were on display. The Park Service had a construction camp near the base of Cathedral Mountain. As I drew close to the camp I noticed what I thought to be birds scampering through the trees and jumping from branch to branch. On closer observation, however, they proved to be small mammals. They seemed to be everywhere. When I arrived at the camp, the campground looked nearly like it was moving. There was movement in all places. Little animals were running across the ground; others were scampering up the trees; and still others were prying into food boxes. I dismounted and walked up to the commissary tent, where I sat down and remained quiet. In a few minutes there were just eighteen of these little chipmunks within a radius of ten feet around me.

These little fellows were very interesting and watched me very closely. When they were all at attention their tails wagged like that of a dog. The least movement on my part sent them scampering in all directions. As soon as I tossed a few pieces of cheese around, however, they were right back.

I was really surprised to see so much life in such a limited area. Of course the presence of food at the camp was the reason for their being so localized. Nevertheless I was duly impressed with the abundance. Then as I looked back on the trip of two weeks before I could only speculate on the vast number of animals that watched me proceed up the trail.

RECORDS OF CLIMBING THE GREAT WHITE THRONE

By H. L. Reid, Ranger-Naturalist

According to the account given by Don Orcutt, who, on June 30, 1931, made the climb to the top of the Great White Throne, he was not the first man to reach the top of that famous monolith.

Mr. Orcutt reported that on the top of the Throne he discovered a portion of a human skull, yellow and brittle with age. No record remains to tell the story connected with that skull and one is left to conjecture how it might have reached there. Perhaps in days now forgotten some venturesome Indian, perhaps of the Cliff Dwelling nation, made his way to the top, but after reaching there feared to make the descent and remained, awaiting the rescue party which never came.

The story of the climbing of the Great White Throne can well be summarized as follows - One man, name and date unknown, successfully reached the top, never to return, leaving his skull as evidence.

A second man, William H. N. Evans of Pasadena, California, on June 28, 1927, succeeded in reaching the top, only to slip and fall. He rolled or slid for a considerable distance badly bruising and possibly fracturing his skull and had to be carried out by the Rangers.

A third man, Don Orcutt of Los Angeles, California, reached the top on June 30, 1931, and returned successfully, with his skull intact.

SPHEX WASP GATHERING FOOD

By Marian Woodbury.

The Sphex Wasp had a heavy load and a hard way to travel, for over the rough gravel and sandy furrows near the camp ground, she was dragging a large green caterpillar. She had grasped it by the throat with her mandibles (jaws) and had wrapped her first pair of legs around its body, the hind part of which dragged along the ground between the other legs as she managed to walk, and, surprisingly, even to run with the other two pair. She scurried along, now and then bumping into a small plant or a small pebble, which often sidetracked her and started her off in another direction. Once she started up the side of a furrow but lost her balance, and incidentally the caterpillar, but she soon regained her prey and started on again. Another time she got sidetracked and started up a tree, but we frightened her and she dropped it to the ground. Following it down, she picked it up again by the throat with her mandibles, and hugging it in her arms, started on her way again.

Finally she got to a point where she seemed to have lost her way, or was undecided which way to go. She laid her burden down and hurried around and around as if searching. Suddenly she espied the object of her search, and darting to a small depression in the soil, she removed a small pebble and exposed the entrance to a burrow. She returned to the caterpillar, grasped it by the throat, but in the opposite direction, and walking backwards, she dragged it after her and disappeared down the hole. She had not been gone more than half a minute when she reappeared, placed the pebble back to the entrance to the burrow, and scratched loose sand over it with her legs until the entrance was covered over and made to blend with the neighboring sand - an expert job of camouflauging.

The next day I got the Park Naturalist to help me dig down beside the hole and uncover the nest. Down at the bottom of the underground passage, which was 2 3/4 inches long, we found an enlarged chamber, in which were stored three nymphs of the bug family Pentatomidae, one of the family Coreidae, and the green caterpillar of yesterday, all paralyzed, evidently stored there for the purpose of providing the offspring of the wasp with a mass of stored food sufficient to last it until maturity.

The same day we discovered a small black spider wasp dragging an Aranea spider heavier than itself. She grasped the spider by the legs and moved off backwards. Soon she came to the wall of the museum, and ascending it a short distance, with the spider hanging downward, she moved off sideways. After several stops she left the spider on a shelf, flew around until she located her hole in the ground, which was open, returned for the spider and dragged it to the opening. She spent some little time in the hole, enlarging and cleaning it out. As she entered the hole, standing on her four hind legs, the first pair were used to scoop sand and send it flying between her hind legs and out of the hole in a continuous stream as though it were raining sand. When she appeared to be satisfied that it was large enough, she dragged the spider down the hole and remained there with it four minutes before emerging and flying away.

