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Note-In the appended list of county officials the first name in each county is that of the county clerk, the second name is that of the county surveyor, and the last three names are those of county commissioners.

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nison; C. L. McDonald, Gunnison.

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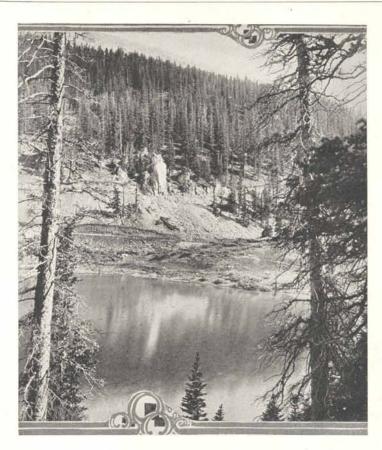
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Poudre Lake, on Continental Divide on road from Grand Lake through Rocky Mountain National Park.

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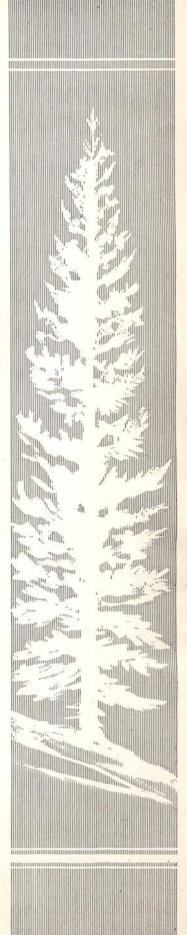
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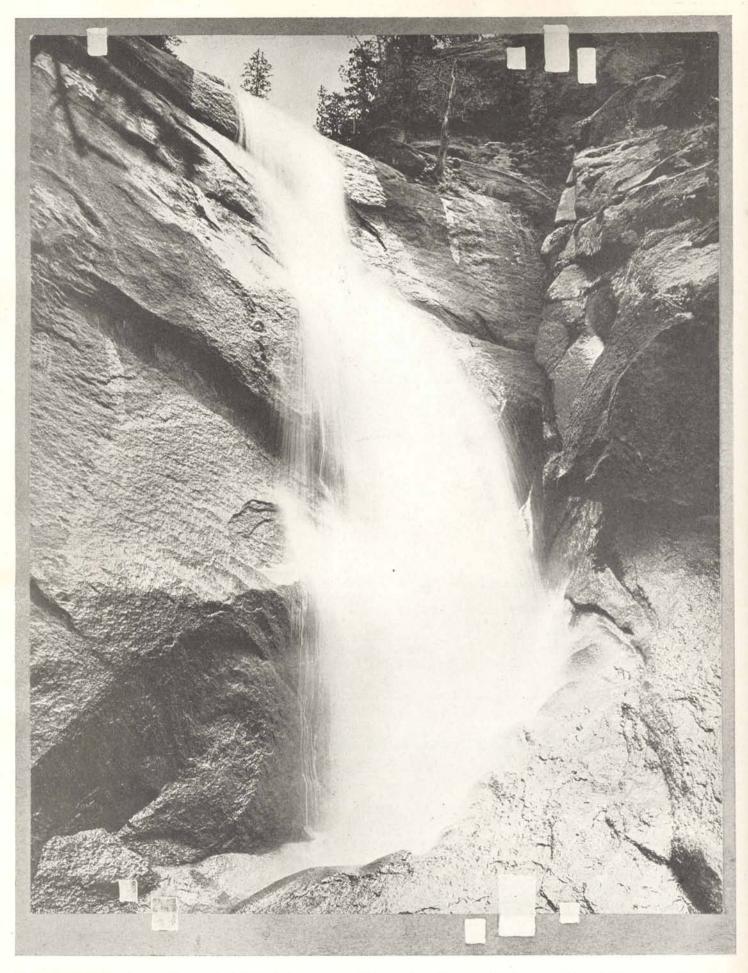
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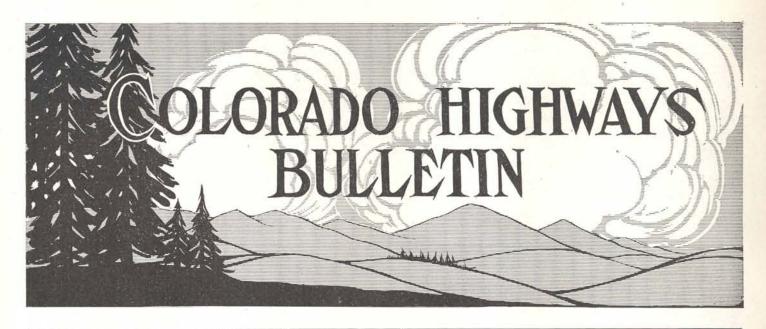
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Lake Creek Falls, three miles west of Twin Lakes on new Independence Pass road to Aspen. This point is now easily reached from Denver over a road that is good practically all the way and is well worth a visit by any nature lover. The distance from Denver is 165 miles.



VOL. II OCOTBER, 1919 NO. 10

Mountain Roads Inspected by Commissioner

800-Mile Motor Trip Discloses Progress on Many Road Building Projects in Colorado. Good Headway is Being Made on Such Important Roads as That to Independence Pass and from Grand Lake to Rocky Mountain Park. Observations En Route Make Trip One of Educational Value.

N order to inspect certain important roads now being built in Colorado, including those across the Continental Divide by way of Independence Pass to Aspen and from Grand Lake into and through Rocky Mountain National Park, as well as some twenty Federal Aid projects of importance, two State Highway Department officials recently made an 800-mile motor trip westward from Denver. Except for the 32-mile round trip from Denver to the foothills, every mile of this remarkable journey was in the mountains. The "Backbone of the Continent" was crossed five times at altitudes varying from 9,400 to 11,300 feet, and roads good, bad and indifferent were encountered. State Highway Commissioner Thomas J. Ehrhart was at the wheel of the highway commission's car over the entire distance and proved himself an accomplished driver under all circumstances.

Although most of the trip was made over District No. 5 of Commissioner Robert H. Norvell, portions of District No. 1, E. E. Sommers, commissioner, and District No. 2, E. E. Nichols, commissioner, were also traversed. Five national forests and fourteen Colorado counties, most of which are as large individually as an average New England state, were included in the itinerary.

The party which made this 800-mile exploration trip consisted of State Highway Commissioner Thomas J. Ehrhart, Chief State Engineer James T. Maloney, Editor J. G. Hilliard of the State Highway Bulletin, Staff Photographer K. P. Howe and W. Pyke Johnson, Washington representative of the National Automobile Chamber of Com-

merce. Mr. Johnson is former editor of the State Highway Bulletin.

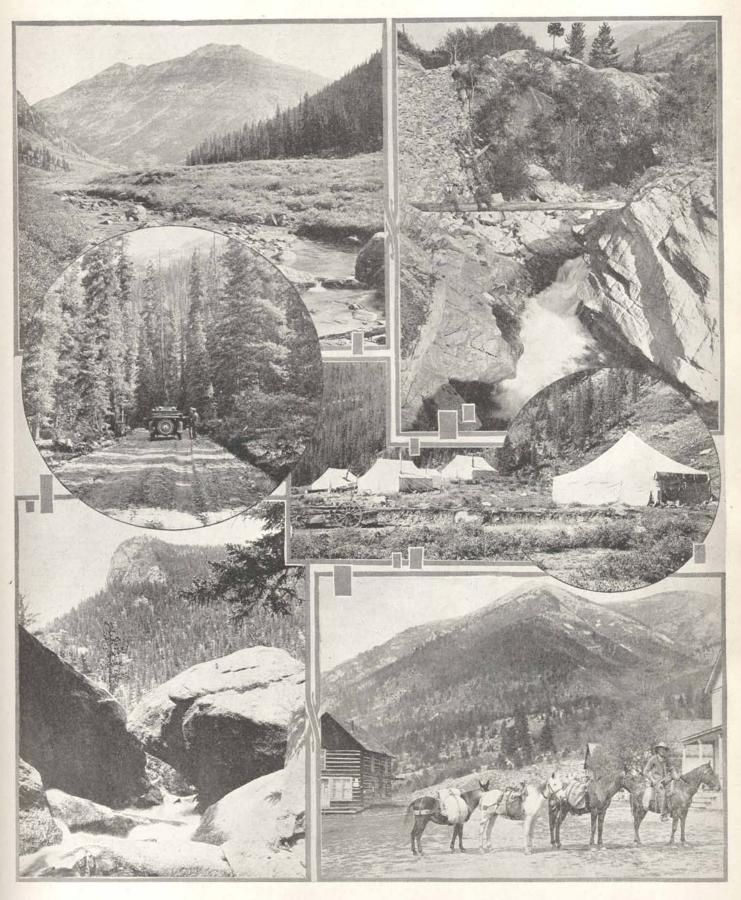
Leaving Denver Saturday morning, August 23, at 9 o'clock, the party was complete with the exception of Chief Engineer Maloney, who was picked up at his home in Littleton, ten miles to the southward, 20 minutes later. The next stop was made at Platte River Bridge, on the western outskirts of Littleton, where a comfortable coterie of campers attracted attention. Investigation proved them to consist of two men and their wives from Springfield, Ohio, who had "done" the mountain parks near Denver and were prepared to start on their 1,600-mile journey homeward on the following day. Having just finished breakfast, they were adjusting rod and reel in an effort to coax a succulent South Platte trout or two into a strike. Inasmuch as this party appeared to be skilled and practiced campers, their pictures were taken, as illustrative of the possibilities for "living out" in the immediate neighborhood of the smaller cities surrounding Denver.

