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Historic Avalanches in the Northern Front Range and the Central and Northern Mountains of Colorado

M. Martinelli, Jr. and Charles F. Leaf



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Abstract

Newspaper accounts of avalanche accidents from the 1860s through 1950 have been compiled, summarized, and discussed. Many of the avalanches that caused fatalities came down rather small, innocuous-looking paths. Land use planners can use historical avalanche information as a reminder of the power of snow avalanches and to assure rational development in the future.

Keywords: avalanches, avalanche accidents, avalanche damage, avalanche fatalities, snowslides

Authors

M. Martinelli, Jr. is a retired principal meteorologist. He led the Mountain Snow and Avalanche Research Work Unit at the Rocky Mountain Forest and Range Experiment Station until 1985.

Charles F. Leaf is a consulting hydrologist and water resource engineer with the Platte River Hydrologic Research Center in Merino, Colorado.

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Cover Photo: An avalanche cascading over a cliff in its track. The debris from this wet slab avalanche in May 1973 set up very hard soon after it ran. (Stacy Standley photo.)

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"A mile above a concussion jolted the cliff; a terrific echo to the pistol-shot. Down came the slide — gently at first — so far away it seemed only as wide as one's hand. In an instant the snow shot from under the two men. A mile of snow, bristling hairlike with root-torn pines, thundered down the slope. Mason and Salarado, forgetful of each other, were whirled into the air; and fell back on a huge slab of ice that crashed down that tumbling mountainside unbroken by the mass of fighting logs around it. This piece of ice on which they lay was thick and solid; laced and interlaced with tough brushwood frozen in. This woven acre rode the avalanche like a sled. A crag a quarter of a mile ten feet ahead, passed with a roar. A huge pine whipped by faster yet. That rocky spur half a mile down — now behind — was a pain in the ear. Faster, faster, dropping, falling, sailing — they are standing still; but on either side, up from below, the air and the mountains pour — then blackness." (Thomas 1969)



Historic Avalanches in the Northern Front Range and the Central and Northern Mountains of Colorado

1861-1950

M. Martinelli, Jr., and Charles F. Leaf

Introduction

About 5:30 Sunday morning, January 21, 1962, an avalanche released high in Gordon Gulch, 1¹/₂ miles west of the small town of Twin Lakes, Colo. Within a few minutes, a family of five and both children of a second family were dead. In addition, six buildings, seven vehicles, and two small trailers were demolished and three more buildings were damaged. Avalanche debris extended well into the flats along Lake Creek, 1,000 feet beyond the road along which the houses had been built. Most of the local residents had no idea this avalanche could come anywhere near the houses. A few old timers from nearby Leadville, however, recalled that the “Twin Lakes Avalanche” had crossed the road “about 70 years ago”.

Avalanche accounts later in this report show this avalanche ran to the valley floor in May 1884 and again in February 1899, when it killed one person. A smaller avalanche on this path in January 1916 killed two miners, but probably stopped short of the road. This is a classic example of the type of accident that can usually be prevented if good avalanche records are readily available and are used to make sure homes and other highly vulnerable structures are not built in hazardous locations.

Colorado House Bill 1041, passed in 1974, establishes procedures and the legal mechanism for land use zoning based on natural hazards, including avalanches. The basic idea for avalanche zoning is first to identify and map known avalanche paths; then to determine, for each path, the area that will be covered by the largest avalanche likely to occur within some predetermined time interval — often taken

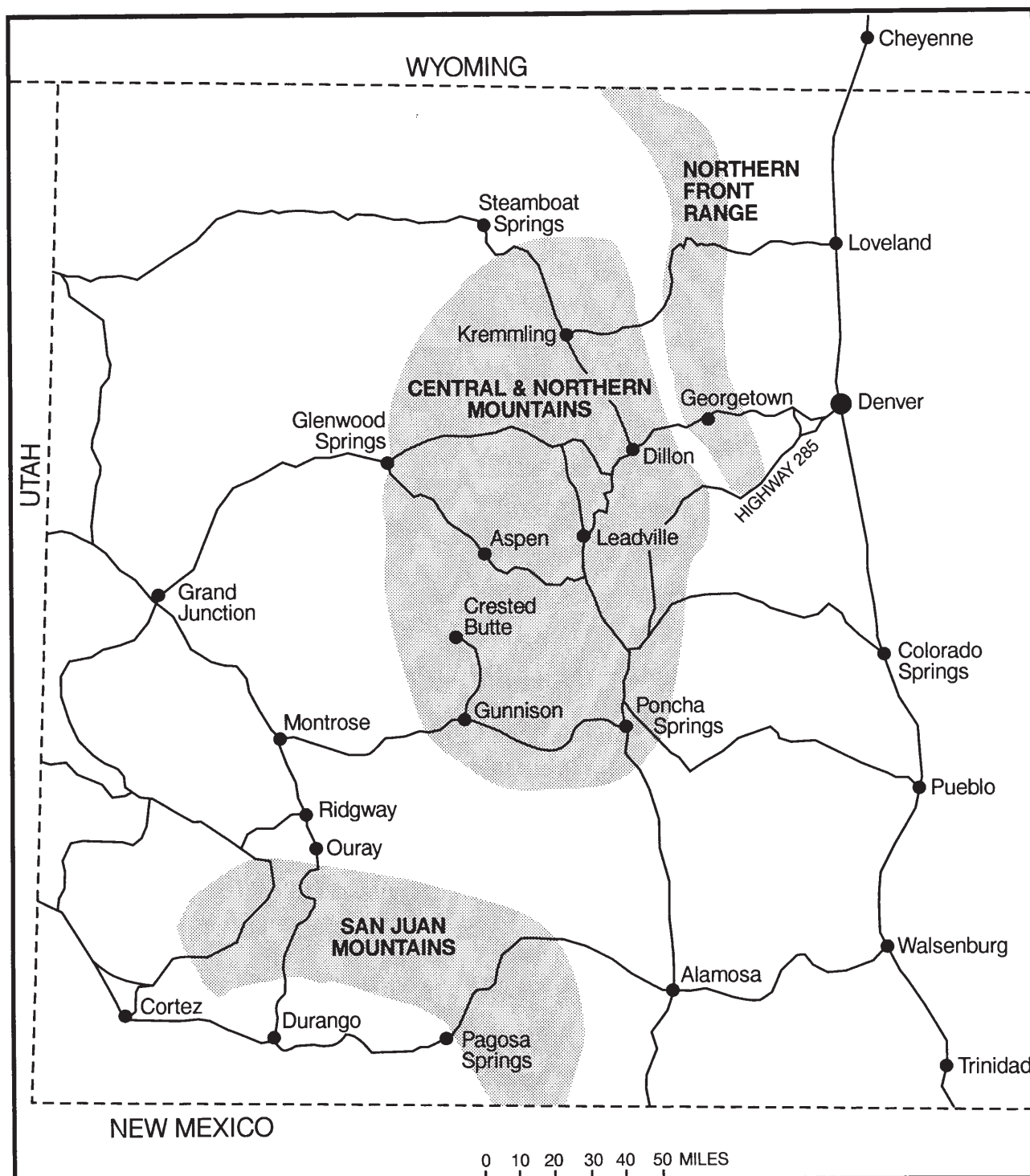


Figure I. — Map of western Colorado showing the primary mountain areas mentioned in this report.

as 100 years. Land use planners can use this information to assure rational development in much the same way the 100-year flood is used to plan activities and development along rivers.

Mears has developed guidelines for determining the degree of avalanche hazard for a given path based on field evidence of the frequency and size of events on the path (Mears 1976). He also has mapped the avalanche paths and delineated the degree of hazard around them for selected areas of potential development in central Colorado (Mears 1979).

Ideally any avalanche hazard evaluation based on a return interval should be developed from records that are at least twice as long as the return interval. This, plus the fact that large infrequent events have the greatest potential for catastrophe, make a strong case for extending records of avalanche frequency and size as far back in time as possible.

This publication is an attempt to extend the avalanche record for selected parts of Colorado as far back as existing data permits. The newspapers from the old mining camps were our chief source of information. Avalanches, especially large, destructive ones, were well reported. Over two hundred accounts have been located, analyzed, and are published here. These accounts are numbered consecutively, starting with early events in the Front Range, to facilitate cross referencing and indexing. A and B suffixes are used to designate second and third accounts of the same accident. The X and Y suffixes are used to keep later entries in chronological order. In the text when reference is made to a specific account, the account number is given in square brackets.

Comments inserted into the original newspaper articles by the authors are enclosed in square brackets. Some of the old articles were damaged or otherwise difficult to read. These omissions or the authors' interpretations of these data are enclosed thus { }.

Many of the accounts are explicit enough to permit the sites to be located in the field. A few give sufficient detail to be used for checking the empirical techniques for calculating avalanche runout distances. The accounts also give a good idea of how much the early mountain dwellers knew about avalanches.

Historic accounts were compiled for two geographic areas — the Northern Front Range and the Central and Northern Mountains. The Northern Front Range area consists primarily of the mountains east of the Continental Divide and north of Highway 285; however, the southeast corner of Summit County is included because events from that area are closely related to those across the ridge in Clear Creek County and were extensively covered in the Georgetown and Silver Plume newspaper. The Central and Northern Mountains include all or part of the Medicine Bow, Mosquito, Gore, Sawatch, Ten Mile, and Elk ranges (Fig. 1). Armstrong (1976, 1977, and 1980) has made similar historic compilations for San Juan, Ouray, and San Miguel counties in southwestern Colorado.

Data Sources

Three newspapers, the *Georgetown Courier*, the *Leadville Herald Democrat*, and the *Summit County Journal* were the primary sources of information. Additional data were obtained from the publications of the naturalist Enos Mills (1911, 1915, and 1921); mining engineer T. A. Rickard (1903, 1907); and several books about the geology, mining, railroads and ghost towns of the study areas. Gallagher (1967), Williams (1975), Williams and Armstrong (1984) and Logan & Atkins (1996) have documented avalanche accidents in the United States in more recent times.

Avalanche Knowledge and Awareness

Many of the avalanche concepts we accept and use today were well known by the miners and mountain dwellers a century ago. These people lived and worked in the steep, snow-covered mountains year round. They learned many things about avalanches by direct observation and personal experience.

A few examples of avalanche concepts that appeared in the newspapers and non-technical literature of the era are given below. Although at times somewhat exaggerated, most are basically sound. The publication of these accounts in newspapers and readily available books and magazines indicates the information was generally available even though most of the events referred to, such as the Liberty Bell accident and some of Enos Mills observations, took place in the San Juan Mountains of Southwest Colorado.

In 1903, T. A. Rickard, a respected mining engineer and former state geologist (1895-1901), wrote:

“As a rule, it is possible to predict the track of snowslides because they commonly follow the line of destruction marked out by them in previous years, but as a matter of fact, the great injury to life and property due to snowslides is just the one which is caused by the unexpected slide which takes an entirely unsuspected line of descent. Such was the cause of the Liberty Bell catastrophe, for, of course, the buildings were erected at a spot confidently believed to be immune from such a danger.

“The destructiveness of the snowslide must be seen to be appreciated; buildings and tramways are as toys before its fierce oncoming and men in the path of its descent are as straws in a whirlwind. In fact, much of the damage is due to the vacuum caused by the rapid motion of a mass of snow and the cyclonic disturbance which follows in its wake. I have often watched them descending a neighboring ravine, when myself out of all chance of danger. The thunder of its tempestuous descent first calls one’s attention, and then one sees the mass of snow gathering underlying rocks, uprooting trees, amid a quickly gathering mist of snow particles driven fiercely by the whirlwind in the rear. The rushing mass will not stop at the bottom of the slope, but its momentum will carry it some distance up the opposite declivity, while all the forest trembles and the air is darkened with a snow mist.” ...

This article points out that avalanches usually follow the same path each time they run. However, it emphasizes the potential for catastrophe when the occasional avalanche deviates from its usual path and establishes a new one. This potential for serious consequences when avalanches break out of their familiar paths is still a serious problem for planners and others concerned with avalanche zoning. The destructive force, the turbulent snowdust cloud, and the ability of fast-moving avalanches to cross the valley floor and climb part way up the opposite slope are also emphasized.

Two years later the *Georgetown Courier* for March 5, 1905, carried an article titled "Rocky Mountain Avalanches" that quoted Dr. J. Q. Allen of Telluride, Colo. Some excerpts from that lengthy article are given here:

"My first experience with a slide was at Creede, Colo. I, with three other men, was on the side of a mountain looking at some mining property. We were above timber line and about half way from the bottom of the gulch to the top of the mountain. I did not think at the time of danger, as the snow where we were was only 18 inches deep.