Later we dug down into the hole and found two spiders of similar size and kind, both of which were paralyzed but still alive. To the side of the abdomen of one was attached an egg of the wasp. The spiders were undoubtedly designed as food for the young larva of the wasp when the egg should hatch.

INDIAN LEGENDS REGARDING PLANTS

By K. E. Voight, Ranger-Naturalist

Many a beautiful flower has been picked by an enthusiastic visitor to our parks, often to be dropped a few minutes later beside the road or trail a few rods from the place where it was growing, after it has wilted and lost its beauty. The wild flowers will not last long after they are separated from the root, the organ that supplies them with water. After it has wilted, a flower is no longer an object of admiration, but rather an object of pity.

As a general rule, the attitude of the American people is changing toward the ruthless picking of wild flowers. They are beginning to pride themselves on the conservation of plant life as well as other things. But this attitude has been slow to develop among the majority of people who have little contact with the wild things of nature.

The common Indian Paint Brush (Castilleja sp.) was considered by many tribes as a love charm, and the lover often sought to conceal it on the person of the loved one. Elephant Head (Pedicularis sp.) was credited by some tribes, not only with tying Cupid's knot, but with keeping it tied also. An Indian's love was accepted if he had a piece of this plant on his person. One or two of these leaves, when fed to a quarrelling man and wife acted as a love balm instantly. Divorce among them was said to be practically unknown.

THE KING TAKES A REGAL MEAL

By J. W. Thornton, Ranger-Naturalist

The eyes of the King Snake (Lampropeltis getulis boylii) had cleared, his skin was soft and silky. He had crawled out of his old suit, and his new white and black one was smooth and shiny. He had emerged from a period of inactive stupidity to one of alertness. No longer was that opaque layer of dead skin over his eyes. They were bright. He was now seeing things clearly and accurately.

With normal vision came normal appetite and this beautiful snake cannibal was in full readiness for another meal. The King had been tempted before by introducing snakes into his apartment, but as long as his vision was bad he was not interested.

But now, after a little teasing by placing a Great Basin Rattlesnake (Crotalus confluentus lutosus) in his den the King's desire for a meal was developed. Once aroused, action followed. The King seized the Rattler about eight inches behind his head. The Rattler buried his fangs in the body of the King. This did not interfere at all with the purpose of the King to satisfy his hunger. He wrapped his body about the Rattler in four constricting folds.

We were not quite ready. The photographer had not arrived, so we separated them. Later, all being in readiness, both snakes were taken from their compartments and placed on the ground.

After some maneuvring the King seized the Rattler two thirds of the way down the body. The Rattler struck a glancing blow at the King and excitedly tried to avoid his captor. Soon the several wraps of the King's body were squeezing him unmercifully. After about ten minutes the King released his mouth hold and began looking for the head of the Rattler. As long as the Rattler remained perfectly still the King made no grab, but as soon as the head moved the King seized it and the Rattler was helpless. As soon as the Rattler was completely worn out he was swallowed slowly by the King as he leisurely worked his jaws over him and forced him into the digestive tract.

When the Rattler was about half swallowed the King decided to move quarters. Rearing his head, he carried the Rattler around much as enthusiastic fans do a favorite home run swatter.

Finally, the Rattler disappeared. The regal appetite was satisfied and his Majesty, back in his apartment, curled up in a can of water and stayed there for hours.

NATURE'S MAGIC
By J. W. Thornton, Ranger-Naturalist

Two inches of wing growth in twenty-five minutes is the record of growth made by the Western Poplar Sphinx Moth (Pachysphinx modesta occidentallis). It had crawled from its cell in the soil and made its way into the open where the wing growth that so magically occurred later could take place without crowding. We took it from the top of the bed where it had climbed, a heavy, long-bodied insect with stubby wing beginnings, and hung it on the screen of the window. As it hung there we watched the magical appearance of its wings as they emerged from small points to beautiful spreads of colored softness. We measured the length and the width and were amazed at the transformation. In twenty-five minutes the wings had elongated two inches and the width had increased one and one-half inches.

Before us was that which no human had could reproduce. Fluttering with the throb of new life this soft colored transformation revealed the real magic of nature. Soft and colored as the polen of a beautiful flower the wings took form. The food stored at the base of the wings was quickly transported to the fragile edges where the growth was taking place. New cells were rapidly being formed and new proportions with varied colors were magically assumed. The color was fawn or pale brown. The upper surface of the forewings had different bands of these shades and the under surface was purlish red at the base. The hind wings were largely purplish red above and entirely fawn color beneath.

The larvae are coarsely granulated with fine white specks, pale oblique lateral stripes and an anal horn. The larvae prefer cottonwood but often feed on the willow, both of which are near the camp.