"Colorado roads are better than those of Missouri and Kansas," declared Mr. Frank McCullough, one of the men of the party, "although the roads in those states are not bad except when it rains. When that happens, one might as well tie up until the precipitation is over."

It was a case of "Westward, Ho!" for the "Highwaymen," so they struck out with their backs to the rapidly rising sun toward Turkey Creek Canon, the narrow defile through which is soon to be built a first class road by state and government collaboration. En route, the commissioner



Summer camping in and near the Rockies is a favorite pastime of Easterners. Upper left, Mr. and Mrs. Frank McCullough and daughter and Mr. and Mrs. James Baxter of Springfield, O., camping on the South Platte at Littleton, Colo. Center, Miss McCullough fishing. Lower left, Mr. and Mrs. T. B. Johnson of Whatcheer, Ia., and Mrs. H. L. McMannamy of Denver camping between Rabbit Ear and Walden. Upper and lower right, campers in free municipal grounds, Rocky Mountain Park, Denver.



Scenes in the rugged Rockies which dominate the Twin Lakes country and along the road being built by the Highway Commission from the lakes over Independence Pass to Aspen. Mt. Champion and Lackawanna Gulch from head of road work. At right, Johnson and Hilliard courting calamity on log over roaring Lake Creek while a mink grinned from the bottom. Center left, lodgepole pines near Harlan's camp; at right, Harlan's camp. Below, Lake Creek, Sheepshead Rock; outfit bound for sheep camp.

took his passengers past Lake Marston of the old Denver Union Water Company, now taken over by the city and operated as one of the departments of municipal government. City employees were pursuing their annual pastime of combing the accumulated kelp from the water, in order to remove from Denver's domestic supply as far as possible the "fishy" taste and odor which characterizes the water when the kelp is at its longest growth, in August and September. It was the yearly fight against Denver's fresh water seaweed.

The diversion to Littleton and Lake Marston made the distance to the mouth of Turkey Creek Canon, some three miles south of the town of Morrison, twenty-six miles. This is a beautiful canon, which will eventually be as well known as any of the gateways to the Rockies near Denver. It is parallel with Bear Creek Canon, which is from three to five miles farther north and is part of the circle trip through Denver's famous municipal mountain parks. The excessive motor traffic over the mountain parks is bound, however, to divert a heavy volume of travel to Turkey Creek, which is quite as beautiful, when the projected road is completed up the latter canon.

Turkey Creek is the nearest route from Denver to the wonderful South Platte Valley and Canon, and is bound to be as important a route commercially as it is scenically. The present road is narrow and for the most part unimproved, but is traversible and this summer has accommodated the traffic of thousands of automobiles, probably as many as a hundred daily, on the average, since June 15. The new road will be built by the state with federal monetary assistance, for it is a post road and the development of the region, especially from a summer cottage standpoint, may be expected to follow rapidly, after the manner of Evergreen Heights and Troutdale on the nearby Bear Creek road.

After passing Beaver Creek Ranch and Clifton Farm, the divide between Turkey Creek and Elk Creek, which flows into the Platte, was crossed and the descent to the level of the latter stream begun. At 42 miles Conifer was reached and at 47 Shaffer's Crossing, the junction with the road from Bear and Cub creeks and Evergreen to the north and beautiful Elk Creek Canon, which takes one to the town of Pine on the South Platte, to the south. Keeping straight ahead, however, the "highwaymen" came out at noon at Baileys on the Platte, which the speedometer showed 57 miles from Denver. Ten miles should be deducted from this mileage for direct, on account of the diversions to Littleton and Lake Marston.

The Jefferson-Park County boundary was passed near Shaffer's Crossing, and the fine road entered upon the Park County side was only indicative of what was discovered to be the rule for the approximate 100 miles to be traversed later in that county. It was no difficulty whatever to roll down "Crow Hill" into Baileys at 30 miles per hour, having negotiated the distance from Denver in three hours, despite stops at the Platte River Bridge and at Littleton and losing 20 minutes in a two-mile detour in getting away from Marston Lake. The road from Shaffer's

Crossing to Baileys is extremely beautiful, with its lining of silver spruce, quaken aspen and pine.

At Bailey's luncheon was eaten and the trip westward up the Platte Valley was resumed at 1 p. m. At Glen Isle, two miles distant, the speedometer showed 59 miles, at Grousemont 61 and at Shawnee 63. At the 66-mile point is the elegant home of Commissioner Singleton of Park County, in a fine setting by a pretty lake. To this official's enterprise are due the good roads which we had traversed for twenty miles and were destined to enjoy for a much greater distance.

Proceeding up the valley, Cassell's was passed at 68 miles and Grants, the last point in the valley or wide canon, at 69. Although the Platte Canon was developed and dotted with numerous resorts, even below Baileys, by the building of the South Park Line of the Colorado & Southern Railroad some 40 years ago, inadequate train service and practically no roads until comparatively recently have kept it from becoming what it deserves to be—one of the most popular resort and summer home districts in Colorado.

It is now accessible, however, from Denver by a road which Park County has made very good at the west end, and, as heretofore noted, the Turkey Creek Canon Road, the connecting link between the Denver-Morrison Road and the Park County Road, from near Shaffer's Crossing to Baileys and by Elk Creek Canon to Pine, has already been approved as a Federal Aid project and will probably be built next year. Then, with Denver connected with Platte Canon by a perfect automobile road, the Valley of the Platte will flourish as never before. It is also reached from Colorado Springs by way of Ute Pass, Woodland Park, Westcreek, Decker's and Gill's by a wonderful scenic road. There is also another route from Denver, that by way of Salida, the new Jarre Canon Road, Decker's, Gills and the cutoff from the latter place, situated on the south branch of the South Platte, to Buffalo, two stations east of Baileys, and Pine, one station east.

That a road will be built straight down the South Platte Canon by way of the Denver Union Water Works and Littleton is practically assured, but this road has not as yet been approved as a state, county or Federal Aid project. This road will be, when built, tremendously scenic and of great value commercially.

But the travelers who figure in this recital had arrived at the farther, or western, end of the beautiful canon and crossed over the top of it into the fertile South Park. At 2:15 they met the eastbound South Park passenger train, bound on its tortuous way from Leadville to Denver, and two miles farther along, or at the 82-mile point, passed the "Lazy-H" Ranch. South Park is dotted with hay and cattle ranches and is flanked on the west and north by the snow-covered peaks of the Continental Divide. It is a scene of indescribable beauty, and its level floor, dotted with myriad hay stacks, gives evidence of wondrous plenty. The finest hay and "feeder" cattle of the world are grown here.

At 82 miles is the junction with a road to Colorado Springs, Jefferson being the name given the postoffice nearest the meeting point of the two roads on the east and Como being immediately west. A sign board avers that the distance to the Springs is but 78 miles from this point, that to Denver being about 72, without detours such as were made on this trip. This road to Colorado Springs joins the Pike's Peak route 40 miles west of the Springs and 34 miles west of Manitou at the head of Ute Pass near the town of Florissant.

Passing through the town of Como, where is the junction of the South Park Railroad line with its branch to the old mining camp of Fairplay, the county seat of Park, the road passes just to the west of that city and the Antero Reservoir. This huge artificial lake is a grand sight, as viewed from the road, two miles westward. Its capacity is 60,000 acre-feet of water and from the flood waters which it imprisons are irrigated thousands of acres of land in the vicinity of Denver, nearly 100 miles distant by water line, the South Platte River being the medium of conveyance.

It was still Park County and roads continued good, bearing evidence of recent careful work. At Antero the record showed 117 miles from Denver and where the line was crossed into Chaffee County, 125 miles. Roads continued good to Buena Vista, where the mark was 142 miles, indicating that the Chaffee commissioners also have been busy. The Marmon of the Highway Commission flew into Buena Vista alongside the first section of Denver & Rio Grande No. 1, the crack Pacific Coast train of that railroad, which had left Denver at 8:15 a. m., or 45 minutes ahead of the automobile. The railroad route is by way of Colorado Springs, Pueblo and the Royal Gorge and is considerably longer than the route taken by the automobile. Nevertheless, the highway folks had stopped a total of two hours en route and had detoured ten miles at the start of their journey. The inevitable conclusion is that Colorado's mountain roads are not so bad, when an automobile can beat a limited train across the backbone of the continent.

At the 160-mile point, Granite, on the line between Chaffee and Lake counties was passed, and five miles farther the main road to Leadville was left to the eastward and the detour to Twin Lakes taken. This magnificent combination of lakes, mountains and sky was reached at 5 p. m., the speedometer showing 170 miles from Denver, from which should be deducted the ten miles detoured for actual distance. The trip from Denver had been made in total elapsed time of eight hours and could easily have been accomplished in two hours less. It is one of the most beautiful trips out of Denver and all too few people know the delights of the trip and the extraordinary scenery at the end.

At Twin Lakes the travelers bivouacked for the night at the well-conducted little hotel of Mrs. Foxall. The beauty of a sunset on Twin Lakes must be seen to be appreciated. Some of the highest peaks of the Rockies o'ershadow these two marvelously Siamesed bodies of water, each of which is three miles long and half as wide. The 14,000-foot baldy granite craniums of Elbert, Faith, Hope and Perry are the most conspicuous, although on three

sides are these opalescent bodies of water hedged about by the high peaks of the Continental Divide, rising sheer from their clear surfaces. Tourists gasp and even the hardened Coloradoan who has seen almost everything else in the way of mountain scenery is forced to confess that he has at last found the cap sheaf of the shock. Then he usually volunteers, "What a grand place for a fine hotel."

