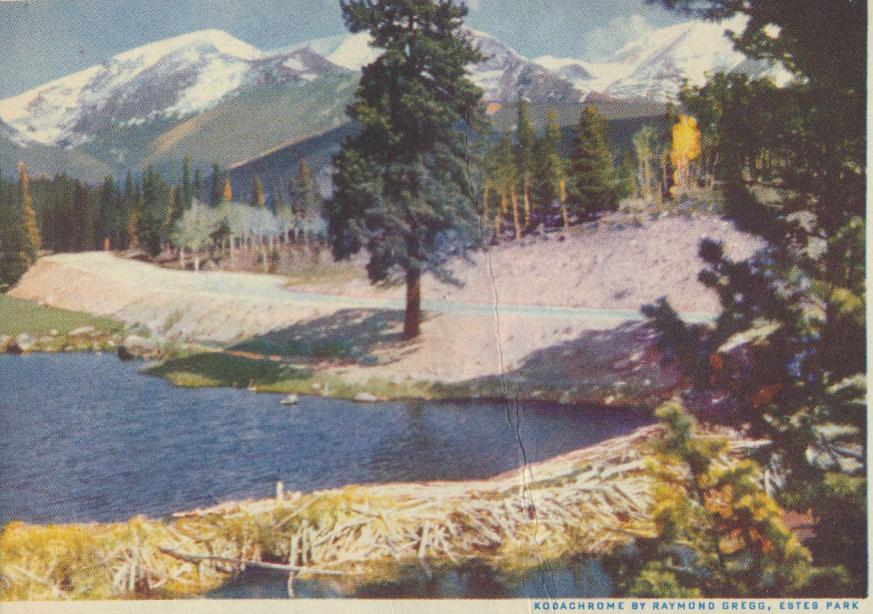




**ROCKY MOUNTAIN NATIONAL PARK**

*A Descriptive Guide*

**By RAYMOND GREGG, Park Naturalist**



KODACHROME BY RAYMOND GREGG, ESTES PARK



Beavers dwell beside the busy highway in Hidden Valley. Mummy Range in background.



KODACHROME BY PAUL W. NEBBIT, ESTES PARK



A naturalist-conducted party search for Bighorn Sheep and study interesting volcanic rocks amid inspiring surroundings on Specimen Mountain.

# Rocky Mountain National Park

A Descriptive Guide

Published by  
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On a remote ledge near the continental divide in Rocky Mountain National Park is a crude wall of stones. Artifacts found there tell of Indians who used this place as a hunting blind or lookout point, perhaps before Europeans knew that there was land beyond the Atlantic. To the Red Man, as to later frontiersmen, these towering mountains must have been formidable. But despite probable superstitious fears, widespread campsites indicate that Indians in numbers were lured to the wildest and highest places, probably by abundant game on the summer range above timberline.

For more than fifty years after white man knew of the Rockies, aside from trappers in search of beavers, few found attractions within this rugged wilderness, seeking rather the easy ways around this bold barrier to the westward march of empire.

It is different now. Intensive development of our favorable lands and growing industrialization have awakened in Americans a love and concern for our remaining wilderness. So, a system of National Parks has come to be, including some of our finest natural wonders and scenic lands. In addition to providing perpetual protection, the National Park Service makes every effort consistent with its responsibility to future generations to make the parks accessible, enjoyable, and meaningful.