"The field suddenly cracked and the snow below us moved down a foot or two. This took away the support of an immense mass of snow above us, where it had blown over the top of the ridge to a depth of 15 or 20 feet. It broke the crest of the ridge and all of the snow on our side of the mountain came down upon us. The mountain curved around us in a circular manner and the width of the slide was more than 1,000 feet, we being about in the center. I glanced up, on hearing the snow break, and acting upon my first impulse, turned my back to the avalanche. It struck me first on the legs, and I sprang into the air as high as I could. The mass passed under me, and by the terrific rush of the snow I was kept on top all the way down into the gulch, about 500 feet.

"I was the only one free, and proceeded to dig the others out. As the snow frequently packs after running almost to the consistency of ice, this was no easy matter. The man next to me was buried in a perpendicular position, with only his hair visible. I had to free his body down to his ankles before I could pull him out. The last man reached was dead when extricated. The rest of us escaped with slight bruises. It was the next July before articles we lost were found.

"The first slide at the Liberty Bell mine ran at least one mile. The snow was left 25 feet deep in the gulch, and probably more than that in places, possibly a maximum depth of 40 feet. There was no mass of ice in the slide, only snow, solidly packed by the impact of the moving mass. The vertical distance which this slide descended was fully 3,000 feet. The slides all started above timber line, at an altitude of from 12,000 to 13,000 feet. The first 1,000 feet of the course of the slide referred to was at an angle of about 40°, the next 500 feet, 20° and the balance of the way about 15° from horizontal. Of course, the upper part of the range is much steeper than this, in places almost perpendicular, but the snow does not accumulate to

any extent on such a steep surface, merely striking against the wall of rock and falling down to where it can stick to the surface until it accumulates to great depth.

“The current of air produced by an avalanche is often terrific. The swiftly moving mass of snow creates an air pressure in front and a partial vacuum behind, producing currents strong enough to destroy buildings untouched by the snow. The difference in air pressure within and outside of a building is sometimes sufficient to actually blow the structure to pieces.

“Of course, avalanches usually run in well beaten tracks; but occasionally the wind will so drift the snow as to throw the slide out of the regular course. This explains why we often see the slide cutting down through timber, which is evidence in itself that no slide has run there for many years before.

“The causes which operate to start the slide are various. When a heavy fall of snow has taken place early in the winter, as soon as it is heavy enough it will move regardless of the time of day or of any other influence. Slides that occur in the month of April are usually caused by the heat from the sun. When a large field has accumulated high up on the side of the mountain, and has been frozen to the earth, it will remain until the heat of the sun loosens it from the bottom. In our locality [Telluride] these slides usually start about 4 o'clock in the afternoon. In loose, freshly-fallen snow, very little is needed to start a big slide. The firing of a gun or a sudden gust of wind may be sufficient. If a small bunch of snow no larger than an orange, drops from a little cliff and starts rolling down the side of the mountain, it may enlarge rapidly enough to start an immense avalanche.”

Additional generally accepted concepts appear in the above excerpts. For example: The sudden collapse of a snow layer is enough to trigger an avalanche. Avalanche debris quickly becomes so dense and tough that it completely immobilizes a victim. Dangerous amounts of snow usually do not accumulate on slopes much steeper than 40°, because the snow tends to slide off such steep slopes in small amounts during the storms. Turbulent air currents associated with some avalanches cause damage beyond the path of the moving snow, and unusual winds can cause unusual snow deposition in the starting zones, which may cause the avalanches to follow unexpected paths.

Although the above ideas are still generally accepted, the idea that spring avalanches occur when the snow which “has been frozen to the earth” all winter is “loosened from the bottom” by the “heat of the sun,” is misleading. Spring avalanches are now considered to be the result of the weakening of snow layers or the lubrication of a snow layer boundary by melt water, which is produced at the snow surface and drains downward. Present-day avalanche authorities would agree, however, that spring avalanches result from an increase in solar energy and that they often occur in mid afternoon.

A later account by Enos Mills (1915), a naturalist and “government snow observer”, who had observed numerous avalanches in the Colorado Mountains, is also informative:

“Snow-slides may be said to have habits. Like water they are governed by gravity. Both in gulches and on mountainsides, they start most readily on steep and comparatively smooth slopes. If a snow-drift is upon a thirty-degree incline, it may almost be pushed into sliding with a feather. A slope more steeply inclined than thirty degrees does not offer a snow-drift any visible means of support. Unless this slope is broken or rough, a snow-drift may slide off at any moment.

“In the course of a winter, as many as half a dozen slides may start from the same place and each shoot down through the same gorge or over the same slope as its predecessor. Only so much snow can cling to a slope; therefore the number of slides during each winter is determined by the quantity of snow and the character of the slope. As soon as snow is piled beyond the holding-limit, away starts the slide. A slide may have slipped from this spot only a few days before, and here another may slip away a few days later; or a year may elapse before another runs. Thus local topography and local weather conditions determine local slide habits, — when a slide will start and the course over which it will run...Slides of this kind — those which promptly make away with new-fallen snow by carrying it down through stream channels — may be called Storm, or Flood, slides. These usually are formed in smooth gulches or on steep slopes.

“The other kinds of slides may be called the Annual and the Century. In places of rough surface or moderate slope there must be a large accumulation of snow before a slide will start. Weeks or even months may pass before storm and wind assemble sufficient snow for a slide. Places of this kind commonly furnish but one slide a year, and this one in the springtime. At last the snow-drifts reach their maximum; warmth assists starting by melting snow-cornices that have been held through the winter; these drop, and by dropping often start things going. The Annual slide does man but little damage and, like the Flood slide, it follows the gulches and water courses. Wind and calm, gravity, friction, adhesion, cohesion, geology, temperature and precipitation, all have a part and place in snow-piling and in slide-starting.

“The Century slides are the damaging ones. These occur not only at unexpected times, but in unexpected places. The Century slide is the deadly one. It usually comes down a course not before traversed by a slide, and sometimes crashes through a forest or a village. It may be produced by a record-breaking snow or by snow-drifts formed in new places by winds from an unusual quarter; but commonly the mass of material is slowly accumulated. This may contain the remnant snows and the wreckage spoils of a hundred years or more. Ten thousand snows have added to its slowly growing pile; tons of rock-dust has been swept into it by the winds;

gravel has been deposited in it by water; and gravity has conducted to it the crumbling rocks from above. At last—largely ice—it breaks away. In rushing down, it gathers material from its predestined way.”

The Storm or Flood avalanche is now called a direct action or new snow avalanche (i.e., it is the direct result of a snow storm). Mills’ Annual avalanche refers mostly to infrequent avalanches that usually run as wet or spring avalanches. The snowpack usually fails in the older layers of snow and may or may not break through to the ground. His idea that the Century avalanche consists of snow from numerous winters is completely erroneous. He seems to be describing ice falls from a glacier. The large, full-depth avalanche may result from unusually large storms, uncommon storm patterns, unusual wind-loading patterns, or some combinations of these events, but in Colorado they involve the snow of only one winter. His observations that the frequency of avalanches varies greatly from path to path is certainly valid.

The newspaper accounts that appear later in this report support additional concepts that may not have been generally understood at the turn of the century but are an important part of our current avalanche knowledge. Some of these concepts and a few of the accounts that illustrate them are:

1. **Many avalanches run during or just after large storms:** Large amounts of fresh snow often lead to vigorous avalanche action [14, 34, 45, 62, 95, 109, 125, 129, 132, 168].
2. **When avalanche and storm conditions are bad, it is wise to avoid travel for a few days:** This allows the new snow to settle and become more stable [95, 108, 135, 149].
3. **Chances for a live recovery after a long burial are much better if the victim is buried amidst debris from a building or has some other type of protection from the snow:** Suffocation is the most frequent cause of death among avalanche victims. Foreign material such as logs or lumber creates many air pockets. It also supports the snow. Such foreign material, however, increases the difficulty of locating the victim by probing and of removing the snow during rescue operations. In the accounts listed here there are four events where people were recovered alive after 14 to 18 hour burials and one of a live recovery after 49 hours [14, 77, 78, 110, 110A, 118, 126, 163A, 172, 172A, 172B].
4. **Buried victims can often hear sounds from above, but can seldom make themselves heard:** This phenomenon has been reported from many areas of the world. The reason for it is not certain. It may be that the absence of sound in the snow makes it easier for the victim to detect faint sounds from above; whereas the normal sounds above the snow mask faint sounds coming from the buried victim. So far snow has not been shown to be a one-way filter for audible sounds [14].
5. **People can be killed by exceedingly small avalanches or can survive unbelievable encounters, depending on local conditions and luck:** The avalanche that killed W.M. Wooding in April 1884 near Silver Plume was only 8 or 10 feet wide and less than 300 feet long [20]. The avalanche that killed six people at

the Smith-Hill Coal Mine near Crested Butte in January 1883 was reported to be “not a very large one” [117]. On the other hand, there were many reports where people were carried 500 to 2000 feet by avalanches and survived with either minor or no injuries [3, 13, 20, 48, 117, 135, 137, 138, 163, 163A, 179].

6. **Rescuers should make a quick search for any visible evidence of buried victims:** It is important to locate and free buried victims quickly. On the average, the chances for a live recovery drop below 50-50 after the first half hour. Locating the victims by any method other than visual contact is very time consuming. In the cases listed below rescuers located the victim after seeing either a hand or a foot extending above the snow [48, 72, 91, 138, 172A].
7. **People will often rebuild or remain in dangerous areas unless restraints are imposed and enforced:** Certain of the mines were good examples of this. Many of them were hit or threatened repeatedly [19 & 40; 40 & 42; 36 & 43; 49, 51, 53, 54 & 81]. There are also accounts of the same home being hit in 1913 and again in 1921 [59, 77, 78].

In addition to the above, one case was found [74] when an avalanche occurred at about the same time as earthquake tremors were recorded nearby. This is an interesting interaction that is not well documented in Colorado. McSaveney (1978) and Field (1965), however, give accounts of rock and snow avalanches caused by a large earthquake in Alaska, and Higashiura and others (1979) report several small avalanches caused by an earthquake in Japan.

Severe Winter Storms

The winter of 1898-1899 has been called the “winter of the big snow” for most of the mountainous area of Colorado. Gilliland (1980) reports that in Summit County “on November 27, 1898 flakes began to tumble from a cloudy sky, by 9 am the next day five feet of snow covered the ground. Snow fell every day from November 27 until February 20. Snow cover rose to roof-top levels. Tunnels across main street were used to connect business in Breckenridge. In Montezuma snow shoulder-to-chin-high, accumulated overnight. Old Dillon and other Summit County towns were buried [by snow] high as two-story buildings. After the “winter of the big snow” (1898-1899)...came a spring of blockbuster snowslides...Grey’s Peak snow melt set off a massive avalanche that reduced the town of Rathbone [formerly called Decatur] to splinters on a fine spring 1899 day.

In Leadville Blair (1980, p. 203-208) says during two weeks in January 1899, almost five feet of snow had fallen. The railroads were stranded and roads drifted and impassible. On January 28, three Rio Grande engines hooked in tandem set out to clear the Blue River Branch over Freemont Pass. A few miles out of Leadville an avalanche hit the lead engine and rolled it over. The second engine was thrown to its side. The third engine stayed on the track but the caboose was swept off the track and buried in the snow. In early February a telephone line repair crew saw

thirty six snowslides in a fourteen mile stretch between Leadville and Twin Lakes. Snow was nine feet deep on the level in Twin Lakes on February 22. An additional five feet of snow fell during February and almost four feet during the first six days of March. Between January 15 and March 28 (10 weeks) 187 inches of snow fell on Leadville. One day during this period a team of horses hauling a load of lumber to the upper end of Big Evans Gulch was stopped when the runner of the sled hit the top of the steeple of the old Evansville School.

Vandenbusche and Myers (1970, p. 30-31) quote the *Denver Post* for February 11, 1899 that the winter 1898-1899 was the worst old timers in Marble, Colorado could remember. The road from Crystal to Marble was under ten to fifty feet of snow and temperatures dropped to -35 degrees F. on several occasions.

The railroads were particularly hard hit. On February 4, there were twenty-five avalanches across the railroads in the 34.7 miles between Dickey and Leadville. The next day, five locomotives were trapped in the snow and avalanches debris in the eleven miles between Glenwood Springs and Shoshone (*Denver Evening Post*, February 4 & 5, 1899). Snow blocked the railroad at Snowden, ten miles south of Leadville (Blair 1980, p. 204) and an army of snow shovelers and snow plows failed to keep the Colorado Midland Railroad open near Hagerman Pass west of Leadville (Eberhard 1974, p. 230).