This moth being a female, the antennae were not so large. We thought that the proboscis would soon unravel but we found that this Western Poplar Sphinx had only rudimentary mouth parts, unsuitable for feeding. Evidently the adult takes no food and lives only as long as the stored-up food of the body supplies it with the necessary energy to mate and produce eggs. Having no mouth parts with which to eat, the Western Poplar Sphinx moth must have stored within its body sufficient food to fully develop all parts of its anayomy. It must have stored food to produce energy to travel around, meet its mate, and then produce the eggs from which other moths may come. The larval stage is the period for food storage that must feed the moth during later important life activities. If the food supply is depleted before the moth has completed its natural functions, death comes and the life cycle is not completed.

THE FEMALE OF THE SPECIES - SCORPION

By S. D. Durrant, Ranger-Naturalist

The Scorpion, Hadrurus hirsutus, that much feared, and rightly maligned animal, is also a cannibal. Yes, he eats his own kind, and apparently seems to relish it. In the museum at Zion National Park there were two of those dreaded animals on display in a jar. Now there is only one. A few of the hard parts of the exoskeleton remain to testify of the existance of the other individual.

These two animals were placed in the same jar. At a later date the larvae of an elaterid beetle was introduced into the jar with them. After an hour's time the larvae was not to be seen except for a small part that projected from the mouth of one of the scorpions.

Many of us have never seen the Scorpion Waltz, although we have all heard of it. Just a few days after placing these animals in the jar we noted a peculiar performance. The one had clasped the other by the pincers. Their tails were curled up over their backs and they were excitedly pulling and pushing each other up and down the entire length of the jar. In view of this performance we were justified in believing that they were male and female.

After seeing them in this state of comparative companionship, it was a little surprising in looking into the jar the other day to see but one complete individual, and merely the spare parts of the other. It looked something like an auto junk yard, where one machine had been torn down to patch up the other, and the spare parts left over.

The female of the species is often, as Kipling says, more deadly than the male. Analysis of the sex of the existing individual has not yet been made, but the secondary sexual characters proclaim it to be the dangerous one.

CARNIVOROUS TADPOLES?
By J. W. Thornton, Ranger-Naturalist

I noted one Monday afternoon that the tadpoles of the tree frog, Hyla Arenicolor, in the Stadium Pool were assembled in mass at a certain spot. This place was black with them and they seemed busy feeding. I reached down into the water and took out the half of a chicken that had been tossed in there from someone's lunch. The chicken had been fried and the flesh was as yet unspoiled. I saw here an opportunity to observe the feeding habits of the "pollywogs" so I placed the piece of chicken that I had taken from the water back where it was before. Soon the tadpoles had collected again and were busy feeding. I did not return on Tuesday, but went back again Wednesday. Great activity was still apparent around the piece of chicken. The pieces of flesh that hung to the bone were gradually disappearing. The flesh that was left was still white and apparently unspoiled. On Thursday afternoon at three-forty-five I again visited the Stadium Pool. This time I found the bones stripped bare of all the meat, but the bones were still the center of great feeding activity and the tadpoles were massed there in large numbers.

Do "pollywogs" eat flesh? There was no mistake about them satisfying their appetites on the appetizing morsels of fried chicken. Who would have ever suspected a tadpole of becoming a gourmandizing epicurean, satisfying his tastes on the white flesh of a spring fry? Of course, the normal food is the green algae which abound in the water of the pool, but it seems evident that a little more protein in the diet is relished a great deal.

SILTAGE IN THE VIRGIN RIVER
By A. M. Woodbury, Park Naturalist

According to records of water readings kept by the Water Resources Branch, U. S. Geological Survey, made at the old bridge over the north fork of the Virgin River (Mukuntuweap) a short distance above the new bridge at the forks of the Zion and the Zion-Mt. Carmel highways, the discharge of this fork of the river ranges between eighty thousand and ninety thousand acre-feet per year, or an average of about 7,000 acre-feet per month, enough water to cover a square mile more than ten feet deep.

Assuming that this water carries an average of 1% of silt or suspended matter (which is a lower estimate than the average figures for the Colorado River) in one year it would have transported past that bridge enough sediment to cover 1,000 acres of land nearly a foot deep. This would weigh in round numbers about one million tons. In other words, the sediment carried past that bridge would, in one year, fill more than 20,000 railroad cars or an average of about 60 cars per day.

This stream is one of the main tributaries of the Virgin River, but there are eight or ten other important tributaries which pour sediment into the river before it reaches the Colorado. Roughly calculated, the Virgin River should pour into the lake above the Boulder Canyon Dam when completed, approximately 10,000 acre-feet of sediment per year.