Hundreds of thousands of people annually enjoy with

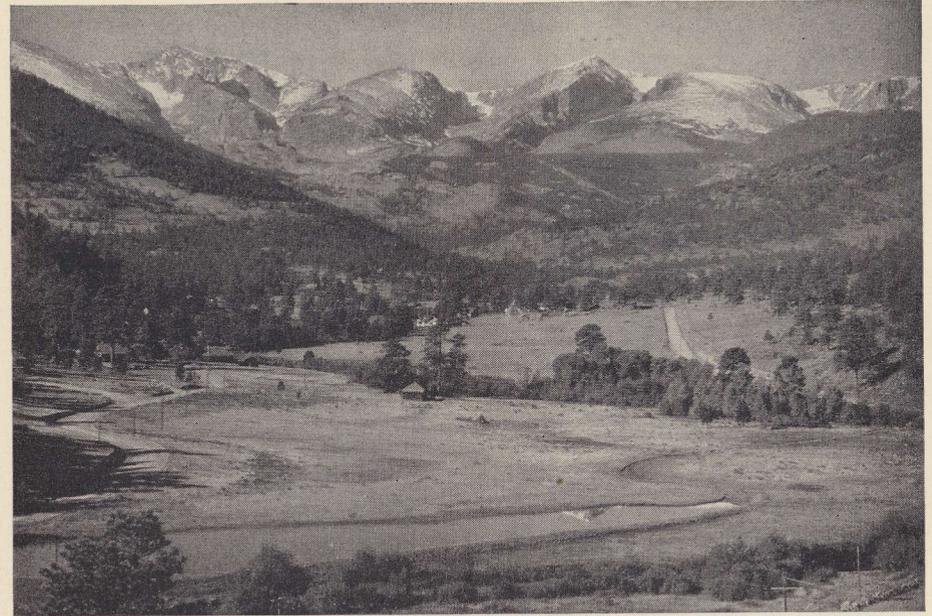
ease scenery in Rocky Mountain National Park, once available only to those capable of arduous travel over unbroken wilderness or blazed trails. Trail Ridge Road traverses a high ridge surrounded by an impressive assemblage of rugged summits, so that every motorist can enjoy the once rare privilege of intimacy and companionship of mountain peaks. Yet, just off the beaten paths of auto travel are many wilderness pockets seldom visited by man, where one can experience the isolation and pristine qualities of surroundings encountered by the pioneers.

The sheer beauty of the park is compensation for traveling far to see it. Invigorating summer climate is an additional attraction. Horseback riding, hiking, climbing, camping, fishing, and other outdoor pursuits, or a quiet afternoon of relaxation in surroundings of inspiring grandeur are popular means of enjoyment. Physical recreations and spiritual inspiration are prime values of the region.

Not less significant in a region richly endowed with unusual geological features, vegetation, and wildlife is the pursuit of interests in the stories behind the landscape, the forests and the meadows that color it, and the wild creatures that dwell therein. It is the objective of this booklet to describe some of these features and to stimulate interest in learning more about them.

#### MAKING OF THE ROCKIES

Geologists believe that for vast ages prior to creation of the present Rocky Mountains, an ocean covered the region. On its floor, about ten thousand feet of sands, limes, and shales were deposited. Then, about 60 million years ago, great earth forces raised the floor of the ocean. Finally, land emerged, and continued to rise until there was a great land arch where the northern Colorado Rockies now are. This arch once may have been even higher than the present Rockies.



FROM THE NATIONAL PARK HEADQUARTERS NEAR ESTES PARK VILLAGE, THOMPSON RIVER VALLEY LEADS THE EYE UP PAST GLACIAL MORAINES TO THE ICE-CARVED GORGES AND LOFTY PEAKS OF THE FRONT RANGE.

Long-continued erosion removed the softer ocean-laid rock layers from the higher portions of the arch, exposing very old granites, schists, and gneisses which some geologists date back as much as a billion years to their origin. These old rocks compose the mountains as we see them now, with the exception of volcanic materials around Specimen Mountain. Only at the flanks of the foothills are there visible remnants of the beds of limestone, sandstone, and shale that once extended completely across the mountains.

For a long time after the older rocks were exposed erosion continued to wear them down. There may have been a general subsiding of the earth's crust over a wide area, also.

Finally, the land was reduced to not much above sea level. The surface was a rolling plain with low rounded hills here and there. Today the top of Trail Ridge and other parts of the summit of the range represent fragments of this old land surface which once lay at low elevation.