As bad as this winter was, old time railroad men said the winters of 1871-72 and 1884 were as bad if not worse for the railroads. (*Denver Evening Post*, February 5, 1899, p. 8.)

Other shorter periods of heavy snowfall were recorded. March 8-10, 1884 was a period of heavy snow and strong winds on Aspen Mountain. Old timers said it was the worst storm in the Roaring Fork Valley in the past five years. Snow depth on Aspen Mountain was estimated to be 10 feet on the level [125].

In early February 1909, the railroad loop between Georgetown and Silver Plume was closed by heavy snow as were several of the other mountain railroad lines [177]. The 1908-1909 winter was considered one of the hardest winters since 1884 in the Eagle River Country [178].

Tables 3 and 4, pages 220 and 231 emphasize the well established fact that heavy snowfalls in steep terrain produce numerous avalanches. Fatalities and property damage depend on how many people, structures, trains or cars are in the vicinity. In our study almost 14 percent of the recorded fatalities happened in the three months of January, February, and March 1899. Miners, teamsters and railroad men were the usual victims of past years. In years to come, the victims may well be cross country skiers, snowboarders, and snow mobilers seeking fresh powder on steep, timber-free terrain.

Early Avalanche Control

Apparently, primitive avalanche control measures were routinely used in Colorado during the late 1800's and early 1900's. Enos Mills (1915) discussed control methods and even referred to the Swiss practice of revegetating avalanche areas as follows:

"Although a snow-slide is almost irresistible, it is not difficult, in many localities, to prevent slides by anchoring the small snow drift which would slip and start the slide. In the West, a number of slides have been suppressed by setting a few posts in the upper reaches of slopes and gulches. These posts pinned fast the snow that would slip. The remainder held its own. The Swiss, too, have eliminated many Alpine slides by planting hardy shrubbery in the slippery snowy areas. This anchorage gives the snow a hold until it can compact and freeze fast. Shrubbery thus is preventing the white avalanche."

Mills (1921) recounted his participation in a more adventuresome method of avalanche control as follows:

"Next morning I was up early and all ready when the foreman came out and asked, 'Has the Ferguson run yet? Well, then, tell Sullivan to start her.' Looking in my direction, he added, 'Tell him to take this fellow along.'

"I followed Sullivan's example and seized a ten-pound rock fragment on the dump, then hurried along, trying on web shoes to keep up with Sullivan's long skee strides. 'The Ferguson,' I learned, as we hustled along, was the name of a gulch; and the thing the foreman wanted started was the snow in the upper end. Several times each winter, as soon as snow from storm or wind accumulated in the gulch or on the summit rim, the snow ran out in a slide—the Ferguson slide. When it failed to start promptly of its own accord after a heavy snowstorm the miners started it. It was dangerous to use the road over the gulch, half a mile below, with the snowslide impending. A slide of several hundred tons of snow could rush the full length of the smooth steep-sided gulch in a minute or less, although it was from a quarter to a half a mile deep and more than a mile long.

"The mine building stood on the top of the plateau a short distance from the head of the gulch. Whirling winds made a current down the gulch, but as they swept over the rim the current was broken and much of the wind-carried snow was dropped forming in a few hours an enormous snow cornice at the upper rim of the gulch. Here we stopped.

"'Throw her there,' directed Sullivan.

"My ten-pound rock made a snowy splash. Instantly a wagon-load of snow slipped, then the entire cornice caved off and the whole mass of snow in the upper end of the gulch started sliding. With a rush and roar it swept down the gulch. Whirling, back-flying snow filled the sky above the canyon with snowflakes and snow dust. The Ferguson had run."

Modern day avalanche control specialists occasionally see avalanches release when their two-pound, hand-thrown explosive hits the snow, well before it detonates. It is still not known how often and for how long such hair-trigger conditions exist.

Brown 1977 (p. 92) reports a variation of this technique used by the miners at Crested Butte. On their way to work in the morning they often strapped sticks of dynamite to their legs under the trousers to keep the explosive warm. When it was

necessary to cross a potential snowslide path, the miners would put a few sticks on long poles and detonate them. The concussion {often} caused the slide to run.

Early structural measures employed to control avalanches were apparently successful. Enos Mills (1921) documented this success at one mine as quoted below:

“One mine which I visited was on a steep slope above the tree line and not far from the top of the mountains where winds blew deep drifts. Twice these snowdrifts had slipped, and the huge slides had swept down upon the buildings and carried them, smashed, to the bottom of the canyon a mile below. But for several years these snowdrifts had not slid, for they were securely anchored by four rows of stout posts across the slopes where snow accumulated. Sometimes stone walls are used for the purpose. The snow settles over, hangs on, is held fast.” ...

At one mine site where structural control was unsuccessful, Mills reported that “two men were placed on lookout after each snowstorm to fire warning shots the instant the slide started.”

Rickard (1907) also testified to the success of structural defenses as quoted below.

“...In Ouray, Silverton, Telluride, and Creede—all in the region formerly known as ‘the Silvery San Juan,’ but now identified chiefly with profitable gold mining—are localities where snowslides are of yearly occurrence. One of the worst seasons in this regard was the spring of 1884, when a series of slides came down into the canyon of the Animas, below Silverton so as to blockade the Rio Grande Railroad to Durango. In March 1902, as already related, 18 men were killed at the Liberty Bell Mine, above Telluride; the mill buildings were swept away and the tramway was severely injured. Since then the management of the Liberty Bell has built a V-shaped crib-work of solid timbers, filled with rock, in the path of the slide that did this damage. Their foresight was rewarded during the spring of 1906, for the snow broke away as before, but the slide was divided by this obstacle and did comparatively little harm.”

Early defense structures of the type described by Rickard were also mentioned by Armstrong (1976) who pointed out that earth mounds were also used to protect at least one mine in San Juan County.

Vandenbusche and Myers, 1970 (p. 90-96) report that by 1915 the mill at Marble, Colorado was well protected from avalanches by a fifty-foot high retention wall made of huge blocks of excess marble. The wall, located on the north bank of the Crystal River and leaning slightly toward the river and the mountain, intercepted the avalanches and deflected most of the snow back into the river. This wall successfully protected the mill from three massive avalanches that accompanied a month long series of severe snow storms that ended on January 26, 1916. It was obvious, however, that had there been another avalanche it would have flowed over the accumulated snow and overtopped the wall. Later that year the wall was extended upward another fifteen feet. This solved the avalanche problem at the mill.

Modern structural control of avalanches is discussed in the *Avalanche Handbook* (Perla and Martinelli, 1975) and several other publications and translations (Frutiger and Martinelli, 1966; Mears, 1981; U.S. Department of Agriculture Forest Service, 1975; and Swiss Federal Institute for Snow and Avalanche Research, 1961).

Case Study Possibilities

One of the objectives of this study was to acquire data on runout distance for very large avalanches. Once in a while, for reasons not completely understood, an avalanche will run much farther down its path than usual. This is the type of rare event that has the potential for catastrophe if it were to occur in a heavily populated area. For this reason it is important to allow for these events when mapping avalanche hazards for zoning purposes.

In order to do this with the empirical calculation procedure now available, we must know the appropriate friction coefficients to use to predict the runout distance for this type of avalanche. One way of acquiring this knowledge is to calibrate the equations against known events called case studies. A complete coverage of the techniques used and 12 examples are given elsewhere (Leaf and Martinelli, 1977).

Several of the following newspaper articles, while not technical, contain sufficient data to be useful for this purpose. These include the avalanches at Twin Lakes in May 1884 [128]; Willihan Gulch on February 18, 1899 [34, 34A, 34B]; Seven-Thirty Mine (in Brown Gulch) on February 25, 1899 [36]; Monarch in February 1907 [172, 172A, 172B]; Sherman Mountain in April 1921 [77, 78]; and at Mount Owen [Ruby Peak] January 1883 [166]. Other events may also be useful if old mine locations and building sites can still be located in the field.

We can use the Brown Gulch avalanche of February 25, 1899 as an example of a case study for runout distance computations. Newspaper account [36] says the avalanche "...broke away from Brown Mountain near the Seven-Thirty Mine...[it] started at three points, all joined in a mad rush down Brown Gulch...and terminated on the banks of Clear Creek a mile distant from the starting point."

Although this is not as explicit as we would like, it is useful. We assume from the description and from the terrain given on the topographic map (Fig. 19; page 86) that one of the starting points was on the southeast flank of Brown Mountain at an elevation of about 11,160 feet, northwest of the Seven-Thirty Mine. Another starting point could have been on the north side of Brown Gulch at an elevation of about 11,200 feet just above the "G" in the word Gulch (Fig. 19; page 86).

Even though these points are not a mile from the stream, they are likely places for an avalanche to start, and the distance given is almost surely an estimate.

A terrain profile (Appendix A) from the first starting point down the gulch and out to the bank of Clear Creek shows a gradient that varies from 24° to 31°. We consider the runout zone to start at an elevation of about 9,280 feet where the gradient decreases to 6.4°.

To use the procedures outlined elsewhere (Leaf and Martinelli, 1977) to calculate runout distance, we must choose values to describe the avalanche and the terrain over which it traveled. The average depth of snow that broke away from the starting

zone (h') gives an idea of avalanche size. Experience has shown this varies from 0.5 m for commonly observed avalanches to about 1.2 m for very large avalanches (Sommerhalder, 1966). Since this avalanche ran during a period of very great snowfall [74], we chose 1.5 m for h' to indicate an unusually large avalanche. Next, we selected a value of 0.15 for the coefficient of sliding or kinetic friction, μ . This relatively low value indicates the avalanche ran in fresh, dry snow during the cold part of the winter. Next we set a value of 600 m/s^2 for the coefficient of turbulent friction, $\hat{C}$, to indicate the avalanche ran down a gulch or gully (Leaf and Martinelli, 1977, p. 5). The runout distance computed from these values (Appendix A) was 119 meters (390 feet) — about half the observed runout distance of 700 feet. The value of $\hat{C}$ was then increased to 750 m/s^2 , a value usually used for avalanches that run down open or unconfined mountain slopes. This was done because it was thought such a value might also be appropriate for gullies with a deep snow cover. The runout distance calculated with $\mu = 0.15$, $h' = 1.5 \text{ m}$, and $\hat{C} = 750 \text{ m/s}^2$ was almost exactly 700 feet.

This one example is not conclusive evidence that these μ and $\hat{C}$ values are the best to use for this type of avalanche. However, if this approach is used on enough case studies, eventually we will learn which coefficients engineers and planners should use to compute runout distance for a wide variety of snow and terrain conditions.

Avalanche Chronology

The accounts given here begin during the mining era of the mid-1800's and end in 1950. Since the early 1950's more complete and systematic avalanche records have been taken as part of the Forest Service's avalanche studies (Gallagher 1967, Williams 1975, Williams and Armstrong 1984) and the continuing avalanche forecasting program in Colorado (Logan & Atkins, 1996).

During the period 1861-1951 for the Northern Front Range and 1862-1945 for the Central and Northern Colorado Mountains, we have been able to document that 209 people were killed in avalanche accidents [Tables 1 and 2; pages 218 and 219]. In addition, hundreds were injured or caught in avalanches and survived uninjured. Of the 209 deaths, 85 were in February (about 41%).

Many of the multiple-death accidents involved boarding houses or homes. Some of the most tragic accidents involved family groups. All six children of the widowed Mrs. Doyle were killed at Woodstock in March 1884 [126]. Four members of the Reed family died when the Whale Mine boarding house in the upper Hall Valley about 3 ° miles south-southeast of Montezuma was hit in January 1877 [9]. Mr. and Mrs. Domenico Destefane and their two children were killed in their home near Silver Plume in February 1899 [34, 34A, 34B]. Mrs. Sweezy was killed, her husband and one child were lost and presumed dead, while another child was rescued uninjured, at Tomichi in March 1899 [158, 158B]. The six Nason children, 4 to 19 years of age, were orphaned when their parents were killed and their home demolished at Monarch in February 1907 [172, 172A, 172B].

Two years after the Woodstock accident, Mrs. Doyle filed suit in the United States Court against the Denver, South Park, and Pacific Railroad. She charged the railroad company had cut all the timber off the mountain for ties and timber, thus making the avalanche possible [133]. She claimed five thousand dollars per child plus twenty thousand for injury and damage to herself and personal property. The outcome of the trial is not known to us.

