

Zion and Bryce Nature Notes



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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 Zion and Bryce Canyon National Parks. Additional copies of these bulletins may be obtained free of charge by those who can make use of them by addressing the Superintendent, Zion National Park, Utah. PUBLICATIONS USING THESE NOTES SHOULD GIVE CREDIT TO ZION-BRYCE NATURE NOTES.

P. P. Patraw, Superintendent

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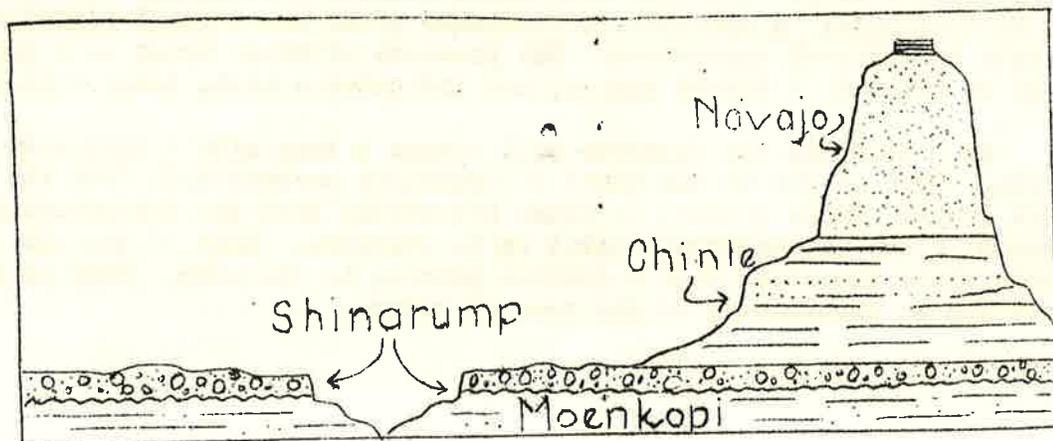
SHINARUMP CONGLOMERATE AS IT OCCURS IN ZION

By J. C. Anderson

To the average visitor in Zion, the Shinarump Formation is just a layer of rock buried beneath the floor of the canyon and therefore it has no particular significance in the geologic and scenic display in the park. This is a mistaken idea that can most easily be corrected by a brief exposition of the scenic and scientific features depending entirely on this thin and persistent layer of rock.

Within Zion Park the exposures of Shinarump are confined to the south and west parts where a juniper and pinyon covered bench-land has been developed on the top of this formation. Erosion has cut deep sharp walled canyons or re-entrants from the Virgin River channel into the park area, exposing the underlying Moenkopi Formation.

For purposes of identification the Shinarump Formation is a heavily cross-bedded formation usually less than 100 feet in thickness forming an abrupt ledge between the sloping hills of the Chinle and Moenkopi Formations. In composition it ranges from a coarse conglomerate to a fine clear quartz sandstone. The coarse material is composed of a great assortment of colored pebbles consisting of white quartzite, black chert, and red, brown, gray, and greenish jasperoid material. Numerous small specks of iron rust give the rock a mottled appearance.



Within Zion Park a great many large petrified logs have been eroded from the Shinarump to form the park's petrified forest. Logs of large diameter occur throughout the entire thickness of the formation in the coarse and fine material alike. White and gray are the predominating colors, although occasionally amethyst crystals of quartz have been developed in small cavities.

The regional scenery is largely controlled by the Shinarump which caps all the high mesas between Rockville and the Hurricane Ledge to the west.

FREMONT COTTONWOOD

By K. E. Weight

Populus fremonti S. Wats. is the most common deciduous tree on the floor of Zion Canyon. It is a tree that thrives very well along most of the streams from Southern Utah, through Arizona, to California. It is seldom found reaching the Transition life belt (Western Yellow Pine) but is very common in the Lower Sonoran (Covillea) and the Upper Sonoran (Artemisia) life zones.

Environmental conditions vary so much in Zion Park that trees of this species range in height from small stunted individuals to those 80 or 90 feet high. A decrease in available water has a rapid effect upon stature and general appearance. The presence of these trees is a sure sign of water in a desert region, and indicates a rich, loamy soil.

At a distance the observer will notice a tree with a very wide crown. This is due to the habit of branching successively from the main trunk. Those growing in dense situations lack the deliquescent branching and the excurrent habit is in evidence. Many of the old trees along the river show a decided leaning to one side. This is in part due to undermining of the tree by water.