The next stage in the history of the Rockies saw uplift begin again. There may have been considerable periods of stability, but the uplift has continued, and most geologists believe that the land is rising today. About a million years ago, the Rockies looked very much as they do today except that the steep walls and deep gorges visible in the photograph at the top of page 3 were then quite ordinary V-shaped valleys. Then the Glacial, or Ice Age began.

Whatever complicated factors produced it, the Ice Age was characterized by periods of cooler and wetter climate. More snow fell than melted so that vast surpluses accumulated with time. This snow piled high in the higher valleys, and was compacted into glacial ice which moved down the previously established drainages with great erosive power. Rock was plucked from the walls and floors of the valleys were deepened by the gouging and grinding of masses of rock-studded ice moving over them. Later, when the ice melted away, the old V-shaped valleys had become the steep-walled gorges of today.

At about 8,000-foot elevations, the glaciers reached a point where melting at the front just about balanced advance of the ice. Rocks of all sizes and finer materials melting out at the edges of the ice tongue built up sizeable ridges. These are known as moraines. One of the most striking moraines in the park is at the south side of Moraine Park, where the Ice Age glaciers of the Thompson River drainage once lay. When the climate became warmer and the glaciers began to lose ground, lakes formed in some of the valleys between the retreating ice front and the rim of moraine ridges where the ice once lay. The outlet streams finally cut through the end moraines sufficiently to drain these lakes,

leaving flat valleys such as Moraine Park, Horseshoe Park, and Glacier Basin, which once were lake beds.

It is interesting to know that there were two, and possibly three or more distinct periods of glaciation, separated by long periods of climate probably much like that of the present. We may now be in an inter-glacial period, awaiting a distant time when rivers of ice again will fill the valleys of the Rockies. We have some small glaciers in the park today which geologists believe may be distinct developments of the last few thousand years, completely separate from and later than the ice streams that produced the moraines and valleys at the 8,000-foot level.

Each summer afternoon at 2:30, the naturalist on duty at Moraine Museum presents a brief talk on glaciers, using visible evidences in the landscape for illustration. Exhibits on phases of the geological story of the park are at both Moraine and Fall River Pass museums. "A Guide to the Geology of Rocky Mountain National Park" can be purchased for ten cents at museums or the Chief Ranger's office near Estes Park. "Rock Study Walks" are conducted in Moraine Park on regular schedule, and geology caravans are part of the naturalist program.

#### UPWARD TO THE ARCTIC

Ascending the slopes of high mountains one encounters climatic and environmental conditions progressively like those met with on a trip northward toward the Arctic shores of the continent. There is a rough formula that in Rocky Mountain National Park each 1,000 feet of altitude gained is the equal of 1,000 miles of travel northward. Thus in terms of climate and biological environments, one can drive about 20 miles and obtain the variety of biological experiences to be encountered on a trip of 4,000 miles to the northward at low elevations. That is the ultimate in tire and gasoline economy.

Biologists use the term "Life Zone" for a belt of environment occurring within a given range of latitude or altitude. Between the park entrances and the top of Trail Ridge, the motorist will drive through three of these life zones.

The Montane zone extends from about 6,000 feet in the foothills to around 9,000 feet of elevation in the park. The Subalpine zone extends upward from there to the limits of timberline, above which the rolling summits and higher crags comprise the Alpine zone. In the park timberline averages about 11,500 feet. The undulating level of timberline is a more acceptable boundary between the Subalpine and Alpine zones than any specific altitude figure.

The Montane zone is characterized by open Ponderosa pine-Douglas fir forests, denser on sheltered slopes where Lodgepole may replace Ponderosa as the pine species present. Colorado blue spruce, cottonwood, alder, birch, and in upper levels of the zone, aspen predominate in wet places and along streams. On suitable sites below 8,500 feet Rocky Mountain juniper, or red cedar occurs. Rocky ledges near the upper limits of the zone may bear considerable Limber pine. Shrub growth is abundant, forming an important browse resource for deer and elk. Antelope brush, squaw currant, and flowering raspberry are common shrubs. Wildflowers are abundant and varied, the season extending from appearance of Pasque flowers, Easter daisies, and Sand lilies in late March and early April until the last hardy aster surrenders to the persistent cold of late November. Tall pentstemons, Mountain loco, wild Geraniums, Shooting star, and Porter's aster are typical of the Montane zone, although they by no means dominate the varied show.