Avalanches were widespread and very destructive some winters and hardly noticeable in others. The successive winters of 1882-83 and 1883-84 accounted for about 28% of the avalanche fatalities in the Central and Northern Mountains for the 88 years following 1862. These were not particularly bad winters in the Northern Front Range with only one death in each of the winters. The winter of 1898-99 was bad in both areas, with 19 killed in the Northern Front Range and 10 killed in the Central and Northern Mountains. January and February 1899 were months of tremendous storms and great avalanche activity all over the state.

The chronology of avalanches is summarized in Tables 3 and 4 (pages 220 and 231) for the two regions. These tables also give data on location, victims, damage, and sources of information. Dates given in column 2 of the tables and at the beginning of each newspaper account are the dates of the reports, not necessarily the dates of the avalanches.

Some Human Interest Highlights

The newspaper accounts contain many interesting and informative details of the accidents and associated weather events. They also give a good feeling for the concerns and attitudes of the people of that era. The unique and individualistic writing style is refreshing and in sharp contrast to the syndicated news reporting so common today. A few of the more unusual, even bizarre, events are presented here.

The capricious nature of avalanches is illustrated by an article in the *Georgetown Courier* for Saturday, April 23, 1921 which reported a small avalanche near Silver Plume [79] as follows: “The slide at the Plume [Silver Plume] swept a sitting hen about 400 feet. When found, the hen was still on the nest, with only two broken eggs. Snowslides had no terrors for that chicken.”

Accounts 137, 110 and 110A are examples of men whose time had not come. The first tells about a man caught in an avalanche that buried him to his waist. Before he could free himself, a second avalanche hit him and left him encased, “to his neck in a vice of ice, earth and snow.” Then a third avalanche covered his head, pinned his right arm to his side, and left his other arm sticking up through the snow. Using his bare hands, he freed himself after four hours of digging. The last two accounts concern a man who was in a mine shaft loading an ore bucket that his partner was lifting to the surface with a windlass. An avalanche overran the spot. The man on the surface held onto the windlass until the avalanche passed. The other was at the bottom of the snow-filled mine shaft and presumed dead. Rescuers found him 49 hours later in an “upright position, the pick above his head and held by his left hand...the palpitations of his chest were barely perceptible...{his}

face was terribly discolored...chin forward on his chest...extremities were cold as ice...arms were rigid and stiff...eyes were fixed.” The rescuers got him to the surface and pried open “his teeth, which were set in the cold embrace of death” and “administered some whiskey to him.” He regained consciousness after several hours under a doctor’s care and said he had remained conscious for about 8 hours after the snow hit him, but could remember nothing after that. He was expected to recover in a few days.

Dogs figured in several of the accounts. In one case [95] three men and a dog were caught and rolled several hundred feet by the Rothchild avalanche near Montezuma. According to the article, “After pawing himself to the surface the shepherd {dog} dug the snow away from the face of his master, then proceeded to do the same for Brophy, and then located the body of Burch.” Burch was dead from suffocation. The other two, after freeing themselves and trying to revive Burch, walked to Montezuma. In another case [124] an avalanche victim’s dog was rescued alive from under a bunk in a snow-filled cabin 33 days after the accident that killed his owner and 4 other men. The first rescue party missed the dog when the men’s bodies were recovered. A later party, searching for some of the victim’s personal effects, found the dog and nursed him back to health. In a third case [172B] H.L. McCabe said that just before the avalanche of February 4, 1907 hit the town of Monarch, his dog came to the bed in which he was sleeping and pulled the covers from him, but before he had more than time to wonder at the dog’s strange action, the crash came. Did the dog know that a calamity was impending and try to warn his master?

Several other interesting incidents were reported in connection with the Monarch avalanche of February 4, 1907 [172A, 172B]. The reporters seemed to feel it appropriate that “Steve Skinner, owner of the saloon, was found on the floor of his place of business with a keg of beer on his chest. His head was driven through the floor and his skull crushed...It was evident that his death was instantaneous... Brains scattered about furnished mute testimony of sudden death.” The other incident is on a more positive note. Five of the Nason children were asleep when the avalanche struck and demolished the boarding house which was their home. They were thrown out the second story window and covered with flying snow. Four were quickly dug out. “The baby of the family, a bright 4-year-old boy, was found uninjured...after being buried fourteen hours. He was tucked away under a section of the roof, snugly rolled up in a feather bed...A section of the roof had fallen over him in such a way that snow and rock could not reach him, but [he] was in such a small space that he was overlooked for a long time. He was happy and laughing when taken out.” ...

The most gruesome account concerns the 10 miners killed at the isolated Homestake Mine near Tennessee Pass [130]. Although the men were not found until late April, the avalanche probably occurred two months earlier. They were all in a bunkhouse that was crushed and completely covered with avalanche debris that was so hard it had to be cut with an ax. The body of one of the men “bore no trace of injury...{it} stood erect, the head slightly thrown forward as if listening, the arms half raised as in defense, the whole position indicating apprehension...the

bodies of three men were found in an upper bunk, clasped in each others arms...the attitude indicated suffocation...The limbs of the poor unfortunate were so strongly interlocked as to require the united efforts of six or eight men for a full half hour to separate them.” Others were found as though they had never awakened, one was in “the attitude of prayer,” still others were crushed by logs when part of the building collapsed. All of the faces were covered with a “half inch of white mold” that made identification difficult.

A picturesque description of how hard it was snowing on top of Independence Pass during an April storm in 1886 [149] is given by a man who said he “had one horse by the tail and another by the bridle but could see neither of them.” This storm disrupted stage travel over Independence Pass and caused a number of avalanches.

Discussion and Conclusions

Even though it is generally agreed that newspaper articles tend to emphasize the more spectacular events and sometimes sacrifice accuracy for timeliness, a great deal has been learned from these old accounts. The era covered by this study was one when many people were living in places dictated more by the presence, or suspected presence, of minerals than by safety considerations. Most of the people were from the Midwest or East and had only recently moved to the mountains. In spite of this, they seemed to have a working knowledge of many of the basic concepts of snowpack stability still accepted by modern mountaineers and snow scientists.

In spite of the relatively heavy mountain populations and occasional large accident, fatalities for the two areas combined averaged only 2.3 per year for the 89-year period. Losses were erratic with 41% of the fatalities in the five biggest years and 34% in the five biggest individual months. There were nine accidents with 5 or more fatalities. These account for 33% of the total.

The largest single accident took 13 lives at the small railroad community of Woodstock between Pitkin and the Alpine Tunnel on March 10, 1884 [126]. Two other accidents took 10 lives each. One occurred above Silver Plume on February 12, 1899 when an avalanche demolished five homes [34, 34A and 34B]. The other, at the Homestake Mine near Tennessee Pass, is thought to have happened in late February 1885 when a bunkhouse was covered by an avalanche [130].

Field examination of the old sites has been informative. The path on the east face of Ruby Peak mentioned in accounts 116 and 152 is very large. It and other paths such as those in accounts 34, 36, 77, 78, and 128 have long and well-defined runout areas that help establish the appropriate friction coefficients to use when computing maximum avalanche runout distance and impact force. Some of the other sites revealed small and innocuous paths whose appearance belies their deadly past. For example, the path down which the avalanche ran that wiped out Woodstock is not large nor are the ones that produced the avalanches that hit the Magna Charta Mine near Tomichi [122, 123, 158, 158A]), or the Benzo [Benso] home

in Silver Plume [59, 77, 78]). The avalanche that hit Monarch on February 4, 1907 [172, 172A, and 172B] ran down a path that has since been almost completely removed by the expansion of the limestone quarry.

These smaller avalanche paths are perhaps the most dangerous of all. The large paths are obvious and demand respect, even from inexperienced individuals; the smaller ones are easy to ignore and to misjudge.

The relatively long period of record furnished by these accounts gives a glimpse of just how severe conditions can be. Most people familiar with Colorado weather and avalanche conditions during the past several decades would not expect avalanches in the vicinity of Ward, Colorado, to be large enough to roll locomotives off the track. Yet this happened on April 18, 1901 [45]. Nor would they expect people to be killed in their homes in Idaho Springs by avalanches (Dec. 31, 1913 [69]). The severity of some of the storms is illustrated by the weather mentioned in the accounts. In April 1862 the snowcover at Georgetown was 5 feet deep [62]. It was 4 to 4° feet deep on numerous occasions [62, 77, 78 and 157]. The large storm of late January 1899 left 8 feet of snow on the level at Breckenridge [157]. Snowfall at Georgetown reached 89 inches during the first week of December 1913 [77] and 66 inches during one week in April 1933 [83]. “One of the worst storms ever experienced in Colorado” hit on February 9-10, 1909 [177]. Nearly all the passes were blocked by snow. Poncha, Cumbres, and Marshall (which had not been closed for years) were all closed as was the Georgetown loop of the Colorado and Northern Railroad. Tennessee Pass, which seldom had problems, was kept open with difficulty.

The long period of record also emphasizes that avalanches are relatively rare events that are highly dependent on weather factors. Long periods of little or no action are common. Highly active periods vary in length and frequency. Continuous avalanche records are needed to document the location of as many avalanches as possible, and to assure accurate information on the occasional, very large or unique event, since these are the ones that pose the greatest threat.

Newspaper Accounts Concerning Avalanches in the Northern Front Range of Colorado 1861-1950

Places mentioned in these newspaper accounts are listed alphabetically in Table 5 (page 245). Many are also marked on the topographic map segments that appear as Figures 16 to 19 (pages 83 through 86).

1. *Rocky Mountain News*, Monday, March 6, 1861

"From Mr. C. M. Ferrell of Golden City, who has lately returned from a trip up the North Fork of the South Platte [also called Hall Valley, see [9]], we learned that a man was lately lost while prospecting in that mountain district by being precipitated in a snow slide down a steep declivity, nearly a thousand feet. The man's name was J. T. Shetler. His brother went down in the avalanche with him but was dug out...All efforts to find the missing man were useless. The avalanche was an immense one...[it] carried with it large trees, huge rocks, and vast masses of loose earth and fallen timber.

[From the Snow Slide Disaster file at the Colorado Historic Society Library, Denver. The original article was not seen.]

2. *Colorado Miner*, Thursday, February 26, 1874

Fatal Accident

"The following comes to us from Montezuma under date of Feb. 17th: No doubt the many friends of Charles Fix, well known in and around Georgetown, will be pained to hear of his death. He went out yesterday morning to shoot some quail, and was gone so long that his brother, becoming alarmed, went in search of him. He followed his tracks to the edge of a large snow slide when all trace of him was lost. It is supposed that he was caught by the slide and buried beneath it. Every effort has been made for the recovery of his body, but all in vain so far. There are but few persons in the gulch at this time, and there is also great danger of another slide, so that comparatively nothing can be done.

3. *Colorado Miner*, Saturday, April 25, 1874

"Last Wednesday a snowslide occurred at the Stevens Mine, a large body of snow slipping from the dump a distance of thirteen hundred feet to the valley below. Mr. Charles Roach, a workman at the mine, was carried

down with the avalanche, the entire distance, fortunately escaping with his life, but having his left hip dislocated. He was brought down to Silver Plume, and Drs. Guthrie and Lemon were called and reduced the dislocation. It was a rapid ride and fortunate escape."

4. *Colorado Miner*, Saturday, January 16, 1875

"A snow slide occurred last Sunday on Kelso Mountain near Baker Mine. Mr. R. H. Wood was caught and carried about 700 feet, but he fortunately escaped with only a crippled hand."

[The Baker lode is on the east slope of Kelso Mountain west of the Stevens Mine at an elevation of about 12,000 feet (Lovering 1935, p. 69).]

5. *Colorado Miner*, Saturday, March 27, 1875

Snow Slide

A canyon filled with 20 acres of snow

"About noon on Wednesday, the rapid tapping of the fire bell caused the immediate congregation of a large crowd on Alpine St., when the word was passed that a snow slide had occurred in the gulch next below Silver Creek, coming into the valley west of and about opposite Stewarts Mill.

"Instantly shovels {were} procured, and several hundred men were rushing down the valley to the scene of the disaster, some on horse back, others in wagons but the majority on foot. Reaching the gulch, it was found to be filled up with boulders, green trees torn up by the roots, and great masses of snow, as far up as the eye could grace, while far above, in a great horse shoe at the head of the mountain could be seen the line showing where the snow drift had broken away and slipped down into the narrow gulch.

"James Fallon with his brother, had been working a lode in that vicinity, and occupied a cabin situated on the side of the gulch. His brother and Jasper Bell had gone up on the mountain some little time before the accident occurred, leaving James in the cabin. He heard a roaring noise, and stepped out of the cabin, only to see the rushing avalanche of boulders and snow coming down the gulch with a face of nearly 15 feet.