NOTE ON FOSSILS FROM BRYCE CANYON

By Leslie E. Wilson

An examination of the marl which forms the rim of Bryce Canyon has disclosed masses of fossils occurring in various layers. For the most part, the fossils are casts; but in a few places, where the layers contain a high percentage of limestone, the preservation of the fossil snails is complete. The common form is that determined by Dall (U.S.G.S. Prof. Paper 164, p. 115) as Physa. Wherever the marl has been cut by trails, the fossils appear as ovoid clay balls, which represent the filling of the outer whorl of the snail. Frequently the major part of the rock is composed of these casts, which range in size from microscopic to one and one-half inches in length. The same form has been found in a layer of nearly pure limestone below the rim near the middle of the Wasatch formation. Search in the clay layers of the formation has as yet been unrewarded with discoveries of fossils. Microscopic examination will doubtless add many genera to the one mentioned above.

In the sandstone immediately underlying the Wasatch formation both snails and fragments of bone have been unearthed. During the process of preservation, the ornamentation of these snail shells has been destroyed. The replacing material is usually one of the iron hydroxide group of minerals, which commonly preserves only the shape of the fossil. Among the bones found are pieces of vertebrae and part of the carapace of a turtle. The parts appear to be a nuchal plate bordered by fragments of costal plates. The size of the plates indicates an animal about three feet in length. The bones appear to be collophane, the most common mineral of fossil bones.

Below the sandstone layer just mentioned is found a shale member 50 to 100 feet thick, and below the shale another layer of sandstone containing many excellent casts of the river clam Unio is found. This layer containing Unio casts has also been found in the canyons below Whiteman's Bench.

THE DISCOVERY OF ZION CANYON

By H. L. Reid

Zion Canyon lay, like an unclaimed jewel, hidden from the eyes of civilized man for uncounted ages. Its sacred walls reverberated only the sounds of the animals in their struggle for existence. The deer and the mountain lion played over the canyon floor at the deadly game of hide and seek, while the vultures perched on the canyon walls waiting to reap a harvest from each combat. The sun-tanned Paiute Indian, little more than one among the animals, stealthily crept among the underbrush with his bow and arrow in hand, taking his sustenance from among the wildlife.

This solitude was not broken until the November days of 1858 when Nephi Johnson, a stalwart young Mormon scout, entered the confines of Zion Canyon. Johnson, acting under instructions from Brigham Young, had been sent into the valley of the upper Rio Virgin to investigate the resources of the region with a view to the establishment of settlements. Securing the assistance of the Indians, he followed an Indian trail which led him into the desired district. Finding a sufficient flow of water in North Creek, some fifteen miles below Zion Canyon, for the irrigation of a few hundred acres, he considered it a desirable location for the founding of a settlement, but being a true scout, he was not satisfied until he had made a thorough investigation of the region. Securing again the services of the Indians he set out on an exploring trip that was to lead him into one of the rare beauty spots of the world - Zion Canyon.

As Johnson reached the mouth of the canyon his guides refused to enter the narrow defile, insisting that it was the home of "Wynopits", the evil spirit. The Indians' fear of the evil spirits had evidently been intensified by their experiences with a bear which had killed some members of an Indian hunting party while within the canyon, just a few days prior to Johnson's arrival. Although refusing to accompany Johnson into the canyon, the Indians agreed to await his return, providing he returned before the setting of the sun.

Alone, Johnson entered to break the solitude of ages. Alone he viewed the majestic beauty that has since inspired thousands. Silently he rode past the Great White Throne and entered the sacred confines of the Temple of Sinawava. He possibly rode well beyond the Temple into the Narrows, as he reported that the canyon was so deep and narrow that at places the sun was seldom seen.

Johnson spent much of the day within the canyon, eating his meager lunch beside one of the small streams flowing from one of the springs on the east side of the valley.

The attitude of Indians toward the canyon, in the days when Johnson made his visit, is a matter of doubt. The stories that have come down to us from the early pioneers and from the Indians are conflicting. One group of stories would lead to the conclusion that they held the canyon on fearful awe as the home of evil spirits which sought to destroy all who entered.

The majestic heights of the West Temple, one legend avers, was the home of Kenasava, the Spirit of Strange Happenings. Each fall of rock was attributed to be the work of this strange spirit. Sacred fires, so they claimed, had been seen by night and columns of smoke by day arising from the top of the West Temple, alighted there by the hand of Kenasava, the Spirit of Strange Phenomena.

According to the stories told by some of the early pioneers, the Indians would never remain within the Canyon after nightfall. If, in their chase after the deer or other game, the Indian hunters were, during the day, led into the Canyon, they could always be seen riding out at rapid pace as the shades of night began to settle over the region, pausing en route at the foot of the West Temple to drop a bit of meat as a sacrifice to the Spirit Kenasava.