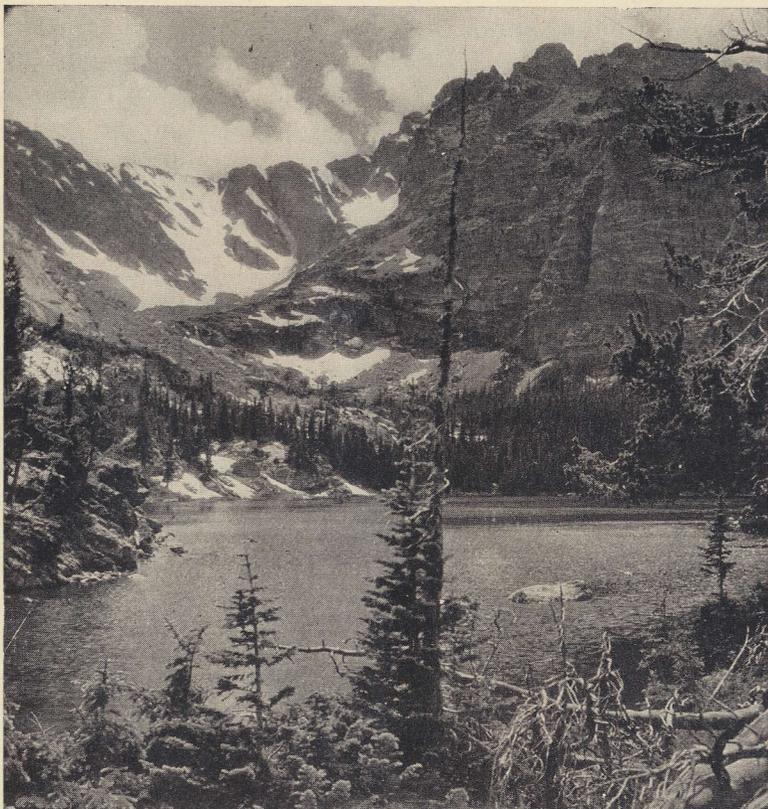
Subalpine is the zone of dense forest typically composed of Engelmann spruce and Alpine fir. On burned or devastated areas, solid stands of Lodgepole pine or aspen may occur. Limber pine also extends through this zone, some of the most grotesque trees at timberline being of this species. Within the wet forest, along streams and in small natural

meadows, riotous spreads of flowers thrive from mid-June until September. Globe flower, white marsh marigold, tall larkspur, monkshood, brook saxifrage, rosy paintbrush, ladies' tresses orchids, and rose crown sedum are typical. Gorgeous mountain ash and twinberry honeysuckle are common shrubs. In shadowed depths of the forest such rare floral treats as coralroot, pipsisewa, twinflower, pyrolas, and fairy slipper orchid are hidden.

Between 10,500 and 11,500 feet the Hudsonian subdivision of the Subalpine zone occurs. Here spruce and fir trees dwindle to twisted gnomes or prostrate mats, fingering into slopes about equally covered with dwarf willow thickets and open patches where plants typical of the forest meadows and streamsides join others common on the Alpine summits to form the most thrilling wildflower displays of the mountains. In this belt, Colorado blue columbines are most abundant, often appearing in albino color phase.