The principal reason for Twin Lakes' comparative isolation up to this time is its remoteness from the railway, which runs no nearer than Granite. But the automobile stage now connects the two places and the roads are good and, then, nearly everyone motors all the way from metropolis to mountain in these days. The day of lovely Twin Lakes is at hand. The world will no longer be denied.

(Editor's note: Up to this point, ten miles should be deducted from all distances recorded, on account of the detour to Littleton and Lake Marston, before reaching the mountains. Other detours will be made which will be noted further along in the narrative.)

Sunday morning, August 24, at 7 o'clock the temperature at Twin Lakes was 40 degrees, having dropped to that point from 75 degrees during the night. The altitude of the Lakes is 9,500 feet and air and sleeping conditions are ideal. Commissioner Ehrhart decided to make a 28-mile round trip detour to inspect the work being done by Superintendent E. B. Harlan on the road to Independence Pass, on the route to Aspen. A good road was found up Lake Creek west of Twin Lakes and a number of pictures were made by Photographer Howe on the way to the Harlan camp. Lake Creek is a beautiful stream and the road over Independence Pass is bound to prove immensely popular with tourists and invaluable for commercial purposes when it is finished, which will be next summer.

Superintendent Harlan had done so much good work on either side of Twin Lakes that the Highway Commissioner was prepared to see some interesting activity where his crews were working at the farthest west. Harlan's men are now "finishing up" the road at Timberline, for Independence Pass is 12,800 feet, one of the highest in the state. The superintendent conducted the party to his camp, at the foot of Lackawanna Gulch, famous for its mineral production, where the survey turns in a series of "hogbacks" to ascend the real Continental Divide to the pass, five miles farther west. Aspen and Independence towns are the main objectives, although for scenery the road will be unexcelled. Work in the immediate future consists of cutting through granite walls that look to the unpracticed eye to be impregnable.

At the Harlan camp are several of the state's recently received government surplus war material trucks and air compressors, ready for the heavy work ahead. Close to the present terminus of the road in Lackawanna Gluch are the Beeler mine and mill, at an altitude of 12,000 feet, and towering above them on Mt. Champion is the Champion mine, which has produced a fortune and is now being worked actively at the extraordinary height of 13,500 feet above sea level.

Harlan declared that he would be able to work until October 1 at the great altitude at which the Independence



On fence, Miss Ruth Stewart, Mercedes, Tex.; center, Miss Warren, Mercedes, Tex.; right, Mrs. Mary McDonald, Twin Lakes. Fair Mountain Climbers at Twin Lakes.

Pass Road then found him. He will then remove his outfits to Twin Lakes for additional work on the road from that place to Granite. Everywhere that this man operates he produces some of the best roads in the state, no matter how rough or how steep the going.

The long narrow glade of Elk Creek showed at its best as viewed by the scouting party from the bridges on that sunny Sunday morning. Several pictures were taken, each view more alluring than the last. It was with regret that the party returned to Twin Lakes to resume the more prosaic journey across the "cut-off" to the Buena Vista-Leadville Road. A stop was made for a picture of Lake Creek Falls, with Johnson and Hilliard in perilous position astride a log which spans the creek directly over the falls, while a mink grinned from the swirling, shaded waters below.

Commissioner Ehrhart and Chief Engineer Maloney began to vision dreams of a magnificent three-day circle trip from Denver to this extraordinary region. With the completion of the Independence Pass Road, what a drive it will be from Denver by way of Baileys to Twin Lakes and Independence Pass, then doubling back to Buena Vista and returning by way of Salida and Canon City, thence to Colorado Springs and Denver, whether by the Phantom Canon and Cripple Creek or by the convict-built road around Cheyenne Mountain and Broadmoor!

Ten miles west of Twin Lakes on this detour is obtained a splendid view of the Three Sisters Mountains. A picture was taken by Mr. Howe. The girls are very , speedometer register of 215 from Denver), or in 40 min-

tall, averaging 13,500 feet, and the "one in the middle" has a face. Here also was discovered "Maloney's Peek" (Peak), a fine mountain said to have been thereto unnamed, but which will hereafter glory in the fact that the chief engineer is its namesake. Also a picture was made in a sylvan glade of heavy hemlocks, through which the new road runs, just below timberline.

Interesting incidents at Twin Lakes, as viewed by the highway scouts upon their return from Harlan's camp, were the arrival of a party of Texas tourists who had left the path beaten by the railroad to seek the superior and more isolated grandeur of Twin Lakes, and the departure of a horse and burro pack train for a sheep camp on Little Willis Mountain, where the sheep munch the mountain grass and wax fat at an altitude of 13,500 feet. This is said to be twice the altitude at which sheep are raised profitably in Switzerland.

Twin Lakes was left behind for the second and last time at 11:30 Sunday forenoon, with Leadville as the luncheon objective. At departure the speedometer registered 198 miles, 24 miles of this distance being represented by the detour to Harlan Camp, and making a total of 34 to be subtracted to determine actual distance from Denver. From this detour total should be taken six miles representing the difference in the road direct from Granite to Leadville and the detour to Twin Lakes, leaving 28 miles as the detour total.

Leadville was reached at 12:10 p. m. (17 miles, or a



"Bughole" Rock, a remarkable volcanic formation six miles north of Meeker. Altitude, 6,829 feet.

utes from Twin Lakes. The Midland Trail or Pike's Peak Route, which connects with the cutoff from Twin Lakes at the Half Moon Dredge, is, from Buena Vista to Leadville, one of the best roads in Colorado. The Marmon had no difficulty in negotiating 45 and 48 miles per hour over this road. In fact, Park and Lake County roads had been uniformly good everywhere.

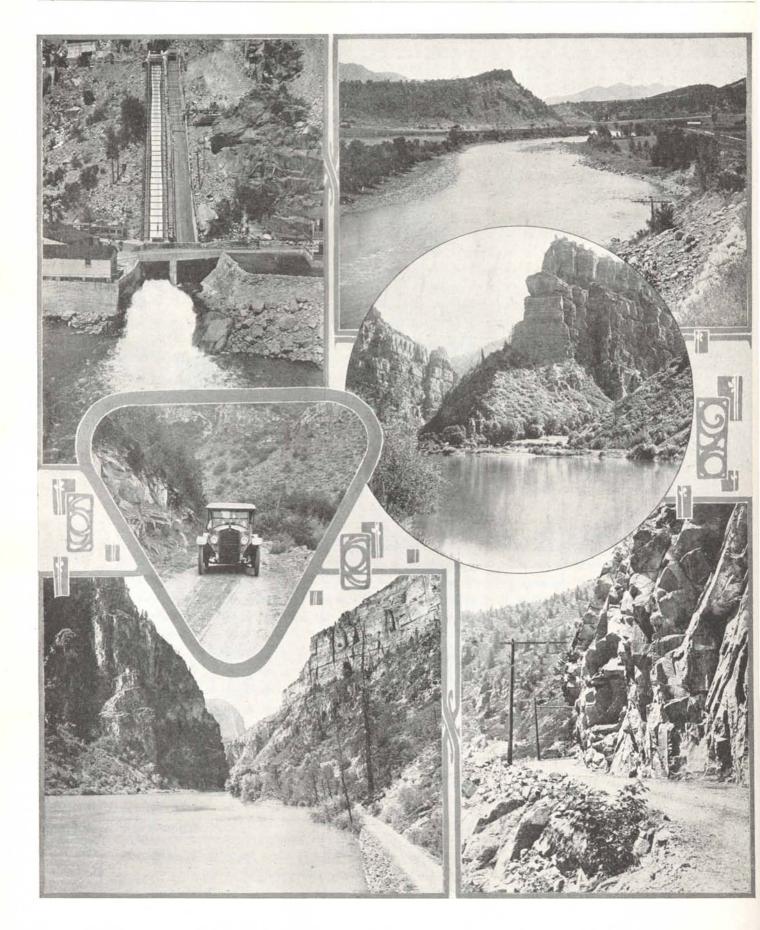
At Tennessee Pass (10,500) the speedometer showed 225 miles from Denver, or about 197 actual distance. To Grand Junction the distance from the pass is 186 miles and to Colorado Springs 141. The pass marks the boundary between Lake and Eagle counties and the point where the waters run two ways, down the Atlantic and the Pacific slopes. Down the canon of the Eagle River the road runs to Red Cliff, the county seat of Eagle. Past the town of Gilman, three miles west of Red Cliff, there is now being done some of the most interesting, difficult and important road work in the state.

The present road from Red Cliff to Minturn, still further down the Western Slope, runs up the precipitous gorge of the Eagle to the town of Gilman and through it. The bottom of the canon is monopolized by the Denver & Rio Grande Railroad, whose "double track" occupies the bank on either side of the river. There is not room on either side for an automobile road, so the highway has to seek a line some place up the mountain side. As now traveled the road is tortuous and dangerous, hanging like a narrow thread 2,000 feet sheer over the river, with tremendous grades and very sharp curves.