Other stories are extant to the effect that the Canyon was a popular Indian rendezvous and hunting ground used by a comparatively large group of the Paiutes who had their headquarters on the Rio Virgin near the mouth of the Canyon.

According to one of the Paiute legends, the wolf, which figures so prominently in their legends as to become almost a sacred animal and called by them "Sinawava", lived somewhere at the headwaters of the Virgin River. Sinawava, the wolf, being somewhat of a god-father to the Paiute nation, made of the region of the canyon a favored spot rather than one to be held in fearful awe.

Another story, not very well authenticated, however, is to the effect that the Indians, at the coming of the first white settlers into southern Utah in 1851, held a great council meeting within the confines of Zion Canyon to decide upon the policy that should be followed concerning them. Some of the Indians, so the story goes, were in favor of attacking the white men and forbidding them to make settlement, but upon learning that the palefaces had with them one of the dreaded cannons, the decision was reached to let them settle undisturbed.

ALONG NATURE'S HIGHWAY

The large chimney in the Bryce Museum was apparently designed solely for the benefit of progressive chipmunk families.

About June 6th strange sounds were first noticed coming from the chimney. Constant rustling of straw and intermittent squeaking gave rise to the theory that an unwary chipmunk had fallen down the chimney and had been unable to get back out. Day after day more lusty and more varied became the noises from the chimney, belying the theory of a trapped and starving animal. To further dissipate the original idea, about the 8th day following the discovery of the noises, a mother chipmunk and six young trooped forth from the depths of the chimney.

For three days following their debut, the young wandered about the museum at random, becoming quite tame, even feeding from my hand. The family disappeared as suddenly and unexpectedly as they had appeared, and now seldom are they seen inside the museum.

Henry Grantham.

During the summer and fall of 1934 phenomenal changes in the color of the Virgin River were observed. On one day the stream varied its color three times. Beginning in the forenoon, the water was milky white in color, but due to cloudbursts on the plateau above, the color was changed to buff-red by the early afternoon. Finally, as a storm swept over the lower part of the canyon, great quantities of water poured over the cliffs and joined the river. The stream from Emerald Pools grew in size from a small trickle to a raging torrent, darkly colored, which on its junction with the Virgin divided that stream almost equally red and black. The dark color of the tributary stream was, no doubt, the result of a large amount of decayed material washed in by the rain.

Five hundred feet of gray shale through which the upper Virgin flows is responsible for the normal whitish or milky color of the water, because this easily eroded shale is continually supplying sediment to the stream, but when storms come, red sediments are carried into the stream, masking the white color. Thus the Virgin River is seen to make drastic changes in color from clear to white, red, and black.

J. C. Anderson

Among the numerous nesting birds observed at Bryce this spring, two are of more than passing interest. A pair of pigmy nuthatches are raising their family in an abandoned woodpecker hole in the Sunset Point observation station; and being naturally fearless, they never allow the presence of people to interfere with the feeding schedule. Even when sixty to seventy persons are crowded around listening to the naturalist the nuthatches continue their schedule, sometimes almost hitting people in the eye when they attempt to look down the nest hole. The birds furnish much amusement and interest to the large groups that gather daily at the Point to join the morning nature hike.

Two audubon hermit thrushs have built a nest in a yellow pine a rod from my cabin, and each evening they come to our door to eat crumbs. In return, we enjoy the beautiful evening song of the male, and the answering songs of others nesting nearby. To find these wilderness dwellers in so civilized a setting is an unusual experience to me.

C. C. Presnall

Moluccella laevis seems determined to visit Zion Park. After a journey of several thousand miles this Asiatic plant has approached within a few rods of the park and may even be within the boundary, though none have been seen. Unique and interesting, this plant with its exotic beauty will take its place as a successful addition to the flora of the region. The specimens seen last year (September, 1934) seem to be perfectly adapted to the intense desert conditions found around the southwest side of the park.

Mature plants present a sight seldom seen. Single or branching stems are completely covered by deeply cupped structures, straw-yellow in color and strongly suggesting a plant in full bloom. Close observation, however, shows the flower-like appearance to be the result of a large calyx concealing a small brown seed pod. The leaves on the plant at the time of examination averaged less than eight to the plant and were scarcely noticeable.

While plants exotic to the region are not welcome in Zion Park because of the danger of becoming confused with native types, it is, nevertheless, interesting to note the appearance of foreign plants that are able to establish themselves in a desert situation and add diversity to the existing flora.

J. C. Anderson.