The Alpine life zone blends upward through the limits of timberline almost imperceptibly, but comprises a distinctive world of dwarfed forms on the rolling mountain tops. Wet and dry habitats vary from lush bogs to bare rock outcrops inhabited only by algae and lichens. Typical flowers of the region include alpine polemonium, rose clover, alpine forget-me-not, moss campion, alpine mertensia, snow lover, alpine buttercup, red elephant, alpine avens, and silver plumes. Dwarf willows send up tiny shoots from underground stems, the catkins sometimes being almost as long as the shoots bearing them.

Due to their mobility, animals conform less regularly than plants in distribution with relation to life zones. Some, such as coyote, cougar, weasel, marmot, golden eagle, and raven are cosmopolitan, living wherever suitable food occurs. Others follow regular patterns of seasonal migration. This is most marked in deer, elk, and Bighorn sheep, influencing to some extent the distribution of animals that prey upon them.



GLACIAL ICE WAS THE SCULPTOR THAT PRODUCED MAGNIFICENT LOCH VALE. TAYLOR GLACIER IS ITS SIGNATURE.

Despite exceptions and frequent unorthodox behavior, many animals are classifiable as characteristic of one of the life zones. A few are limited by specialized adaptations within the zones where they occur. Examples of this are Northern tuft-eared squirrels, which live only where there is Ponderosa pine, in the Montane zone; pine marten, a large weasel-like animal of the Subalpine zone which feeds largely upon Fremont squirrels and snowshoe hares; and ptarmi-

gan, a grouse that lives only above timberline, eating certain seeds and buds of the dwarf alpine willows.

Literature describing the approximately 700 flowering plants, the forest trees, the birds, and the wildlife of the park can be purchased at the museums. Wildlife exhibits are a feature at Moraine Museum. Naturalist talks illustrated in beautiful color are presented on biological subjects at program centers in the park. Schedules of these free activities are available at museums and are posted in many public places.

#### TRAIL RIDGE SIDELIGHTS

Things of considerable interest are often overlooked on the trip across Trail Ridge, the most popular activity of visitors to the park. This section of this booklet calls to attention some of the roadside stories and features worthy of attention along the way, as additions to pure esthetic enjoyment of the glorious scenery encountered.

Two approaches to Trail Ridge Road join at Deer Ridge, about 9,000 feet in elevation. Just inside both the Fall River and Thompson River entrances, the road climbs over terminal moraines of glaciers of the last period of major ice advance. At the right of the Thompson River entrance station is a low ridge of very old glacial moraine deposited in a period of glaciation earlier than that which formed Moraine Park. Just over the hill inside the Thompson River entrance, the road enters Moraine Park and passes Moraine Museum, which is worthy of at least an hour's visit.

Over the hill inside the Fall River entrance is Horseshoe Park, where elk may often be seen in late summer evenings. Bighorn sheep occasionally come to Sheep Lake, at the roadside in Horseshoe Park, to eat the succulent grasses and lick the mineral dirt around the lakeshore. Just beyond Sheep Lake, the old Fall River road branches off to the right. This is open for one-way travel up only, and for the person who wants the thrill of switchback driving through a beauti-

fully primitive forested valley, it is a splendid alternative route to Fall River Pass, from which return can be made over Trail Ridge Road. In this valley is Chasm Falls, an interesting and beautiful geological feature. Just beyond Fall River Lodge on this old road are sod-topped cabins used to house convicts who were used on the first work on this pioneer trans-mountain road, which was begun as a state highway prior to the creation of Rocky Mountain National Park.

At Deer Ridge junction, the real Trail Ridge route begins. About a mile above this point, the road enters Hidden Valley drainage, where numerous beaver dams and ponds may be seen near the road. Beaver lodges, dome-shaped heaps of mud and sticks, may be seen in some of the ponds. Entrances to the lodges are at the bottom of the pond, providing safe entry and exit for the beavers, even when ice is thick on the surface of the home pond. Beavers are active largely at night, so the motorist is not likely to see one. But many trees cut by beavers can be seen at the roadside. There are always many sticks bearing the tooth-marks of beavers floated down against the dams in beaver ponds.