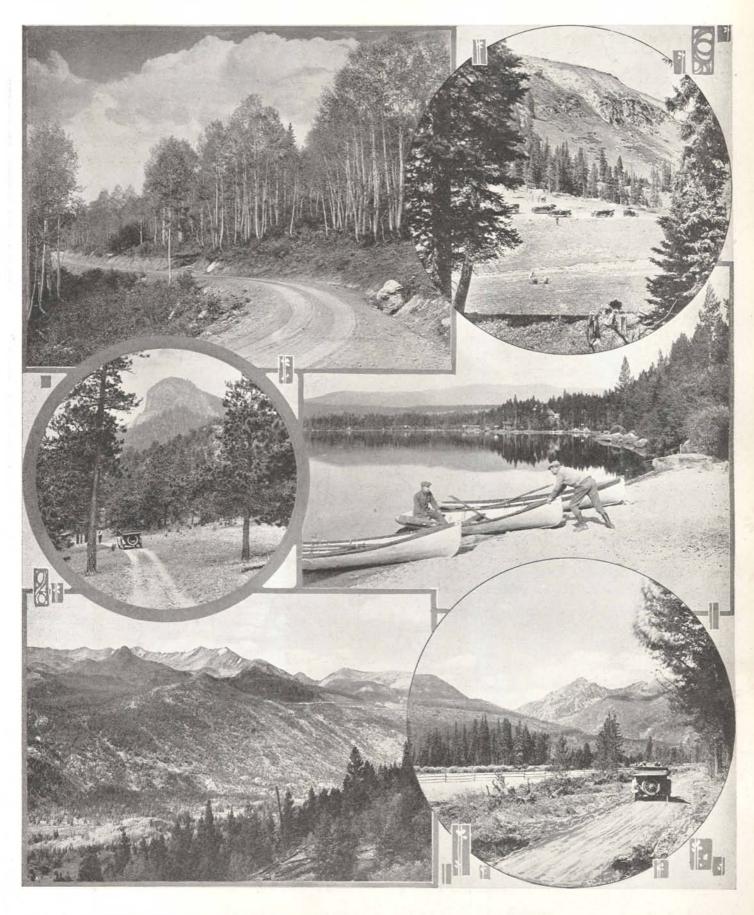
A line for a new road which will eliminate a considerable portion of both grades and curves has been run by Engineer H. L. Jenness, formerly in the office of the Highway Commission and now one of its outside men, since his return from France, where he was for more than a year with the 109th Engineers. County Commissioner Michael Walsh of Eagle, who has done some very difficult and commendable road building, is in charge of the work on the Gilman Road, which is exceedingly heavy. Engineer Jenness' line runs through the granite wall of the canon and atop of ledges over which it would not seem possible to build a road. The new survey runs from Red Cliff past Gilman almost to Minturn, and is six miles and 200 feet in length.

A cold rain descended on the travelers from Tennessee Pass to Gilman. The rain on top of the backbone of the continent is never warm, even in August. The impersonal "it" always tries to snow, and usually succeeds, in any and every month of the year.

Minturn, 224 miles from Denver, actual distance, is a division point on the Denver & Rio Grande Railroad and interesting farms of high altitude hay and wheat dot the hillsides of the Eagle above it. A picture was taken of a farm a mile above the city and almost "straight up." There were in the yards strings of thousands of refrigerator cars, for reasons known, presumably, to the railroad company. The state engineer assisted the agile photographer to the top of a car in the second string as a proper vantage point for his "hay picture." (Cont. on page 17.)



Scenes in Glenwood Canon and along Grand River. Upper left, spillway of Colorado Power Company, five miles above Glenwood Springs. Upper right, stretch of the Grand between Glenwood and Rifle, road showing at right. Center left, Commissioner "Bob" Norvell's Essex car in canon. Right center, Castle Rocks in Glenwood Canon. Lower left, upper portion of canon, where new road has not reached. Lower right, new road in lower part of canon, accessible from west end.



Roads in the vicinity of some of Colorado's marvelous lakes. Upper left, road from Twin Lakes to Independence Pass (uncompleted). Upper right, lunch hour on Berthoud Pass (timber line), August 29, 1919. Left center, rock above timber line near Twin Lakes. At right, two editors off for a row in Grand Lake, August 29, 1919. Lower left, Continental Divide from new road from Grand Lake to Estes Park; mountains in Rocky Mountain National Park as seen from road north of Grand Lake.

Forestry Presents Colorado Roads Scheme

Service Proposes to Expend \$390,000 on Important Highways in State in 1920, Including Road Over Berthoud Pass, Disclosing Program at September Meeting of Highway Commission, Which Body Adopts Interesting List of Federal Aid Projects and Transacts Other Important Business.

A S part of its plan for 1920 the Forestry Department of the United States Government proposes to expend \$390,000 on important road projects in Colorado. The scheme of the Forestry Service for next year includes the Hardscrabble road (Silver Cliff to Pueblo) the road over Berthoud Pass, the Crested Butte-Somerset road and the Red Mountain—Ouray Road.

This plan was disclosed at the September meeting of the Colorado Highway Commission and is given in detail below.

Other important business transacted at the meeting was the adoption of ten new Federal Aid projects calling for a total appropriation by the state of \$315,000, to be divided among the following roads: Burlington south, Limon east, Divide towards Lake George, Salida north and south, Kiowa west, Cheyenne Wells west, Colorado Springs north and Colorado Springs to Canon City, to Cripple Creek and to Manitou.

The regular meeting of the State Highway Commission was held at the Capitol, Monday, September 8, Chairman E. E. Sommers presiding. There were present Mr. Goble, Mr. Radford, Mr. Nichols, Commissioner Ehrhart and Secretary Ballou.

A resolution was unanimously carried, that \$220.67 be appropriated to Clear Creek County to pay the final amount due August Swanson for work on the Georgetown-Silver Plume road, State Highway No. 56.

Mr. Mendenhall of the United States Forestry Department submitted to the Highway Commission a tentative plan for the year 1920. The projects outlined for improvement are as follows:

No. 1—The Hardserabble road from Silver Cliff to Pueblo, at an estimated cost for the improvement of \$40,000.00.

No. 2.—Berthoud Pass, cost of improvement \$200,-000.00

No. 3.—Crested Butte-Somerset road, cost of improvement \$90,000.00.

No. 4.—Red Mountain-Ouray, cost of improvement \$60,000.00.

As alternative projects, the following are such that they would be considered by the Forestry Department:

The improvement of the Poudre River road.

The Delta-Nucla road—\$95,000.00.

The Independence Pass road, and

The Antonito-Cumbres Pass road—\$40,000.00.

The sum of \$8,000.00 was apportioned to Huerfano County on a 100 per cent basis.

The sum of \$5,000.00 was appropriated for the further construction of the Palmer Lake road on a 100 per cent basis.

The sum of \$600.00 was set aside to meet a portion of the expense of oiling the road from Colorado Springs to Broadmoor Hotel, to be expended under the direction of Mr. Nichols.

The sum of \$11,000.00 was appropriated for construction on Road No. 50 in Larimer County on a 50-50 basis.

Jefferson County was appropriated \$1,000.00 on a 50-50 basis to be expended on the Coal Creek road, \$1,000.00 by the state to \$500.00 by the county on the Guy Hill road and \$1,000.00 state to \$1,000.00 county on the Evergreen-Troutdale road.

There was appropriated to Arapahoe County \$4,200.00 for the purpose of building a bridge across Bear Creek near Ft. Logan.

Commissioner Ehrhart was instructed to purchase from J. M. Derry two and one-half acres of ground near Buick in Elbert County, for a gravel pit, said two and one-half acres to cost not to exceed \$375.00.

Commissioner Ehrhart was authorized to purchase ten whole lots and eight fractions of lots in Black 8, Kensington Subdivision, as per offer of the Denver Tramway Company under date of September 9, purchase price not to exceed \$1,500.00.

The meeting adjourned until 10 a. m., Sept. 9th.

Commissioner Ehrhart was instructed to purchase for the Highway Department's garage an Imperial Welding outfit and gas generator.

The Mountain Motors Company and the H. W. Moore Company were allowed extension under their agreement to equip trucks with bodies and hoists until such time as the Highway Department garage is equipped to do this work.

The petition under date of August 19 from the Board of Trustees of the town of Aguilar requesting that the State Highway Commission designate state highway thru the town was granted, as follows:

Beginning at a point where the main highway from the north intersects to corporate limits of the town of Aguilar at Fir Street, thence running west two blocks along Aspen Street to the point of intersection of Elm Street, thence south five blocks to the intersection of the boundary line between Lakeview and Romero Additions, thence following said boundary line three blocks to the west point of intersection of West Avenue, thence south following West Avenue to Main Street, thence following Main Street in an easterly direction to a point where the main highway from the south intersects the corporate limits of the said town of Aguilar.

Commissioner Ehrhart was instructed to have a room enclosed by a wire mesh in the Highway Department garage for the purpose of storing material and spare parts of trucks belonging to the Highway Commission.

Commissioner Ehrhart was instructed to have the property adjoining the State Highway Department's garage enclosed by a good substantial fence as soon as title can be obtained, and to have a temporary shed erected for the purpose of housing the Highway road equipment.

It was decreed that repair parts for trucks furnished the State Highway Department by the United States Government be given to the counties on requisition from them at a cost of 50 per cent of the retail price.

A petition under date of Sept. 5 to change the State Highway as desired by the citizens of Walsenburg was granted as follows:

On the west side of the Catholic Cemetery instead of on the east side as now laid out.

The sum of \$10,000.00 was appropriated for construction work on Independence Pass.

The contract on the Fort Logan bridge was awarded to Carl S. Madsen at a price of \$6,597.10.

The contract for construction on the San Luis Road, Federal Aid Project No. 24, was awarded to A. Salazar & Son, Rudolph Hess and E. C. Hoagland.

Bids for construction of the Levy Construction Company on Federal Aid Project Numbers 21, 22, 60, 61, 62 and 63 were rejected.

The following appropriations for Federal Aid Projects were adopted:

FEDERAL AID PROJECTS FOR 1920 District No. 2, \$390,406.00

	Q (3)	
110	Burlington South	10,000.00
111	Limon East	30,000.00
112	Divide toward Lake George	30,000.00
113	Salida North and South	40,000.00
114	Kiowa West	20,000.00
115	Cheyenne Wells West	30,000.00
116	Colorado Springs North	100,000.00
47	Colorado Springs-Canon City	10,000.00
49	Colorado Springs-Cripple Creek	10,000.00
117	Colorado Springs-Manitou	35,000.00

\$315,000.00

The Commission adjourned to October 13.