"Almost instantly he was involved in the shower of flying rocks, and jumped behind a large pine tree for protection. A moment afterwards the tree was torn up by the roots, and Fallon was carried down the gulch with

the tree lying across his breasts. Fortunately an immense rock, that would weigh several tons, struck the tree with such force as to hurl it off the body, releasing him from his most imminent peril, but he found it impossible to extricate himself from the avalanche, and was carried down about 400 feet to a point where the central mass crowded him out upon the side of the gorge.

“The cabin was completely covered with snow, but not moved from its place, as it was out of the main force of the slide.”

[The victim’s name was given as O’Fallon in the *Denver Daily Transcript* for March 27, 1875.]

6. *The Greeley Tribune*, Wednesday, April 14, 1875

“From Fairplay Sentinel — Early in the morning of the 4th the miners employed on the Champion Lode, Geneva district...were startled by a low rumbling noise—almost immediately the bunk house was crushed and buried in an immense snowslide. Six men were in the house — of the six, one was injured slightly.”

[From the Snow Slide Disaster file at the Colorado Historic Society Library, Denver. The original article was not seen.]

7. *Colorado Miner*, Saturday, April 24, 1875

Dreadful Disaster

Three Men Buried Under an Avalanche

“Some months since three miners, Wm. G. Morgan, Chris Jensen, and Patterson Martin, bought a mine called the Silver Queen, which they were engaged in working up to the day of their sudden and tragical death. The mine is located high up on Sherman Mountain, over 2,000 ft. above Silver Plume. The cabin occupied by the miners was built of logs, and located in a little sag or depression, some 300 ft. distant from the mine, and near the foot of a cliff that towered above it nearly 600 ft.

“The men had not been seen for some time, but nothing very strange was thought of it, no regular road or trail ran by the mine, and it was too far away for the miners to come down except on business. On Friday of last week, two of Jensen’s friends, concluded to go up and see how he was getting along. When they reached the mine, they saw that a snow slide had occurred from the beetling cliff above, unroofed the cabin, and buried it eight feet deep in the snow.

"On Saturday morning a large number of men went up to the mine. The slide had evidently swept off the roof, which was carried some little distance away, without disturbing the walls. The snow had then filled the house and was packed in hard and frozen.

"It will perhaps never be known just when the avalanche occurred. From the fact that the unfortunate men were in bed, it is evident that it must have happened after night. The fact that the bodies were frozen hard, and that the snow was also frozen around them, leads to the general belief that the slide probably occurred about the time the one took place below town which caused Fallon's death." [5]

[Account 34B says this avalanche was in Willihan Gulch. The major avalanche of February 12, 1899 occurred in Willihan and the adjacent Cherokee Gulch. See accounts 34, 34A and 34B.]

[There is another account of the Morgan-Jensen-Martin accident in the *Weekly Rocky Mountain News*, April 28, 1875 (p. 4, c2).]

8. *Colorado Miner*, Saturday, February 19, 1876

Fatal Accident

A Snow Slide Carries a Man over a Precipice

"Charles Ritchie lost his life on Democrat Mountain last Tuesday. He was coming home with Mr. Thomas, with whom he was boarding, and when just over the brow of the mountain, 1,500 ft. above Churches Mill, in crossing the gulch they lost the trail, and went lower down to cross. In doing so, they had to cross a field of snow. Mr. Ritchie sat down to slide, and the moment he did so the snow started. Mr. Thomas, was only about three feet from him, and the snow started above and under him, but being on his feet, he succeeded in reaching the edge, and saving himself.

"Mr. Ritchie, however, was carried down the mountain side and over a precipitous ledge of rock 50 ft. high landing him near the end of a wood slide. He was seen falling, and before Mr. Thomas reached town for the purpose of giving the alarm, his body had been found by parties who hastened to the scene of the terrible disaster. When found, life was extinct, his skull and jaw being literally smashed.

"The accident occurred at a place within a quarter a mile of where James Fallon was killed last year [5]. The unfortunate man fell, and rolled, and slid a distance of nearly a thousand feet."

9. *Weekly Rocky Mountain News*, Wednesday, January 17, 1877 (p. 3, c. 3)

Snow Slide

Eight Persons Buried in the Mountain of Snow

"One of those fearful visitations peculiar to all mountain countries, and known in Colorado as a snow slide, occurred at the head of Hall's Gulch, Park County, at 10 o'clock on Sunday morning last, sweeping the boarding house of the Whale Mine a quarter of a mile down the gulch, and burying its inmates, eight persons in all, under a mountain of snow, from which the bodies can not be rescued until the summer thaw reduces the drift. Owing to a break in the telegraph line between Morrison and Hall's Gulch, information of this terrible accident did not reach Denver until last evening, when Hon. Ziba Surles was informed of the details through a letter from J. McDonald, the operator of Grant, dated January 9.

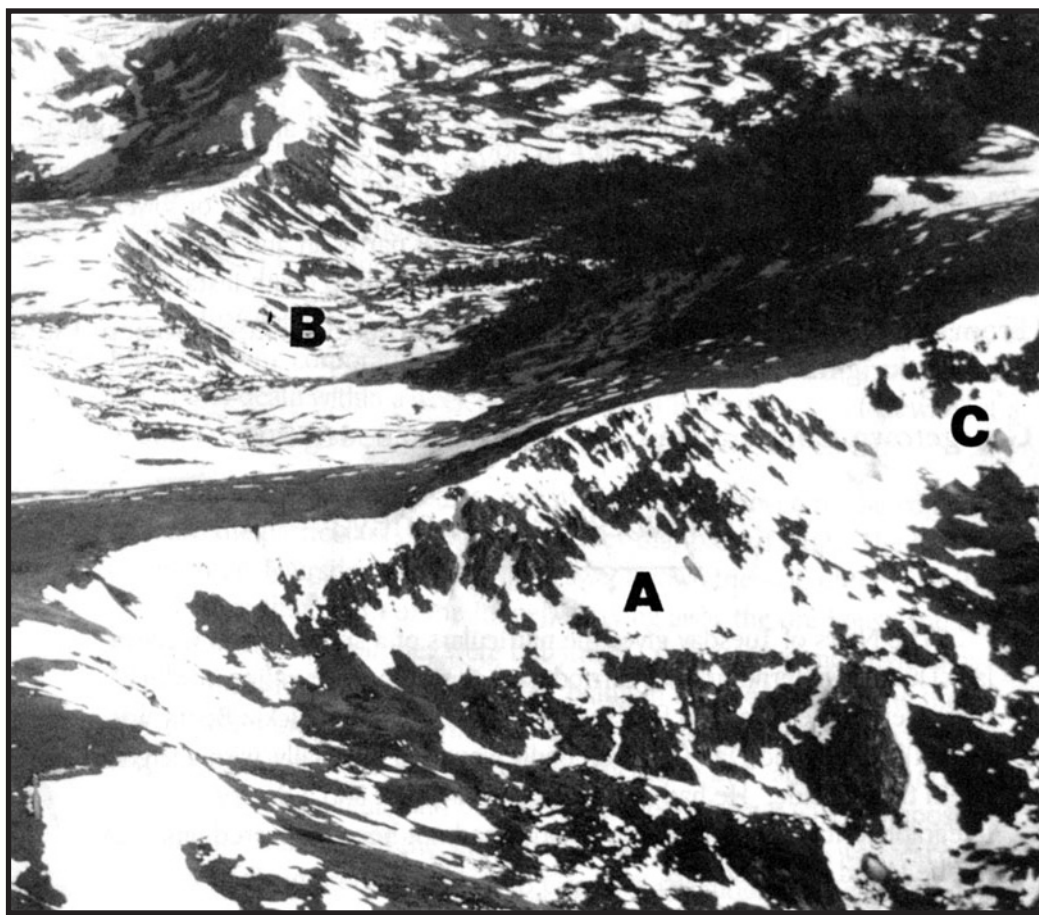


Figure 2. — Aerial view of upper Hall Valley, A, and upper Deer Creek, B. The approximate location of the Whale Mine is indicated by C.

"As near as can be ascertained the boarding house containing six men, one woman and a child, and it is said that one of these escaped, though a letter from D. N. Cassell failed to confirm this item of good news, but says all the inmates were buried beyond reach. James, John, and Matthew Reed, and the child of the latter, together with J. H. Ralph, are among the lost. The woman's name is not given, nor are the names of the other two men. The Reed's have relatives or friends in Central, who have been informed by telegram from Morrison of the sudden and terrible events under notice."

[This same article appeared in *Greeley Tribune*, Wednesday, January 17, 1877 (p. 2, c. 5). Another article appeared in *Colorado Miner* for February 19, 1877.]

[The Whale Mine is located at the head of Hall Valley about 3-1/2 miles south of Montezuma. It has seven adits between 12,100 and 12,530 feet (Lovering 1935, p. 113).]

10. *The Greeley Tribune*, Wednesday, January 17, 1877

"Details of a 2nd fatal snow slide came from Mr. G. W. Lindgreen, superintendent of the Champion Property at the head of Snake River, who reports destruction of the company's building by an avalanche in night of January 8, between 11 and 12. He and three other men were in one of the houses, Moses Proffit, J. Ruebard and the cook Peri Claus, better known as 'French Pete.'

"The building was about 1000 feet above Snake River and 800 feet from the summit and right under a ledge which was supposed to protect the building in case of an avalanche. When it came it took the front or lower edge of the house and crushed it taking the roof partly off and filling the house. French Pete was in a lower bunk and crushed to death instantly." ...

[From the Snow Slide Disaster file at the Colorado Historic Society Library, Denver. The original article was not seen.]

11. *Georgetown Courier*, Thursday, February 20, 1879

Snow Slide at Geneva

"The News of Tuesday gives the particulars of a snow slide at Geneva last Thursday afternoon, that carried away the Company's office in which there were three men, and four men who were outside. Nickie Benny was instantly killed, and Dan Cameron badly wounded internally, with a frightful cut in the left side. He had been removed to Grant and a doctor telegraphed for. Bruny's [Benny's]¹ body had not been recovered, and may not be found before spring.

¹ Throughout these accounts there are many discrepancies in the spelling of proper names. This is probably due to reporters using phonetic spelling for unfamiliar names. In some accounts sic or a parenthetical spelling is given.

"The slide is said to have been a mile and a half long and a half mile wide. The timbers of the office, which were 12 x 14, were broken into bits not over a foot long.

"Friday evening another slide occurred near the same place that killed twelve pack horses and jacks and wounded another. A number of men were covered up but none lost. Six slides have occurred up Geneva Gulch since last Thursday evening."

12. Georgetown Courier, Thursday, February 27, 1879

Geneva Avalanches

"The frequent occurrence of avalanches, or snowslides as they are more commonly called, in Geneva Gulch, has already given that section a reputation that will cause it to be remembered with as great dread as those sections of the Alps where so many lives have been lost in the past by the same destructive agent—the avalanche.

"Geneva Gulch, situated almost directly south of Georgetown and about twenty miles distant, is a valley some seven miles long flanked by mountains that rise to a height of from 3,000 to 4,000 feet above the valley, their tops being from a few hundred to a thousand feet above timber line; the side, of which are more perpendicular and smoother than are often seen among the mountains of Colorado.

"In that gulch is located the property of the Revenue Mineral Company, an English mining corporation, that gives employment to about fifty men, two of whom met death within a week by being caught in fearful slides that without a moment's warning swept them down the mountain side to their fate.

"From Mr. William Thomas, one of the men employed by the company, we learn the particulars of two of the slides that proved fatal. The first occurred on Thursday the 13th, which swept down the side of the mountain directly over the mouth of the tunnel, carrying away the ore house and a shed on the dump as if they were but straws, and also two men, Nicholas Bennie and Dan Cameron, the former being in the ore house at the time and the latter on the trail. Mr. Bennie was probably killed by the crushing of the ore house, which was literally smashed into bits, and carried down the side of the mountain and buried in the snow where it will be impossible to find the remains until the snow melts. Mr. Cameron, who was rescued alive but badly injured, was taken to Grant, at the mouth of Geneva Gulch, where he is now improving and will undoubtedly recover.

"After passing the tunnel, the slide continued down the mountain about one thousand feet perpendicular to the bottom where it swept two small

buildings away, one of which was used for an office, and at the time contained several men who fortunately escaped without serious injury.

"On Friday another slide occurred about a mile down the gulch that caught a pack train belonging to Anthony Barrett, who was packing stores to the mine. The train was stretched along the trail in single file—the usual manner, when without a moment's warning the mass of snow and boulders shot across the trail and dashed twelve of the twenty animals down the mountain, killing them almost instantly. A man by the name of Kelley was also caught in this slide but was fortunate enough to escape without serious injury.