Four miles from Deer Ridge junction is Many Parks Curve. Here one will see two kinds of small mammals, both quite tame, and easily photographed. The very small chipmunk has many stripes lengthwise on the back. Say's ground squirrel is larger with stripes only along the sides, the center of the back being of uniform color. Usually there is bright chestnut color around the shoulders. Both animals have the habit of loading their jaw pouches with food until they appear to have "mumps." Two species of birds are usually seen at Many Parks Curve. The long-crested jay resembles the Eastern bluejay in size and habits, but has black head and neck, and both male and female are crested. A somewhat larger gray bird with sharp black and white markings in wings and tail is the strong-billed Clarke's Nutcracker, whose frequent and noisy calls suggest its relationship to the jays and crows.

About 12 miles from Deer Ridge junction, the road penetrates a dense Subalpine forest. Pure icy water is led by pipes from snow-fed streamlets. A stop here to cool the motor may prevent vapor-locking in the feed line. While waiting for the engine to cool, step off the road into the deep forest below. It is like a world remote from everything, though the road is but yards away. Lush beds of blue chiming bells, golden ragwort, brook saxifrage, and other unusual or delicate flowers crowd around the little streams. Ruby-crowned kinglets sing from the treetops, harmonizing with the murmur of waters trickling through the tangled forest floor. In late summer, the luscious flavor of wild red raspberries may be enjoyed, or one may hear the chattered scolding of Fremont squirrels, whose refuse heaps of shattered cones can be seen on logs and rocks on every hand.

From Rainbow Curve, the next large parking area above Many Parks Curve, is a commanding view eastward. In the distant haze the pattern of the Great Plains extends to infinity on the horizon. Closer below is a fascinating geological story on the landscape. Ice once lay in Fall River valley as deeply as the crest of the ridge which lies just to the left of the road course below, and this ridge is, in fact, a moraine deposited along the south edge of the ice tongue that filled the valley. Before the glacier formed, Hidden Valley, which comes in from the right, flowed directly into Fall River. After the ridge of moraine was deposited across the mouth of Hidden Valley, the stream was forced, in post-glacial time, to "detour" eastward behind this ridge for some two miles before finding a low place in the ridge, where it breaks over and finally reaches the Fall River in lower Horseshoe Park. It is easy from this point to visualize Horseshoe Park as the flat glacial lake-bed it is, with the rim of forested moraine ridges encircling it on both sides and at the eastern end.

Another interesting bird frequently is seen at Rainbow Curve. It is smaller than Clarke's Nutcracker and uniformly

gray except for lighter tone on the top of the head. In flight, it sideslips when approaching to light. This is the Canada Jay or Camp Robber. The latter name derives from its friendly, or even thieving habits around picnics and camps in the mountains.

About a mile beyond Rainbow Curve, a short walk among wind-blasted timberline trees will reward the camera fan with shots of some of the most photogenic outpost trees in the park.

For several miles above timberline, a sharp watch should be kept in both directions for herds of red-coated elk feeding on the alpine meadows.

Five miles from Rainbow Curve is the "Rock Cut," at 12,110 feet in elevation. In rock slides below the retaining wall conies are almost always seen. They are rabbit-colored rodents smaller, but shaped like Guinea pigs. They harvest and store hay in rock crevices, enabling them to remain active during winter when "less provident" chipmunks, mar-



HORSEBACK RIDING OVER SOME 200 MILES OF TRAILS IS A POPULAR PASTIME.

mots, and ground squirrels are inactive or in hibernation. The conies' nasal squeaks call attention to them, even though their coloration blends with that of the rocks.

From the "Rock Cut" parking area a path marked by rock cairns leads about 600 yards to a peakfinder on Monument Ridge, from which one can identify the prominent features of a wide panorama. Near the peakfinder ptarmigan often are seen. This high-country grouse is white in winter, but its summer plumage matches perfectly the lichen-spotted rocks among which it wanders. Marvelous natural gardens of alpine wildflowers line the path to the peakfinder.