E. E. SOMMERS.

N. A. BALLOU,

Chairman.

Secretary.

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A signpost in Southwestern Colorado admonishes:
YOU MIGHT MEET A FOOL!
DRIVE SLOW—

UTAH WILL COVER CONCRETE ROADS.

An important decision has been made by the state road commission of Utah. Topeka mix or bitulithic surfacing must be placed on all concrete roads henceforth. It is maintained by the commission that concrete after several years' use has to be covered, and that it is cheaper in the end to cover it at the start, hence the change in road-building policy.

The decision was reached when it was resolved to readvertise the improvement work on the state highway from a point 5.36 miles below Midvale to American Fork, excluding the city of Lehi.

The advertisement for new bids calls for a cement concrete base four inches thick on the edge, and six inches in the center, covered with either Topeka mix or bitulithic. The same conclusion was reached as to the paving which is to be put down on Thirty-second South Street, Salt Lake City.

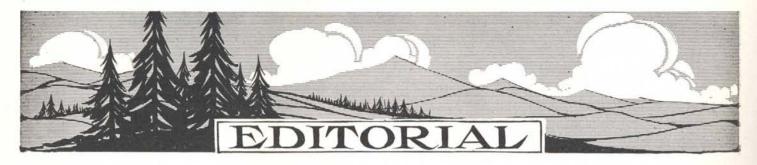
The contractors who had been the successful bidders, on a straight concrete basis, were willing to make the change for the same price they had bid on concrete. The commission declined, and new bids will be opened.

Experience of the state road commission with both bitulithic and reinforced concrete roadways has not been entirely satisfactory, as is evidenced by the fact that of the advertisements just authorized none is for reinforced concrete, while the bitulithic or "Warrenite" will have to compete with an unpatented binder and surfacing known as Topeka mix.

HALF-SECTION ROADS

Periodically some one suggests the advisability of paving only half the roadway on country highways, leaving the other half soft for the benefit of horse-drawn traffic. In other cases, as proposed in a bill now before the Pennsylvania legislature, soft roads on each side are advocated. Such suggestions generally emanate from those who are interested in livestock, for there can be no doubt that roads of this character are much easier on horses' feet. However, there are constructional disadvantages in these types, and in the half-section road there is one feature which tends to make the road dangerous for motor-driven traffic. In this construction it is necessary, on account of drainage, to slope the road away from the center line. Therefore, on curves where the improved strip is on the outside, there is actually a case of reverse banking. Some roads in the East built in this way, notably the Buffalo-Niagara Falls boulevard, are positively dangerous, and have been blamed for many accidents. At the same time, reversed bank curves are very uncomfortable for motorists at even moderate speed. Furthermore, the earth side roads are very expensive to maintain if there is much traffic. The maintenance on the earth section of the Buffalo-Niagara Falls Boulevard, mentioned above, is reported at about \$1,000 per mile per year.

-Engineering Record.



Lest Colorado Forget

OLORADO'S scenery is her greatest asset. Nature's remarkable display of mountain grandeur in Colorado can be made accessible only by good roads.

Colorado's extraordinary agricultural resources also demand the best of roads.

Development of Colorado's scenic and industrial greatness by the medium of proper roads cannot, in the very nature of things, be delayed.

To develop an adequate road system in Colorado, as elsewhere, will require money. Funds expended for this purpose will not be wasted, but will be returned to the citizens of the State manifold.

Since the last issue of the Highways Bulletin, in which was advocated the proposed \$5,000,000 bond issue, to be voted on at the fall election of 1920, there has been started a method of financing Colorado's roads which is much preferable to the bond issue proposed.

The newer proposition is one for a \$25,000,000 bond issue, and the movement is rapidly assuming definite shape. It had its inception with several good roads and commercial organizations of Colorado and has struck a popular chord everywhere it has been broached. It should be remembered that several states, the future and very life of which do not depend upon good roads nearly as much as do those of Colorado, have recently voted large bond issues for road building purposes, as witness:

Between November 1, 1918, and July 1, 1919, state highway bonds were voted as follows: Illinois, \$60,000,000; Pennsylvania, \$50,000,000; Michigan, \$50,000,000; California, \$40,000,000; Oregon, \$12,500,000; South Dakota, \$4,-500,000; Utah, \$4,000,000; Wyoming, \$2,800,000; Nevada, \$1,000,000; or a total of \$224,800,000. Other states have made definite provisions for submitting to a vote of the electors between June 30, 1919, and December 31, 1920. bond issues as follows: Minnesota, \$75,000,000; Texas, \$75,000,000; Missouri, \$60,000,000; West Virginia, \$40,-000,000; Washington, \$30,000,000; Montana, \$15,000,000; Maine, \$10,000,000; Colorado, \$5,000,000; Idaho, \$2,000,-000; and New Mexico, \$2,000,000. or a total of \$314,000,-000. Alabama, Georgia and Virginia are each contimplating making provisions for submitting the question of issuing state highway bonds to the voters.

On May 6, 1919, the electors in Oklahoma defeated a state road bond issue providing for \$50,000,000. In New

York the question of submitting to the voters a provision for issuing \$20,000,000 in road bonds was vetoed by the governor, as was also a provision authorizing \$20,000,000 in the State of Arizona.

Without going into detail in this important matter, is is enough to say that every citizen of Colorado who has the welfare of the State at heart should put his shoulder to the wheel and work for the adoption of the larger bond proposition. As an advertisement of the resources of the State it would have no peer. If the proposition is not pushed to successful completion, Colorado will suffer by comparison with other states which have taken the lead and have already passed big bond issues, as recited above. There is scarcely one of the states included in the above epitome which has the real need of a perfect roads system which the Centennial State has today.

Keep Travelers in Colorado

HERE will be reproduced in a forthcoming issue of the Highways Bulletin the bill for a \$40,000,000 bond issue for roads building voted by the people of California July 1 last in special election. This bill carried by a vote of 8 to 1, despite the fact that two large previous bond issues had been voted.

California is a living example of the virtues and advantages of good roads. That the Golden State took the lead in roads construction is largely responsible for its rapid growth, both industrially and agriculturally, and as a mecca for tourists. It has more automobiles per capita than any state of equal population and is in the forefront of nearly all states in this regard, being ahead of all eastern states and being surpassed only by certain midwestern commonwealths where rapid agricultural development has made of the automobile an absolute necessity.

For pleasure car and touring advantages California is far in advance of all other states and its enormous absorption of motor cars has been accomplished despite the fact that it is farthest from the motor-car manufacturing centers. It is only by enormous expenditure of freight and express charges that cars are transported from factories in Detroit, Lansing, Flint, Indianapolis, Toledo and other factory cities, that cars are received in California. It would not be surprising if the next car census shows more automobiles in California than in any other state.

This is only one of the miracles that has been accomplished in California by good roads. As a population cen-

ter the state is growing almost more rapidly than any other, despite the long immigrant trip across the continent. People are attracted to this Pacific coast giant among commonwealths as much by the roads and motoring possibilities there as by any other feature of the state. It is said that there are ninety excellent roads out of Los Angeles which will take the traveler for distances of from 50 to 100 miles without covering the same road twice except for short connections and crossings. As a consequence nearly every family in the city has some sort of car and there are no more happy nor contented people in any place in the world. Also there is no large city growing so rapidly as Los Angeles. It has increased from a village to a metripolis of 650,000 people almost in the time since motor cars were invented.

And Los Angeles is only one example of the wonders worked by good roads in California. San Francisco, Oakland, San Diego and a score of smaller cities have attracted large populations because they were accessible from other points in the State by good roads. Flourishing agricultural and horticultural communities have been established and more such centers are springing up each year.

The only answer is found in the good roads in the State. A peculiar featurt of the manner in which California has been builded by good roads is that eastern homeseekers and tourists who go there are unable to reach the state in their own cars over good roads. They take their lives in their hands when they start to motor across the plains of the midwest, the Rocky, Wahsatch and Sierra Nevada Mountains and the Desert, so nearly all who go to California go by train. If they want to take their cars, they have to be shipped by rail.

In this last stated fact lies a lesson for Colorado. The way is being paved rapidly to this state, which will shortly be reached in comfort by the motorist from the East. Illinois and Iowa each have \$50,000,000 bond issues for roads, and the latter state, which voted early and is not mentioned in the table quoted in another editorial in this issue, has already begun the carrying out of an elaborate program. Roads are being builded so rapidly in states immediately to the eastward of Colorado that automobiles will shortly be pouring into the Centennial state by the tens of thousands each summer. Will they find decent roads in Colorado, or will they say to each other, "Let us motor on to California"?

The Only Way Out

HE map on the back page of this issue of the State Highways Bulletin shows the route taken by Commissioner T. J. Ehrhart and State Engineer J. T. Maloney on a recent trip of inspection over the road projects and passes in western and northwestern Colorado. A story of the trip, given without much detail, is published in this issue of the Bulletin.

Many things of interest in roads development were discovered by the editor, who also made the trip. That road construction in commendable measure is proceeding over important stretches of highway to the westward of Denver is something that is apparently not known by many critics of the present Highway Commission. That certain roads already built in western Colorado are as fine as any to be found anywhere is also something that carpers should realize.

More than 100 Federal Aid road projects are already either under way or authorized for Colorado and the State is taking advantage of these opportunities as best it can to create a system of highways that shall be second to none anywhere. The only drawback to rapid completion of present carefully worked-out plans is lack of finances to meet the government appropriations, amounting to more than \$2,500,000. The last Colorado legislature failed to provide funds to do this, and the state and counties have had to "dig" and "dig hard to keep up their end. Of course, it is unthinkable that this should not be done and that the funds offered by the Federal government in liberal fashion should not be used.