[This incident also reported in *The Tribune*, Denver, Colo., Tuesday, February 18, 1879 (p. 4, c. 3).]

"On Wednesday the 19th, occurred another slide, which proved fatal to Charles Allen, a well known and highly esteemed former resident of Brownville. On that day a party of twelve men with the seven remaining jacks went down to the mill, about three miles below the boarding house, for the purpose of packing up a lot of stores, and on their return they passed what was considered the dangerous part of their journey and reached a belt of heavy timber about three-fourths of a mile from the boarding house, where they felt safe, Allen making a remark to that effect as they entered it; when another slide came dashing down [Revenue Mountain] and in less time than it takes to write it, swept eleven of the twelve men, and one of the jacks, into the gulch below. All but the unfortunate Allen and Inos Stevens, foreman of the mill, escaped without injury.

"Stevens was considerably bruised though not seriously, and Allen was carried down about 200 feet and buried under two feet of snow, which was packed so tight around him that probably his death was caused more by that than by the bruises he received. Mr. Barrett lost another jack in this slide, which makes a loss of thirteen of the twenty-one that he took over there last fall; a serious misfortune to one who cannot afford it.

"The boarding house at the Gilman Mine was swept away by a slide that is supposed to have occurred on the 13th, but as no work was going on at the mine, the house was unoccupied and no one was injured." ...

[This incident also reported in *The Tribune*, Denver, Colo., Friday, February 21, 1879 (p. 4, c. 1).]

13. *Georgetown Courier*, Thursday, January 8, 1880

Montezuma Snowslide

"Have had several snowslides. One young man named Conant [first name could not be ascertained] is supposed to have been killed. He was working with another man on the Cashier Mine. It is customary to have

their mail left in a box at the foot of the range and on the opposite side of the gulch from the mine. Mr. Conant started after the mail and nothing has been heard from him since a snow slide came down the mountain soon after he left his cabin. There are two letters in the mailbox for him, and were there at the time of the accident, which occurred a week ago last Friday.

"Another snowslide carried Wm. L. Sampson down Glacier Mountain for the distance of five hundred feet covering him completely up. The snow passed over him, leaving him clinging to a rock; nothing serious beyond a bad scare, the snow being new and soft at the time."

[The Cashier (Champion) Mine is located on the southeastern slope of Teller Mountain, 1-1/4 miles due west of Webster Pass and 3 miles south of Montezuma. There are four adits from 12,000 to 12,450 feet (Lovering 1935, p. 75).]

[The first silver ore discovered in Colorado was found on Glacier Mountain, 1864 (Lovering 1935, p. 66).]

14. Georgetown Courier, Thursday, January 20, 1881

The Fatal Avalanche

"Last Friday afternoon this community was shocked by the report that the cabin owned by W. M. Pinckard, in Willow Gulch, between Brown and Hanna Mountains, had been swept away by a snowslide and all of the occupants killed. This report was shortly afterward modified by another stating that W. M. Pinckard had been taken out alive, and that his cousin, Knox Pinckard, and the cook, a colored woman named Mrs. Lucy Jones, were killed.

"The accident was caused by the heavy snow storms that prevailed during the preceding week, which left a body of snow on the ground in that locality about six feet deep. The mountain side at this point is very steep, and when heavy bodies of snow fall it is liable to come down the mountain in the form of a snow slide at any moment.

"The cabin occupied by the unfortunate party was a log structure situated at the western edge of the gulch, partly embedded in the bank and partly projecting into the gulch. On that day all of the occupants were in the cabin, as it was next to impossible to reach the claims they were engaged at developing on account of the deep snow, and as both of the Pinckards had been to town on the preceding day in the deep snow, and reaching home at midnight they felt much fatigued after their hard trip.

"On Friday at about 12 o'clock, noon, they were visited by Deputy Sheriff Perchard, who was on his way to the Atlantic Mine in search of some witness. He remained with them and took dinner, and afterwards started across the gulch, which at this point is about 500 feet wide, being directed by Mr. W. M. Pinckard so that he could keep on the trail. When he had

reached a distance of about 150 feet from the cabin, and had ascertained the course of the trail for the remaining distance, Mr. Pinckard turned into the cabin and closed the door.

“Perchard had not gained the other bank when he heard the roar of the coming slide, and barely reached it in time to save his life and witness it shoot down the gulch and sweep the cabin away. The Folsom boys, who occupied a cabin nearby, went to the Shively Mine in the next gulch east, and gave the alarm, and as quick as possible the whole of the mine force was upon the scene of the disaster with picks and shovels hunting for the lost.

“The events that transpired in the cabin after Mr. Perchard left, we obtain from the rescued man, Mr. W. M. Pinckard. After he left Perchard in the gulch, he turned and closed and locked the door and then went to his bunk, in the northwest corner — the corner that was in the west bank — and laid down on a heavy mattress and feather pillow to read some papers he had brought from town on the preceding day. As he did so, Lucy, the girl, made the remark, ‘I am going to see the poor fellow safely across,’ and went to the door to see how Perchard was progressing. At this moment, Knox stood at the stove engaged at lighting a cigarette.

“In the next instant, Lucy remarked, ‘Is that thunder?’

“Up to that moment Mr. Pinckard had heard nothing unusual, but with her inquiry came a sound as of a heavy mining blast far under ground. Before he could answer, the noise widened, deepened, reverberated, the whole mountain trembled and the same instant a deafening, crashing sound burst upon his ear and like a flash he realized their destruction. He caught a glimpse of the timber that formed the roof going through the air like the spokes of a rapidly revolving wheel and in the next instant he saw dimly as if a terrible cloud had settled upon him.

“Then all was quiet. As he began to realize his situation, he found that he was packed tightly between the logs of the cabin, which had been pulled over him with just room enough to move his hands and feet a little. With his feet he punched a hole out into the snow, and with the aid of a stick he made a hole so that he could breathe better. During the four long hours that he was imprisoned he heard at times voices, steps on the snow and the sound of the shovels at work. He cried out at the top of his voice many times but was unable to make anyone hear and had almost despaired of rescue when some of the men were attracted to the spot and he was taken out comparatively uninjured.

“The bodies of his two companions had been already found. Lucy was found first, covered with only six inches of snow, but Knox was buried much deeper and it required two hours hard work to secure the body. Both of the bodies were found near where they had been standing, and death must have been instantaneous.

"Knox Pinckard had only been in the mountains since the 22nd of December when he arrived direct from New Orleans for the purpose of joining his fortunes with those of his cousin, who had been living in this locality during the past four years. He had enjoyed the benefits of a liberal education, having spent three and a half years in Paris at study in company with the son of Ex-Senator W. M. Guinn, of California, who was his uncle. The girl Lucy was formerly a slave, and when Mr. Pinckard left the South, she followed him, determined to share his hardships in the new land of his adoption, and was faithful unto death."

[On modern maps the Hanna Mountain and Willow Gulch mentioned in accounts 14, 39, 72 and 78 are given as Silver Plume Mountain and Pinkerton Gulch. (Ellis and Ellis 1983, p. 7 and 22).]

[Fossett 1976, p. 397 lists the Seven-Thirty, Roe and Shiveley as Brown Mountain lodes.]

15. *Georgetown Courier*, Thursday, January 20, 1881

"Another snowslide occurred last Saturday between Brownville and Bakerville, in the gulch next above the one in which Knox Pinckard and Mrs. Jones were killed the day preceding. In this case the snow and debris shot across the Bakerville road and the creek and ran up the opposite mountain about 40 feet."

[This was probably Cloud Gulch, south of Silver Plume Mountain.]

16. *Georgetown Courier*, Thursday, January 27, 1881

Snowslide in Summit

Decatur Almost Buried in an Avalanche

"The Breckenridge Journal of the 21st brought the first information of the snowslide at Decatur as follows:

"A person just in from Chihuahua reports a snowslide which occurred before he left had destroyed half the town of Decatur. The houses were not only buried, but destroyed entirely. The noise of the avalanche of snow, boulders, broken trees, etc., was appalling and heard in Chihuahua, three miles away.

"At first it was supposed the whole town was destroyed, and no hope was felt for the people, but investigations revealed of our informant no lives were reported lost, although many narrow escapes are reported. One house was rolled entirely over and carried fifty yards from its original foundation, six persons being within, and yet save bruises, none were injured. William

Parker, superintendent of the Delaware Mine, sent word by snowshoe messenger that he was tired of camping under impending avalanches, and that he wished for immediate removal for himself, family, and workmen. Five teams and twenty men have started to relieve the imprisoned and cut-off towns people.”

[In 1882, Chihuahua, located at the mouth of Chihuahua Gulch, had 54 buildings and was the home of prospectors exploring the veins in Cooper Mountain, Brittle Silver Mountain, and Morgan Peak. The town was destroyed by a forest fire and never rebuilt (Lovering 1935, p. 66). Decatur, about 1 mile east of Chihuahua, is in the path of an avalanche off of Ruby Mountain. In 1930, there were only two houses intact, but piles of crushed lumber indicated where others had been. The Pennsylvania Mine was directly south of Decatur (Lovering 1935, p. 66). The Delaware Mine is on the north slope of Decatur Mountain near the mouth of Cinnamon Creek about 3 miles from Montezuma. The Delaware Mine was the southwestern extension of the Pennsylvania vein (Lovering 1935, p. 78).] [Eberhart (1974, p. 155) says the fire at Chihuahua was in 1889.]

16A. *Georgetown Courier*, Thursday, January 27, 1881

“Snowslides have been unusually common for this season of the year during the past few weeks, and the probability is that with the approach of spring they will be more frequent. There is so much snow on and near the main range that many disasters can be looked for after heavy spring storms.

“Information derived from those who have come over the range since the slide occurred represents the damage done is comparatively slight, considering that the slide passed through the town. The greatest damage was to Boomhouse frame house, which was upset. The cabins belonging to Steve Edwards, Mark Cowles, and Chas. Tyres were destroyed. The slide occurred at midnight, and before reaching town it was divided, one part going each side of Sawtell’s boarding house. Three jacks were killed, but fortunately no lives were lost.”

[This appears to be a reference to the Decatur avalanche accident reported in [16].]

17. *Georgetown Courier*, Thursday, February 15, 1883

The Death of James M. Taylor in a Snow-Slide

“On the 2nd or 3rd of February, Georgetown added one of its citizens to the long list of victims of the fatal snow slides. On Wednesday, the 7th, a telegram was received here by Lewis E. Taylor that a snowslide had occurred on Collier Mountain near Montezuma, and it was thought his brother, J. M. Taylor, had been caught in it. Mr. Taylor had the remains

shipped to Georgetown by way of the Dillon and South Park Railroad, which arrived on Tuesday last and were taken to Mr. Taylor's residence where the funeral services were held yesterday.

"James M. Taylor had been working the Pilot Mine on Collier Mountain for some months past, and it was near the cabin connected with this mine that he was caught by the sliding snow and lost his life. It is thought that he had just built a fire in the stove and had gone out with a basin to get some snow when a snowslide coming down carried away the air pipe to the mine and the stovepipe on the cabin. He was evidently hit with something or hurled against the rock on the dump and the frontal skull bone broken. His death was without doubt instantaneous, as when found his pipe was in his mouth and his gloves in his hand.

"The dog which he had with him and which was also carried down by the slide, was buried under ten feet of snow, but being uninjured, dug out. It was the dog's appearance at a cabin near by, and his actions which led to the discovery that Mr. Taylor was missing. A search party of sixteen went out, and after a day's work, failed to find any trace of the body about 1000 feet below the cabin. When found, he was in a perpendicular position with feet upward and very near the surface. Upon examination, it was found his skull, one leg, and one arm had been broken.

[The Pilot Mine is thought to be near the Sarsefield and Atlantic Mines.]

"A snowslide is reported to have occurred in West Argentine last week, which made a clean sweep of everything in its road." [28]

18. *Georgetown Courier*, Thursday, March 1, 1883

"All that is needed is to have a few English Tourists buried under snowslides to make our Rocky Mountain avalanches as famous as those of the Alps."

19. *Georgetown Courier*, Thursday, March 20, 1884

A Snow Slide at Georgetown

"On last Saturday, a snow slide occurred above the Moline Tunnel, in Beeched Gulch [Silver Gulch], about three-quarters of a mile from Georgetown. It came down Republican Mountain with terrible force, and ran up Democrat Mountain about 50 feet. A cabin in its path, belonging to William Hunt, was demolished. No persons, luckily, were in the vicinity."