At almost the exact center of the skyline at the head of the lake-studded gorge across Forest Canyon from the "Rock Cut," is a snow-pocket which nestles the highest lake in the park, and one of the highest in the Rockies, at 12,400 feet. It is never free of ice.

The entire dome-like summit near Iceberg Lake, including the walls that tower over this attractive lakelet is composed of volcanic rocks completely different from the schists, gneisses, and granites observed along the road to this point. This volcanic material flowed from Specimen Mountain, about four miles to the west, when that mountain was an active volcano sometime during the geological periods that saw the present Rocky Mountains uplifted.

Two miles beyond Iceberg Lake is Fall River Pass Museum, in a building that also houses a lunch and gift shop and comfort facilities. This Museum has exhibits on geology and alpine birds and mammals. Publications pertaining to the park may be obtained here. Short naturalist-conducted walks for observation of features of the high country are scheduled at this point.

Between Fall River Pass and the continental divide at Milner Pass mule deer are frequently seen. Lush beds of Subalpine wildflowers, including some of the most wonder-

ful displays of the attractive Rosy Paintbrush to be found anywhere occur in glades among the trees beside this stretch of the road. If there are binoculars in the car, scanning the slopes of Specimen Mountain across the valley to the right may reveal small bands of Bighorn sheep grazing on Alpine meadows. Just beyond the continental divide on the left of the road is a rock promontory which also is a favorite spot for Bighorns. Rose quartz outcrops on this point.

It is interesting to note that to reach the continental divide, the road has descended over six miles from the high elevation of 12,183 feet near Iceberg Lake to the divide elevation of 10,759 feet. The divide does not conform to the highest points, but weaves in a general north-south direction between the heads of stream drainages which lead on one side to the Atlantic waters and on the other to those of the Pacific.

At Far View Curve, 1.7 miles below Milner Pass, is a close-up and commanding view of the Never Summer Mountains across the valley of the Colorado River. The continental divide runs from Milner Pass across Specimen Mountain, loops around the headwaters of the Colorado River, and extends southward along the crest of the Never Summers. Incidentally, this headwater branch of the Colorado River was once known as "The North Fork" (of the Grand River, which was credited with its source in Grand Lake). Due to disputes as to what was the Colorado River and its true headwaters, after the old Grand River was re-named, an Act of the Colorado state legislature, March 24, 1921, and an Act of Congress, July 25, 1921, officially established the stream heading at Poudre Pass northwest of Specimen Mountain as the Colorado River. The stream draining Grand Lake then became officially known as "The Outlet." The Outlet lies beneath the waters of Shadow Mountain Lake, artificially created in connection with the water diversion from Grand Lake to Wind River.

Across the valley from Far View Curve, on the slope of

the Never Summers is a cleared line that appears to be a roadway. This is a diversion ditch built long before the Never Summer addition was made to the park in 1930. It carries water from the Pacific-drainage slopes of these mountains, and empties it across the continental divide to supply irrigated lands around Ft. Collins. Futile search for paying ores in the 1880's brought small settlements of prospectors into the Never Summers and the headwaters of the Colorado River. Prospect diggings are visible to the discerning eye. Despite man's activities there, the Never Summers today are wild, primitive, fascinating mountains, worthy of the time and energy required to explore them.

Inside the Grand Lake entrance, a road leads to the left. At Grand Lake Lodge, a half-mile away, is one of the finest views of the lake itself in its expansive setting. Grand Lake is over 260 feet deep, the result of glacial deepening and damming combined. A 13.1 mile tunnel takes water under the range from Grand Lake and the Shadow Mountain and Granby reservoirs to the Wind River portal near the YMCA Conference grounds on the east slope. This amazing engineering feat is part of a vast irrigation-power development of the Bureau of Reclamation.

On Shadow Mountain across the lake, a fire lookout station is visible. From here, vigil is maintained over west slope forests during fire season. A good trail leads to this lookout.