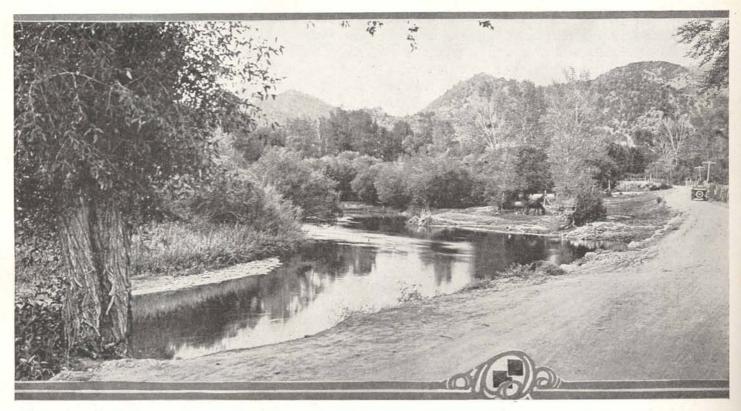
The only reasonable way out is the \$25,000,000 bond issue proposed by several public-spirited organizations to be voted on next year. Every citizen who has the interest of the State at heart should come forward and place himself on record in favor of this proposition.

Mountain Roads Inspected by Commissioner (Continued from page 11.)

Pretty purple "posies" made the high altitude hill-sides a riot of color as the motorists descended from Leadville's snow to Glenwood's sunny glow. As they rambled down the Eagle the temperature rose steadily until real summer weather at last asserted itself. There is really no greater weather paradox in the United States, at least between nearby cities, than is found in the 98-mile ride down the Eagle from Leadville to Glenwood. The former city is 10,600 feet high and Glenwood is but 5,600, or 5,000 feet lower. It is always warm at the latter place in the summer, very often hot, while Leadville is one of the two most consistently cold points with which the government weather bureau has to deal in all of Uncle Sam's wide domain.

Eagle's roads are only fair, as were the first of those encountered in Garfield, which county line was crossed near Shoshone, 300 miles speedometer and 274 actual miles from Denver. The Canon of the Grand, into which had flowed the Eagle, is one of the most precipitous and forbidding (for road building purposes) imaginable. The great mountains of rock rise sheer above the river for 1,000 and 2,000 feet and through these on the west bank a narrow road was carved years ago down to Glenwood. For the upper part of the canon this is still the only road. It has been washed out by high waters, and passing motorists take their lives in their hands when they attempt to traverse it.

But now a county project, working up the canon of



Beautiful White River (Rio Blanco) three miles south of Rifle from a very good shale road. Where the shale has been laid three years results are fine.

the Grand, has carried a fine double track road seven miles to a point 3,000 feet below the intake of the Colorado Power Company. There are four miles to go to build the road up the dangerous part of the canon and at the present rate of construction four years' time will be required to complete it. State Engineer Maloney and Highway Commissioner Ehrhart are working hard to solve the formidable financial and physical problem of cutting this time in half or a quarter. W. H. Trumbor, who years ago built some of the road in the lower canon, has been placed in charge of the present work and the best of results are anticipated.

P. C. Thurmond, who is now in charge of Federal Aid project No. 4, from Rifle to Meeker, had built part of the new road in the lower end of the canon, and had done a good job. He came down from Meeker to meet the Highway Commission and lend his counsel to the completion of the road through the Canon of the Grand.

As the automobile carrying the state officials carefully wound its way down the upper part of the canon to the point where the new road began, the passengers realized as well as does the casual traveler what a task confronts the road builders of Garfield County in completing the thoroughfare to a point where it will be of value to Glenwood Springs, the county seat, and the entire Western Slope.

When Glenwood Springs was reached, there was Robert Norvell, State Highway Commissioner from District No. 5, of Northwestern Colorado, including this said canon road to Glenwood. Norvell, in company with his daughter; Clint P. Bowman, proprietor of the Oxford Hotel at Hayden, and himself an ardent good roads man, and Bow-

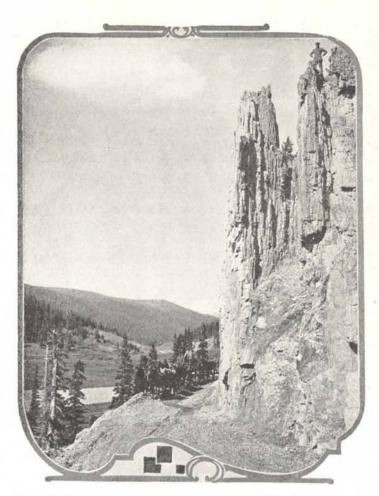
man's niece had made the drive from their homes at Hayden that day and dropped down the Canon of the Grand in Norvell's Essex just ahead of State Highway Commissioner Ehrhart and the latter's party.

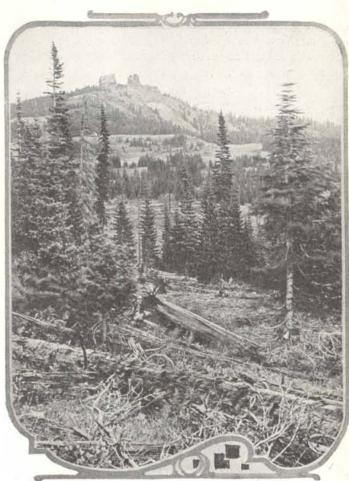
"I don't care if it is my district," laconically commented the commissioner from No. 5, "I wouldn't go back home the same way for \$500. No, I'd leave my car here forever first."

In the morning there came to Hotel Colorado, where the Highway Commissioners' parties were most comfortably esconced after their arduous driving, Commissioners R. P. Coulter and L. F. Grace of Garfield County to consult with the state officials, and together all repaired to Shoshoni and the head of the new work in the canon to confer with Chief Engineer E. C. Jensen of the Colorado Power Company concerning the carrying of the new road past the intake dam of the company.

The principal problem was that of moving the 50-ton steam shovel of the commission up the canon across the wooden bridge of the power company, which crosses the intake canal. It was plain to be seen that the bridge would support scarcely a third of 50 tons, impatient as was the big gravel-eater to crowd its ponderous way on up the canon to daylight and a clear and unobstructed sky.

"How strong is a bridge?" under the conditions prevailing at Shoshoni was too big a problem to be solved in one afternoon, and Engineer Jensen was left with the task of ascertaining how to strengthen his bridge, while Superintendent Trumbor struggled with the question of how to dismantle the Panama Canal dinosaur so as to take him across in pieces.





Two of Nature's best monuments on new Colorado roads. At left, head of work on west end of Fall River Road, the editor on top of rock; right, Rabbit Ear Rock, from which pass is named.

Federal aid for the Canon of the Grand Road may be obtained from Gypsum to Dotsero, which is a post road, and the national law permits the extension of such aid to a point six miles beyond where a road may be needed. If aid from Uncle Sam can be procured on the six-mile-beyond plea, this would help to carry the road three miles into the heart of the canon, leaving only three miles more to go to complete the road in the canon. Effort will be made to federalize the project in this manner and there is hope that the road may be finished in this way in short order. Surely there is no more worthy or necessary road project in Colorado today.

The plant of the Colorado Power Company, from which is carried nearly 200 miles across the Continental Divide, the highest region of the United States, the electricity which runs Denver's street cars and lights the city, is most interesting. From the point where the water is taken out of the swirling Grand, the intake, it is carried in a tunnel 14x16 feet, two miles through the granite side of the mountain. There it is dropped 170 feet onto two turbines, producing 18,000 horsepower, or 9,000 on either wheel.

The water strikes the turbines with a velocity of 100 feet per second, being carried through nine-foot penstocks. After use in this manner the water is discharged with equal velocity into the Grand again, whose bed is lined with concrete under the spillway so that a crater of untold dimen-

sions may not be formed by the force of the water, equal to the pull of 18,000 horses.

It was an interesting angle in engineering to attempt to prophesy what would happen to the concrete river bed under these extraordinary conditions. Old-time engineers shook their heads warningly and declared that nothing, not even concrete, would withstand the impact.

But the concrete has stood the test; it is barely worn, according to Engineer Jensen. The water from the turbines scoots evenly across the river in turbulent foam, turns down the river at the other side and the Grand is itself again, not to be so disturbed until it reaches the Grand Canon of the Colorado (in the same stream) 1,000 miles farther southwest.

In order to obtain a picture of the spillway from the opposite side of the Grand, Engineer Jensen sent Photographer Howe across the river in the "bucket" which carries his men over to the railroad betimes. The result was a splendid photograph, which is herewith reproduced.

The question of making a road down the picturesque Canon of the Grand is, as is also the case with all Colorado's road projects today, one of finance. It emphasizes the pity of the fact that the last legislature failed to enact an appropriation sufficient to make available the federal funds of about \$2,500,000 for road building purposes, the government sum being conditional upon the state providing an equal amount. As a consequence of this paradox,

the Highway Commission is now forced to appeal to the counties to apportion 25 per cent of the amounts necessary to meet the federal monies appropriated.

The splendid hotel of Mr. Elmer E. Lucas, the Colorado, was bade farewell, and Glenwood Springs was left behind Monday at 2:30 p. m. The speedometer indicated that Glenwood was 274 miles from Denver, actual distance, and Newcastle is 13 miles farther down the Grand. Grand Valley, eight miles farther, was reached by braving the worst dust of the trip. The fields lie to the east of the road, and with the wind from the west the crops received a constant deluge of dust from passing automobiles. Possibly oiled roads will relieve this condition some day, when the big shale beds in the vicinity, which are said to be the finest in the United States, are brought under subjection with proper processes of refinement.