[For a later accident to Mr. Hunt's cabin see [40].]

20. *Georgetown Courier*, Thursday, April 17, 1884

A Fatal Snowslide

"A miners life is continually fraught with danger. Perils of all kinds continually stare him in the face. The premature explosion of a blast, the caving of ground, and numerous other accidents incident to the mines, add victim after victim to the already long list. Probably the most ruthless death-dealer is the snowslide. It clutches its victim in the most unexpected manner and hurls him to death. This was the fate of W. M. Wooding on last Thursday.

"The slide occurred on Republican Mountain, at the Grand View Mine. Wooding and his partner, Geo. W. Kessler, had a contract for driving the lower Grand View Tunnel. On Thursday noon, they were sitting out on the dump, near the tunnel entrance, eating their dinner, joking the while — little thinking of the peril they were in. Suddenly, a chunk or two of snow fell from above the tunnel, giving warning of the approaching disaster. Wooding saw it and shouted: 'Snowslide, George; run!' With this remark, Wooding leaned over preparatory to running into the tunnel, when the snow struck and buried him. Kessler, who was sitting on a wheelbarrow, was struck by the slide and thrown about twenty-five feet upward, the wheelbarrow following him. He turned over two or three times, and when he alighted, [was] about 150 or 200 feet below....

"The slide was not a large one. It was about 8 or 10 feet wide. The snow was very wet, compact and heavy, and started just above the Grand View Tunnel and went down the mountain only about 200 or 300 feet. Hundreds of slides similar to this occur almost daily. Had no one been killed or injured by this one, no particular notice would have been given to it."

21. *Georgetown Courier*, Thursday, April 17, 1884

"A snow slide came down the gulch above Bridal Veil Falls, on Republican Mountain, last Friday. It was witnessed by a number of our citizens on the street. No damage was done."

22. *Georgetown Courier*, Thursday, May 1, 1884

"Three snow slides occurred last Thursday in the vicinity of the Seven-Thirty Mine. The buildings of the Roe Mine were buried and swept away, but fortunately, no one was injured. Some men were working on the track of the slide, but made their escape."

[Fossett 1976, p. 397 lists the Seven-Thirty, Roe, and Shiveley as Brown Mountain lodes.]

23. *Georgetown Courier*, Thursday, February 26, 1885

"A large snowslide occurred above Bakerville last Thursday which came near carrying a man named McMurty to his death. The slide carried tons upon tons of rock and uprooted trees in its path."

24. *Georgetown Courier*, Thursday, January 20, 1887

"A 3,000 foot avalanche on McClellan Mountain."

25. *Georgetown Courier*, Monday, March 3, 1890

Caught in a Snowslide

"On Monday William Shavallia, Mr. Anders and son, and Ed Riley went to work on the Wisconsin-Central Lode situated at timberline on Kelso Mountain. They had cut down the snow at the mouth of the tunnel, leaving a wall above the tunnel at twelve feet in height. Riley and young Anders were just entering the door and Shavallia and Mr. Anders just below when the slide started. Riley and young Anders got in the door, but it caught Shavallia and Anders, carrying them 800 feet down the mountain. Fortunately, Anders was left with his head out. He succeeded in getting out and then extracted Shavallia who was knocked senseless. Both men were badly bruised and wounded.

[The Wisconsin-Central Lode is parallel and just east of Sonora Gulch. Ellis and Ellis 1983, p. 179.]

"A second slide started and nearly buried Taylor's cabin. The snow up there is very deep and the slope of the mountain is such that most any disturbance will start the slide over large areas. But the rich mines and the high-grade ore is a great temptation to mine there. The snow this year is deeper than for ten years past."

26. *Georgetown Courier*, Saturday, February 9, 1895

"An Italian, while getting down wood near the Seven-Thirty Mine on Monday, started a snowslide and took a ride of several hundred feet. He escaped with a few bruises."

27. *Georgetown Courier*, Saturday, April 4, 1896

"Henry Amos started a snowslide one day last week as he was coming down McClellan Mountain, opposite the Baltimore Tunnel. He was carried down like a football for about 200 feet, part of the time on top of the snow and part of the time with a mass of snow on top of him, when he managed to grab a small tree and save himself from great harm, if not a swift death. He says he thought his moments were numbered."

28. *Georgetown Courier*, Saturday, February 27, 1897

"William Conway and eleven jacks perished in a snowslide near Montezuma last week. Mr. Conway was engaged in packing ore from the Atlantic Mine on Collier Mountain, and was on his way to the mine when the avalanche overtook him. A large force of men spent several days digging for the body of Conway, which was found on Monday. Collier Mountain is where James Taylor of Georgetown was killed in a snowslide on the 2nd of February, 1883" [17].

[The Atlantic Mine is on the west slope of Collier Mountain about 1 mile east-southeast of Montezuma at an elevation between 12,000 and 12,500 feet (Lovering 1935, p. 68-69).]

29. *Georgetown Courier*, Saturday, February 27, 1897

"A snowslide came down Big Professor Mountain last week and blockaded the wagon road.

[Big Professor Mountain is called Mount Sniktau and Little Professor Mountain is called Mount Bethel on modern maps. Ellis and Ellis 1983 p. 12]

"Clear Creek has been exempt from fatal snowslides for a good many years.

"There have been ten fatalities: Chas. Ritchie was killed in a slide on February 15, 1874 [actually it was 1876] [8]; James Fallon fatally injured, March 24, 1875 [5]; Wm. G. Morgan and Chris Jensen, 1875 [7]; Nicholas Benny [Bennie], February 13, 1879 [11, 12]; Chas. Allen, February 19, 1879 [12]; Wm. Pinckard [was not killed], Knox Pinckard, and Lucy Jones, January 14, 1881 [14]; Wm. Wooding, April 10, 1884 [20].

"There were other avalanches in which there were a number of narrow escapes."

30. *Georgetown Courier*, Saturday, March 6, 1897

"Breckenridge Journal — Frank Graham, superintendent of the Pennsylvania Mine, says he can count ten snowslides from his office window. Twelve have come down in all; seven near the Pennsylvania Mine on the south side of the gulch, and five on the other side, above and below Decatur."

[Delaware, Peruvian, Queen of the West, and Revenue Tariff were other mines in or near Decatur (Wolle 1949, p. 136).]

[Lovering (1935) locates the mines as follows: The Pennsylvania Mine is on the northwest slope of Decatur Mountain about 1/4 mile south of Peru Creek and 3 miles east-northeast of Montezuma. The mine and mill buildings were at an elevation of about 10,900 feet (p. 92). Peruvian and Shoe Basin veins are on the eastern slope of Ruby Mountain about 4 miles northeast of Montezuma at

altitudes of about 11,800 and 11,500 feet, respectively (p. 95). The Queen of the West Mine is on the steep east side of Horseshoe Basin, 1,200 feet northwest of Argentine Pass, and about 5 ° miles northeast of Montezuma (p. 96). The Tariff vein is on Copper Mountain (p. 99). See account number 16 for the location of the Delaware Mine.] [Gilliland (1980) gives the elevation of the Queen of the West Mine as 12,500 to 13,000 feet.]

31. *Georgetown Courier*, Saturday, March 27, 1897

"Two snowslides came down Republican Mountain Wednesday, but stopped before they reached the foot of the mountain. They loosened some boulders, however, that threatened destruction to residences. One weighing a number of tons rolled well out into the valley, and another made a flying jump over Mr. Poulson's residence. Charley Gray was on the mountain in the path of the snowslide, and took shelter under a cliff. A stiff wind lifted his hat and carried it to parts unknown and Charley came home bare headed."

32. *Georgetown Courier*, Saturday, February 4, 1899

"The first snowslide in this vicinity came down Republican Mountain Monday night, in a dry gulch opposite the high bridge. It spread out at the mouth of the gulch and was about 400 feet wide where it crossed the wagon road, which it covered in places to a depth of 25 feet. The taper end of the slide crossed the railroad tracks, covering it for a distance of 100 feet with from an inch to ten feet of snow. The morning train from the Plume whistled an alarm, which brought a gang of shovelers to its assistance. A force of 25 men were nearly three days in opening the road. The snow was packed as though it had been hammered down and there were numerous large boulders bedded in the mass."

33. *Georgetown Courier*, Saturday, February 11, 1899

"A snowslide came down Bridal Veil Gulch Tuesday afternoon, from the summit of Republican Mountain. It was witnessed by a number of people who say it looked like a cloud.

"...Lewis Kennedy, who left Georgetown on Saturday, January 28th, ran into a snowslide [on Berthoud Pass] and being unable to extricate his team, he left it and went to Spruce Lodge, reaching there at 12 o'clock at night...the following day he returned to where he had left his team. With assistance, he got the horses out of the slide and into the timber after 36 hours work....

"They have succeeded in opening the road on the west slope from the summit to Cozens' Ranch, but nothing whatever has been done on the Clear Creek slope and the road is impassable.

“Mr. Wm. Perrin came over Argentine Pass on Sunday on snowshoes. He says there have been three snowslides near the Pennsylvania Mine, but no damage was done other than blocking the road. Twenty-five men from the Pennsylvania were put at work on the road and cut their way through the slide in three days.”

34. *Rocky Mountain News*, Monday, February 13, 1899

SNOWSLIDE CLAIMS TEN MORE VICTIMS

{Gigan}tic Avalanches Sweep down Willehan [sic] and Cherokee Gulches near Silver Plume

{Work} of Rescue Promptly Begun, But Only Three Men Taken Out Alive — Were All Italian Miners

{Threat} of the Dreadful Disaster Had Been Realized for Several Days — More Destructive Slides Feared and People Take Steps to Avoid Them

“The Dead:

DOMINIC DESTEFANO, WIFE AND TWO CHILDREN
JOSEPH TONDINI
PETER TONDINI
JOHN TONDINI
GERONDO GUENZI
G. BIETTO
ENRICO NOVARIA

The Injured:

Antonio Migretto
Antonio Maleario
Guiseppe Corcunio

[The tombstones in the cemetery at Silver Plume (Fig. 3) give these names as: D.G. Stefane; Caterina, Maria; [and] Giovanni [Stefane]; G. Tondini; Pietro [and] Giovanni [Tondini]; G. Guenzi; B. Bietto; and E. Novaria.]