#### TRAIL TRIP SUGGESTIONS

For those having time for but one half-day or leisurely luncheon trip, one of the short hikes from Bear Lake or nearby Glacier Gorge parking area is suggested. Dream Lake via Nymph Lake is one mile each way by high standard trail. Loch Vale and Lake Mills each are 2½ miles one way by good trails. Persons lacking transportation to Bear Lake may prefer a hike to Gem Lake, a two-mile walk by good trail from the Devils Gulch Road near Estes Park. The Gem Lake trail affords impressive panoramas of the entire Front Range.

If one has but one day for a longer hike, the trip from Bear Lake via Odessa and Fern lakes to the west end of Moraine Park is recommended. This involves 9 miles of hiking, six of it downhill, and takes advantage of the features of all three life zones of the park plus varied scenery including some of the finest alpine and forest-rimmed lakes in the park. The trip requires transportation to Bear Lake to start and at the end of the trail a mile west of the Brinwood Hotel in Moraine Park. If the hiker leaves Bear Lake about 8:00 a. m. and has lunch at Odessa or Fern Lake, he should reach the end of the trail about 4:30 p. m., and can arrange to be met at that time.

If there is more time for hiking or riding, Wild Basin, the Mummy Range, and the country north and east of Grand Lake contain many beautiful and varied scenic objectives. The upper Colorado River valley and the Never Summers offer alluring wilderness and pioneer historical attractions.

Climbing Longs Peak is a never-to-be-forgotten experience. Guides may be obtained, or the hike can be made independently by seasoned outdoorsmen. For more information, call at the office of the Chief Ranger. Free tables of trail distances are available at park museums.

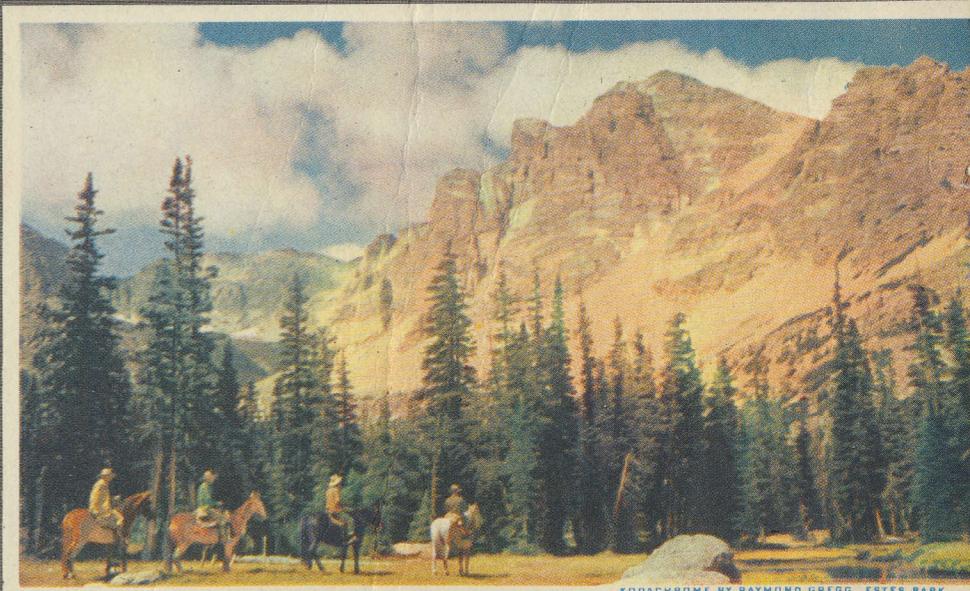
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J. BARTON HERSCHLER, ESTES PARK

*The wild fastnesses of the northwest corner of the park are typified by the Never Summer Mountains as seen here from Long Draw.*



KODACHROME BY RAYMUND GREGG, ESTES PARK

*Ogalalla Peak, astride the southern boundary of the park, from the "Vale of Enchantment" on the Middle St. Vrain.*