The Highway Commission was found to be putting in a substantial new bridge three miles west of Grand Valley. Rifle, 29 miles west of Glenwood, was reached at 3:30, or in an hour after leaving Glenwood, despite the ocean of dust through which the car had passed. Many prosperous appearing farms, which were apparently owned and operated by Indians, had been passed in the Valley of the Grand. "Giving the country back to 'em on account of the dust," averred Commissioner Ehrhart.

Sixteen miles west of Rifle began Thurmond's Federal Aid Project No. 4, and the first view was had of ballasting new roads with oil shale rock. This is not an experiment, for farther on, for several miles before reaching Meeker, some of the best roads in Colorado, ballasted three years ago with shale, were found. It is important that the Rifle-Meeker Road be of the highest order, for it is called upon to accommodate some of the heaviest traffic in the state. It runs through an important agricultural country through which there is no railroad. Thurmond has done and is doing good work on this road.

At a point 20 miles from Rifle, at Rio Blanco postoffice at the head of Piceance Creek, is a road which follows this creek to its junction with the White River.

To Contractor Ed. O'Neill on F. A. 4 is due a great deal of the credit for making the road what it is. This project is 21 miles long and O'Neill has built practically all of it. His grading is complete and he was sure that all the shale to ballast the entire distance would be hauled and in place on the road by Thanksgiving.

O'Neill had made a trip to Craig the day before and got the promise of 25 teams to add to his force, in order that the Meeker-Rifle Road may be finished this fall. It had been impossible for months to get men to work or oats for the horses, but the "dry" farmers were then just cleaning up their crops and were looking for work. Pictures were taken of the three-year-old shale road closer to Meeker along the White River. It has a fine, hard surface and is an ideal thoroughfare.

The roads expedition passed close to the Thornberg battle ground, almost at Meeker. It was years ago that the Utes polished off some of the early settlers and Uncle Sam sent Major Thornberg from Rawlins, Wyo., the nearest army post, with a battalion of negro cavalry to chastise the marauders. But Major Thornberg and his command were ambushed near Meeker by Utes hiding in the tall sagebrush. Twenty cavalrymen were killed and all the army's cattle stolen before the Indians made off. A fine monument marks the scene of the battle ground.

Several fine photographs were made from the beautiful shale road along the White River, just before arriving at Meeker. At this city, which is the county seat of Rio Blanco, the speedometer showed 44 miles from Rifle. Headquarters were made at the Meeker Hotel, run by "Rube" Ball. Ball and sons are great hunters and the hotel lobby is full of choice mementoes of their prowess. There are skins and heads of gigantic black bear and elk, moose, deer, mountain sheep and antelope heads galore. Rio Blanco means White River and the "White River country" has been the hunters' paradise for a half century. It was here that Colonel Roosevelt, 1st., loved to come and the famous explorer was in his prime when he was equipped with "outfit" and guides and was headed for the White River hunting grounds below Meeker on the West Slope of the Rockies.

At Meeker the "highwaymen" were met by L. S. Walbridge, former Highway Commissioner from the district, who next morning took the party on "the circle trip" up the Bear River Valley. This 16-mile trip, up the east side of the valley and down the west side, is a revelation of the extremely fertile region. Hay, Colorado's foremost crop, is the principal product here and is found just above Meeker at its best. The land is irrigated from the Bear and fine crops of wheat are grown. Mr. Walbridge exhibited his 800-acre farm with justifiable pride. The valley is there six miles wide and is flanked with mountains abounding in big game. The altitude of Meeker is 6,240 feet. Rio Blanco County is claimed by its inhabitants to possess the largest deposits of shale oil rock in the country.

At the Meeker Club the party was introduced to W. S. Harmon, who had caught an 8½-pound trout in the White River 14 miles above Meeker a week before, his "fish story" being duly authenticated. An 8-pound trout, mounted, was on exhibition in the club, this being ample proof of the claim of the natives that hunting is not the only outdoor sport to be indulged in with pleasure and profit around Meeker.

Leaving Meeker Tuesday morning at 11:15, Commissioner Ehrhart pointed out the survey for the new road from that point to Axial Basin and showed where it will eliminate present curves and grades. It is proposed to build this road next spring and when it is completed there will be a first class road from Rifle to Craig, connecting up those railroad points and affording transportation facilities for that wonderfully rich region. "Bughole Rock," a curious formation six miles north of Meeker, claimed the attention of the travelers, who had their pictures taken on the rock, on which was painted, proclaiming the altitude, 6,879 feet.

At Axial Basin, 21 miles from Meeker, some big development of the tremendous coal deposits which have made Northwestern Colorado famous are being inaugurated by a Chicago concern headed by M. T. Streeter. A fine coal

camp has been built, with stores and hotel. The town of "Streeter" is ten months old and the coal mines were purchased February 18, 1919. Although far from a railroad and in one of the remotest regions of Northwestern Colorado, twelve automobiles were parked in front of the office of the Axial Basin Development Company when the Highway Commissioner drove up.

After luncheon Streeter exhibited a vein of coal 25 feet thick in his mine and assured the visitors that the property covers a deposit containing 125,000,000 tons of bituminous coal of high grade. He states that he is about to build a railroad from Mt. Streeter to a connection with the Union Pacific at Wamsutter, Wyo., and that Salt Lake interests have pledged themselves to build from that city to Meeker and Rifle by way of his camp.

Craig, the county seat of Moffat, was reached at 3:25 p. m., the distance from Mt. Streeter being 31 miles. Commissioners R. B. Overholt, R. S. Hamilton and T. A. Forkner of Moffat County were on hand to meet the state officials and inspection was made of the bridge head at the Bear River at the edge of Craig. As a result of the conference the commissioners stated they would go to work at once on the construction of a new 180-foot span bridge of modern character. The traffic is heavy and the bridge will be strong and capable.

Departure from Craig was made at 6:05 p. m., and Hayden, 20 miles distant, was reached at 7 p. m. over a fine road. Dinner was eaten there at the Oxford Hotel of Mr. Bowman and the road was taken for Steamboat Springs at 7:45. After passing two big coal camps, Steamboat, 29 miles away, was reached at 9 p. m. The road had been good all the way from Craig, a distance of 49 miles.

Steamboat Springs, the county seat of Routt, is a beautiful place and deserves a good hotel. Its springs produce over 100 varieties of hot mineral waters and there is a good bathhouse in the town. Five miles from Steamboat on the way toward the Rabbit Ear Pass is the junction with the Yellow Jacket Road and three miles farther is the connection with the road to Oak Creek, a flourishing coal camp, a short distance southeast.

The Forest Service is building a very good road from Steamboat Springs to Rabbit Ear Pass. This road overlooks the beautiful valley of the Bear or Yampa River, which is dotted with hay, wheat and oat fields. A picture was taken from the road on the heights showing over 100 haystacks in the valley below. Each stack contains about 20 tons of hay worth \$20 per acre as it stands.

Not all of this fine road was built by the Forestry Service, for both state and county have built stretches. Forestry crews were working as the Highway Commissioner passed. The grade necessitates many sharp curves, for there is a steady rise of 3,000 feet in seven miles of the distance toward Rabbit Ear. The first frost had turned the leaves on the mountain side from green to gold and the hillside above the road was a riot of clashing color.

The Rabbit Ear Pass Highway, which is one of the most important transcontinental road links in the nation, has been built by the State of Colorado, Routt, Grand and Jackson counties and the Forest Service of the United States, according to specifications prepared by the Government. As far as built, it is a boulevard and from a scenic standpoint is unexcelled by any other pass over the Continental Divide. It was begun in 1911 and was not completed until 1917. Present work is along lines of reducing curves and improving the roadbed. The road connects Routt with Jackson and Grand counties and furnishes direct connection with Denver by way of Kremmling and Berthoud Pass, where the main range is crossed again. Also it connects with the proposed highway system of Jackson county to Fort Collins and Loveland by way of the Poudre Canon road now under construction by the State Highway Commission. By way of Grand Lake it connects with the Fall River road to be completed next year into Rocky Mountain National Park.

Rabbit Ear Pass was reached in a 25-mile drive from Steamboat Springs in one hour and fifteen minutes. If the road were not well-nigh perfect, such time would be impossible, on account of the terrific grade. The pass is 9,400 feet in elevation and is so named on account of the peculiar double-rock formation at the top that resembles, somewhat remotely, the ears of a rabbit.

Twenty-nine miles east of Rabbit Ear is the union of the two principal roads from the East, one from Kremmling and one from Walden. The Highway Commissioner chose the latter, because it is slated for early development and is the least traveled of the two. Twenty-three miles of very indifferent road across a high park brings the traveller to Hebron, the southern terminus of the Colorado, Wyoming & Eastern Railroad, and there the Highwaymen ate luncheon of canned beans and salmon in the country store. Shortly after leaving the junction with the Kremmling road a party of campers from Denver and Iowa were met. They had come from Denver by way of Tie Siding, Wyo., and Walden.

Walden, thirteen miles north of Hebron, is the county seat of Jackson county and the metropolis of its part of Northwestern Colorado. A Federal Aid road is projected from that city to Rand, 26 miles east, and thither the roadmen wended their way. They stopped all night at Rand, having found a nice, clean little hotel, although it comprises about all there is of Rand. This is in the heart of Colorado's famous North Park haying country and a farm scene two miles east of Rand was photographed. At the approach to Willow Creek Pass, a picture was made in a stand of magnificent lodge-pole pines. The road was good and the route is believed to be extremely feasible for a main road into the North Park.

Willow Pass, on the Continental Divide, was reached in eleven miles from Rand. This is a beautiful pass, 9,550 feet in altitude, situated 26 miles east of Granby. It is 4½ miles from the Pass to the Gilsonite Forest Ranger Station and five miles from Milstay's Roadhouse. The Pass is in the Arapahoe National forest.

The road down Willow Creek on the east side of the divide was not so good. Eleven miles east of Rand, while threading their way down the tortuous canon, the Highways party came upon one of the Commission's Nash Quad trucks which had slipped off the road in the mud in the afternoon of the day before during a heavy rain. It was lying on its side at the foot of a bank ten feet off the road. Although the accident had occurred in Grand County, it was one of the trucks that had been apportioned to Jackson County. This road is a project slated for early development and can be made one of the best and most scenic in Colorado.

Granby, Grand County, on the Grand River, 37 miles east of Rand, was reached at noon Thursday. Instead of proceeding directly to Denver, diversion was made at this point to Grand Lake, sixteen miles northward. Grand Lake is an hour's ride over roads that are very fair. At this point begins one of the most important roads scenically in the United States-that to Rocky Mountain National Park by way of Milner Pass and Fall River. The State Highway Commission is constructing this road according to Government specifications and it was the purpose of Commissioner Ehrhart and Engineer Maloney to inspect the road already built on the West slope by contractors and to note progress made. The party left Grand Lake Thursday after luncheon and proceeded northeastward to the foot of the mountains forming the divide where the new road is being built over it. It was found to be .8 mile from the postoffice at Grand Lake to the junction of the Granby road with that to Fall River. Hardly had the latter road been entered, scarcely beyond the boundary of the village of Grand Lake, when a wild doe came out of the woods and ran in the road ahead of the automobile. Seven-tenths of a mile from the Junction a sign reads "Rocky Mountain National Park." The road into the park runs along the extreme upper reaches of the Grand River, and the snows of the Continental Divide from which Grand Lake and river are formed are here in plain view. The road from the lake to the foot of the divide, where the Highway Commission's road begins, is very bad, and here, at one of the last stages of the commonwealth-covering journey, the car lost its muffler and the nut from its grease cup on rocks which formed high road centers.

Eleven and two-tenths miles from the entrance to the park, after a road which is extremely tough, begins the work of Contractor McQueary, who is building the west half of the road across the divide in the park. "Squeaky Bob" Wheeler has a hotel at the foot of the divide, although it is as yet impossible to reach it from the east side of the range except on horseback.

The road up the west slope is remarkably fine. The view from its curves as it winds its upward way is indescribable. Bald, 14,000-foot peaks form a circle of sentinels and in the immediate foreground to the west are beaver lakes. Milner Pass, at "The Top of the World" was reached in one hour and fifty minutes from Grand

Lake, despite stops to take several photographs and the bad condition of the road from the lake to the foot of the Pass. At the top of the Pass is a beautiful pair of lakes, called Poudre Lakes, because here the Poudre river, flowing eastward through Fort Collins to the Platte and the Missouri, has its sorce. The travellers had left but a quarter hour before the Grand River, which later becomes the Colorado and flows westward through the Grand Canon into the Gulf of California and thus finds its way into the Pacific. Truly Milner Pass is a wonder spot, guarding, as it does, both sides of the continent.

The road from the West was completed to the Pass August 28, when the officials were there, and the start was made by Contractor McQueary for the top of a ridge almost 1,000 feet higher over which the Government has specified the state must build the road. The road will traverse the top of the ridge 12,200 feet high for three miles and will afford to motorists a view which will be unbeatable.

There remains a stretch of eight miles of road to be built to connect up the work on the Western slope with that of Contractor Jacobson on the East side. There are one and one-fourth miles of West slope road blocked out and almost graded. Five and one-half miles had been built and carved out of the granite mountainside when the officials called on the contractor August 28. Labor has been scarce and hard to keep contented on the mountainside and the contractors have had many difficulties.

Contractor McQueary, working for the commission on force account, had been called to Granby because one of his drivers was accused of having taken a sack of peanuts from a railroad car. Uncle Sam demanded a bond of \$500 for the man. Almost a day of the contractor's time, including the hard trip to Granby, was required to save this man, who was badly needed on the road job. Another laborer had forged his companion's name to a check for \$50 and "beat it." Men are paid \$5 per day and are given their board for \$1.50.

Contractor McQueary figured that he would have the way cleared to the summit of the ridge by September 20. Then the snow will not lie so long next spring and work can be pushed much more rapidly than if such clearing were not done.

TNT, that marvelous explosive which cut so large a figure in the late war, has been of great assistance in the heavy work on the West slope of the road from Grand Lake through Rocky Mountain Park. The largest rocks are blown to atoms and pine stumps two feet in diameter are blown high in the air. One stump which was looser than it appeared to be, was blown across the canon, a distance of 1,000 feet, to the camp commissary and alighted at the door of Timekeeper W. H. Pigg's tent. Fortunately it injured no one. The TNT is being used economically, now that the roa foremen have become used to it and they say they would dislike very much to have to return to dynamite.

Large culverts are being put under the road from Milner Pass to the ridge, for this section of the highway has proved very wet, due to snows above, which melt all summer.

Hotels will be badly needed at both Grand Lake and Granby with the completion of the road from Kocky Mountain National Park to Grand Lake, which will be some time in 1920. This is already the most popular of National parks, although it was opened as recently as 1915. It now has more visitors annually than both the next most popular parks, Yosemite and Yellowstone, which have been open for years, combined. Which is becomes possible to motor from Denver to Estes and Rocky Mountain Parks and thence to Grand Lake by the new road, returning to Denver by way of Grand Lake, Granby and Berthoud, thus making a circle mountain trip as yet without a peer in the United States, the automobile passenger traffic over the route will be nothing short of tremendous. As yet, hotel accommodations are lacking. despite the fact that Grand Lake itself is one or the most beautiful spots imaginable.

It is twelve miles from Granby to Tabernash up the Fraser river and four miles farther to Fraser. At Fraser the Highway Commission's car completed its 10,000th mile since its purchase in February. Vasquez is five miles farther east of Fraser and the foot of Berthoud Pass is another five miles beyond Vasquez. Looking down on the motorist who travels this route are some of the finest peaks of the Rockies, ranging from 13,500 to 14,000 feet in height and all exhibiting some snow even at the last of August. The date of this visit was August 29.

The motorists arrived at the summit of Berthoud Pass at 1:20 p. m., having made the climb over the old road with ease. The road is easily traversible and many automobiles were on the route that morning. A new survey has been made, however, on either side of the pass, which will eliminate many curves and some of the steeper grades. The Highway Commission purposes building this road in 1920.

Berthoud Pass will probably be in time the principal crossing point of the Continental Divide from East to West in the entire United States. It is but a few feet below timberline, which fringe of tree growth is easily discernable on fifty peaks and a dozen ranges on all sides. It is the boundary between the Pike and the Arapahoe National Forests and between Grand and Clear Creek counties. It is 57 miles west of Denver and nine miles west of Empire, the nearest town, 13 miles east of Fraser and 36 miles east of Hot Sulphur Springs. There is a picturesque place to camp on the top of the pass and there were motorists, bound in either direction from all points of the compass, assembled for luncheon.

From Berthoud the road down the Atlantic side of the divide runs along Clear Creek, and there is a survey for a new road from Berthoud to connection with the present road to Empire to be built next year. Four miles east of Berthoud and 55 miles west of Denver this road, a mile of which has already been built by the Forest Service, leaves the present road and starts for the summit along a much easier grade than that of the present road.

To Idaho Springs, 20 miles east of Berthoud Pass, the road is very fair. Five miles farther east is the foot of Floyd Hill, up which eminence has been built one of the best roads in the state, with the Highway Commission and Clear Creek county co-operating. Three-fourths of a mile from the foot of the hill is a concrete safety wall, protecting the road on a hairpin curve. Between the top of the hill and Bergen Park, the State Highway Commission was working a big crew of men and teams in widening and surfacing this important road. Superintending the work is "Cement Bill" Williams, who gained fame as the builder of the road from Golden to Denver's Mountain Parks He declared that the new road, which is 24 feet wide, will be better than the Lookout Mountain road, for it is being better surfaced. The road is well drained by new culverts and is in perfect shape.

An unique feature of the Floyd Hill road is a system of new protecting posts carrying two cables the entire length of the hill. The cables were given by Clear Creek County, the posts by the City Mountain Parks and the work of installing was done by the State Highway Commission.

Where the Floyd Hill or Idaho Springs road connects with the Denver Mountain Park road, at Bergen Park, the motorists were 25 miles from home. It was decided to take the unusual route through Vernon canon on the way down Lookout Mountain, this being practically the only unimproved road from Denver, Morrison and Golden to the A cuntain Parks.

The head of Vernon Canon was struck six miles east of the point where the motorists entered the Mountain park and the canon was found to be 4.3 miles in length, the foot being about midway between Golden and Morrison. Near the mouth of the canon is a stone house bearing date of 1860, indicating that this is one of the first traveled gateways to the Rockies, although now the least developed.

Three-tenths of a mile below the mouth of Vernon Canon is the junction with the Golden-Morrison "hogback" road, and three miles and six-tenths northward on that road is the National Guard's Rifle Range, where connection is made with the cement road from Denver to Golden, completed by the Highway Commission a year ago. The speedometer at this point showed 797.4 miles for the seven days' mountain exploration and at the State Capitol, eleven miles farther eastward, the end of the journey, the mark was 808.

The trip had been a successful one, in that it exhibited visually the progress of work on present road projects in Colorado's mountains and the need of new roads and of improvements on those already built.