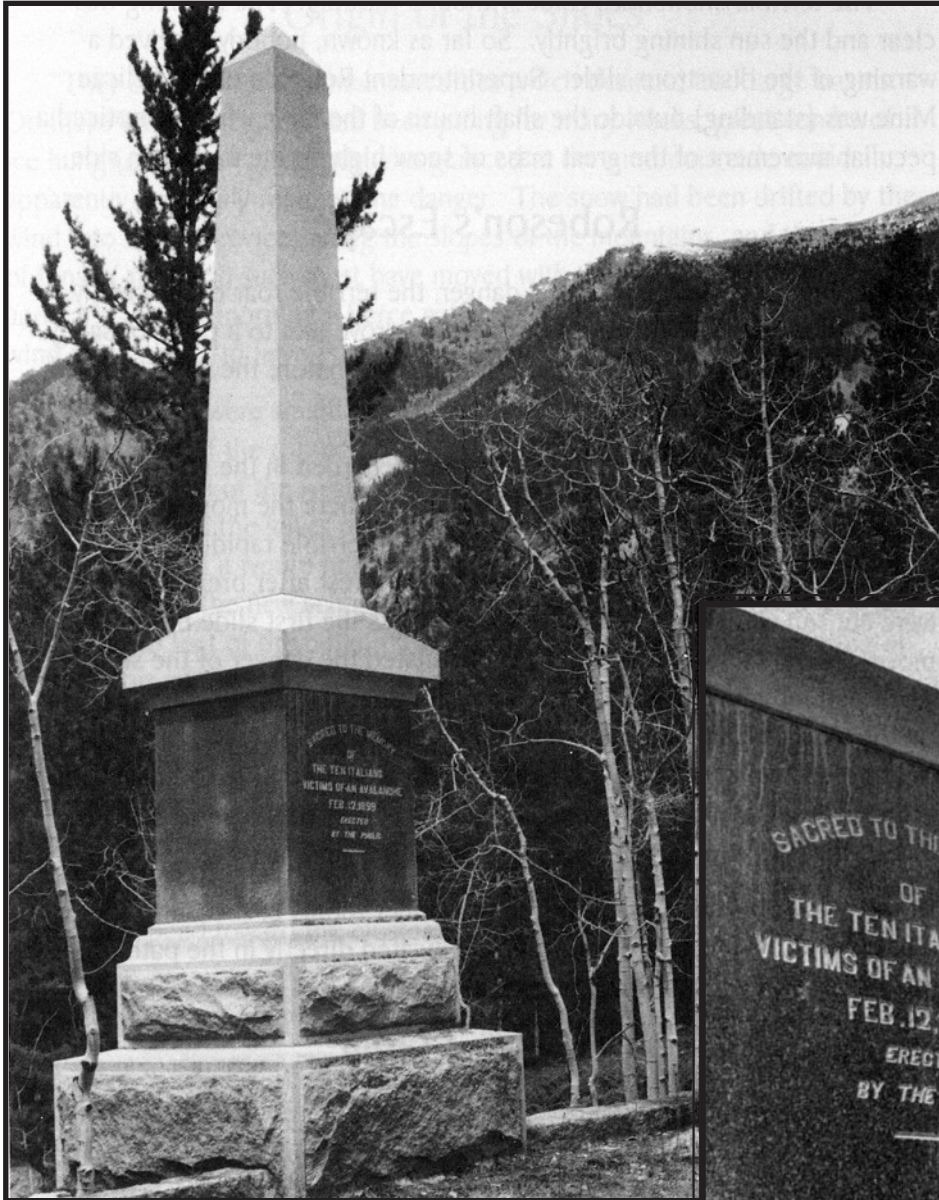
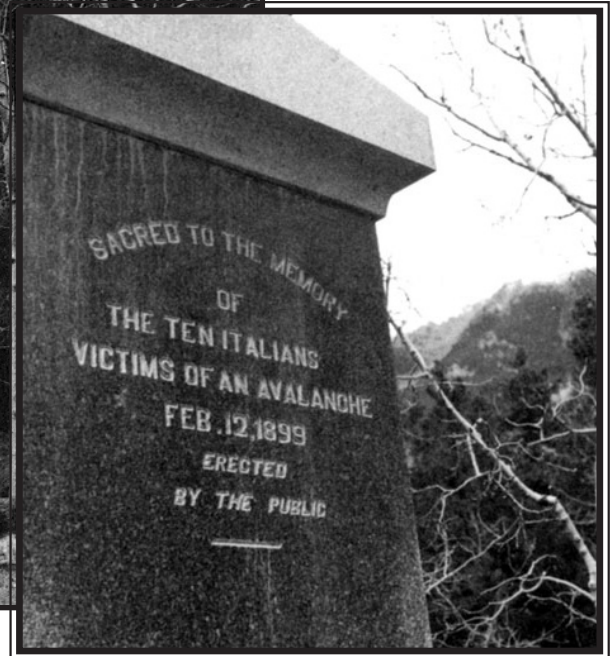


Figure 3. — Monument, in the Silver Plume Cemetery, to the 10 people killed by an avalanche on Republican Mountain on February 12, 1899.

Insert A. — Inscription on Monument.



“Special to the *News*.

“SILVER PLUME, Colo., Feb. 12 — Simultaneously two snowslides occurred in Cherokee Gulch, at this place, at 8:45 this morning. Ten lives were lost in the thundering rush of snow, rock, and timber. The ore houses of the Pelican and Corry City Mines were carried away and fully \$50,000 worth of ore was carried from the basin between the mountain sides and lost.

“Inhabitants are terrorized, as snowslides have never been known in this section of the country. The vast amount of snow on the mountain sides frowns down on the people below, and the miners are in mortal terror lest a repetition of the {awful} avalanches will occur and carry away their cabins. All the killed are {miners or} members of their families.

"The terrible snowslides came without a warning. The morning was clear and the sun shining brightly. So far as known, nobody received a warning of the disastrous slide. Superintendent Robeson of the Pelican Mine was {standing} outside the shaft house of the mine when he noticed a peculiar movement of the great mass of snow high on the mountain side.

Robeson's Escape

"Before he comprehended the danger, the terrible roar of the swiftly moving mass of snow and earth instinctively drove him to a place of safety. He saw the {start} of the slide and reached cover before the snow reached the shaft house where he was standing.

"{This} slide is the most disastrous ever recorded in the northern part of the state. It started directly north of the place where the mountain sides are steep. In {seconds}, the first slide moved with terrible rapidity. Several of the miners were outside their cabins enjoying a rest after breakfast. They were cut {off with} out a moment's warning. As the first slide began to move, several miners at the Pelican appreciated the danger of the situation. Their natural impulse was to hasten to warn their companions in the cabins on the mountain side, but the force of the elements was too great, and before they realized it tons and tons of snow were upon the cabins and had reduced them to splinters.

"Coming down the mountain, the mass of snow struck two cabins west of the mountain and the shaft house and boiler rooms of the Corry City Mine. The buildings were unfortunately located directly in the path of the {slide}.

The Fatal Slide

"A second slide took a different course down Willehan [sic] Gulch [this was called Willow Hen Gulch in the Denver Evening Post, February 13, 1899 p. 6], east of Sherman Mountain, between the Pelican and Seven-Thirty Mines. That slide carried {away} cabins in which there were seven miners, all of whom found death in the uncontrollable mass that bore destruction with it.

"Superintendent Robeson, who noticed the movements of both slides, declares the scene was horrible. Timbers of huge proportions were ground into splinters by the ponderous mass of swiftly moving snow and ice, and before a bird could have winged away it was upon the humble habitations of the poor miner.

"The awful, terrorizing noise accompanying the descent of the snow will linger in the memory of those who heard it. The sight of the irresistible mass falling upon the city drove people from their homes. The tracks of both slides were most marked.

Origin of the Slides

"They began on steep mountain sides which descend into large basins. On these basins the snow had been piling for many weeks; great combs of ice hung {overhead}. Nobody who glanced at the mountain side could apparently have fully realized the danger. The snow had been drifted by the wind into every {crevice} along the slopes of the mountains, and thousands of tons of rock and such must have moved with the slide. All Saturday night and early Sunday morning a fierce gale raged. This unusual movement of wind is supposed to have {started the} snow on its destructive descent.

"Both slides were simultaneous, as though arranged by nature to entrap the inhabitants of the cabins below. A large portion of the slide which started at the top of the western gulch stopped at the foot of the basin before it reached the lower part of the gulch. That was most fortunate. Had it continued it would have {destroyed} a large number of houses in the town, including the new schoolhouse. As it was, a part of the slide reached to within 100 feet of the building. {Some} days ago there was a meeting of the directors of the school. They looked at the vast quantity of snow upon the mountain sides as a menace to life, and ordered the school closed for fear that a slide would occur.

"As the first innocent looking snow bank moved toward Willehan [sic] Gulch it did not appear dangerous, but it gained volume, and before it had descended 100 feet it had gained tremendous bulk and was moving with incredible speed toward the cluster of humble homes.

"The forces cannot be imagined. In lightning speed it bore down on the basin and overwhelmed with terror the inhabitants of the cabins. As the ponderous mass pounced upon the unprotected cabins, its destructive force was spent, grinding them to splinters and crushing their walls like eggshells. On and on it carried its innocent victims with cruel determination to destroy existence and landed them in the basin below. In a few short minutes, cabins, inhabitants and all their belongings were buried beneath a vast expanse of snow many feet deep.

Damage at the Pelican

"The slide that came down Cherokee Gulch also made a sudden stop or the damage would have been much greater. It carried away the engine and boiler rooms of the Corry City Mine, but left a portion of the ore houses standing. This slide stopped on the Eagle Bird dump, just above the blacksmith shop of the Pelican Mine. In the Pelican Mine working at the time were about twenty-five men. The terrible noises accompanying the slides aroused them at their underground work, and when they hastened to the surface they appreciated that the life of the miner under the surface is sometimes safer than above the ground.

"Scattered over the mountain side leading into Cherokee Gulch are numerous ore houses of the Pelican Mine. These ore houses were well stocked. The workings of the mine have many surface outlets at which ore houses are located. None of these houses are standing. It is estimated that fully \$50,000 worth of ore was stored in them. This ore has been swept away and will be lost to the owners of the property.

"As soon as the report of the catastrophe spread, both gulches were visited by hundreds of people who were willing to lend a hand to the work of rescue. Word of the disaster soon reached Georgetown and people came from there to assist in the noble work of searching for the dead and injured. The thermometer registered 15 degrees below zero, but the work was promptly begun and prosecuted. Scattered along the mountain side here and there were a few timbers which served to guide the work of the rescuing parties. The brave miners who were attracted to the scene worked heroically.

First of the Rescued

"Inside of five minutes the rapidly moving shovels of the rescuers encountered the body of Antonio Migretto. He was more dead than alive, but the spark of life was apparent and immediate attention was given him. Willing hands carried him to a sled and he was brought into the depot here, where every medical attention was given him. Soon after Antonio Maleano and Guiseppe Corcunio were found. They were almost dead and were brought here at once and given medical attention.

"The first bodies found were those of Mrs. Destefano and her children. The mother had her arms clasped about the inanimate form of her younger child. The other child was found a short distance away. The mother had evidently seen the avalanche approaching and had made an attempt to save her child in escaping from the house. The bodies were brought here on a sled. The work of rescue continued, and in the remains of the Destefano cabin a cook stove with the fire still burning was unearthed. The chicken coop of the modest home was next found, and the thirteen chicks were uninjured.

"As the work went on the bodies of Peter and John Tondini, Gerondo Guenzi, G. Bietto and Enrico Novaria were uncovered. They were not badly mutilated but the severe pressure of the snow told on their blackened faces. The bodies of Joe Tondini and Dominic Destefano have not yet been found. It is known definitely that they perished. Destefano left his cabin shortly before the slide came down and was walking in the direction of this city when the avalanche caught him and hurried him to destruction. It is probable that his body will be one of the last recovered.

Improvised Morgue

"A vacant building here was transformed into a morgue where the bodies were placed side by side. They are being prepared for burial. The sight around the improvised morgue is heartrending, the fact that a woman and two children are counted among the dead makes the sight more harrowing. The heroic workers continued their labors until after dark and when they returned to the city, they visited the morgue and stood with uncovered heads in the presence of death. The large number of people who are engaged in the search makes it almost positive that all the bodies will be recovered. Two Swedes were at first reported missing. The cabin in which they were living was swept away but the men spent the night here and were fortunate in not going to their cabin early in the morning.

"The situation here is considered still serious. More slides are expected and should they come to-night a large portion of the city might be buried. A slide down Brown Gulch is looked for at any time from above the Seven-Thirty. Men are engaged there in sacking the ore and packing it into the tunnel. There is about \$10,000 worth of ore in the ore houses and should they be swept away the majority of it would be lost. Such a slide would bury a number of houses at the bottom of the gulch including the Brownsville schoolhouse.

People Moving Out

"People are moving out of the threatened localities. There are other gulches adjacent to the city where slides are likely to occur. The snow overhangs the Seven-Thirty Mine in dangerous fashion to-night and all the men on that property as well as the Pelican have been ordered away or to take care of themselves. Late this afternoon a small slide occurred at Bridal Veil Falls but did no more damage than to fill the wagon road with snow.

"The slides traveled for at least two miles and worked a furrow in the mountain sides at least ten feet deep. [We assume this refers to the slides in Willihan and Cherokee Gulches. The travel distance was closer to one and a half miles than to two miles.]"

People Expected The Slide

Senator Gallagher Says Many Families Moved From Harm's Way

"According to Senator Joseph Gallagher, of Silver Plume, who is making his headquarters at the St. James, the people of that town have been in constant fear of an avalanche such as swept down Pelican gulch yesterday.

'For more than a month,' said he last evening, 'we have felt that there was danger of an occurrence like that of to-day, and have taken precautions accordingly. On account of this danger there has been no school in the school house above town for several weeks. My home is located within about 100 yards of the course of the slide, and when I heard of the catastrophe I was worried considerably, but early this evening I was informed that my family had taken my advice and had moved to a safer locality to remain while the snow lasts.

'The people who suffered either did not care to heed the counsel that was given them or were unable to find other quarters. I know of many families that moved out of the gulch for fear of a slide.' "

34A. *Rocky Mountain News*, Tuesday, February 14, 1899 (p. 3, c. 5)

SEARCH FOR SLIDE VICTIMS

One Body Recovered and One Man Still Under the Snow

South Plume Threatened by an Avalanche off Leavenworth Mountain

Searchers Find Remains of Joe Tondini on Site of His Cabin – Destefeno's Body Will Probably Lie Under the Snow till Warm Weather

Special to the *News*.

"SILVER PLUME, Colo., Feb. 13 — People have not yet wholly recovered from the awe and terror with which this community was stricken by the awful calamity which occurred yesterday morning. But few miners went to their usual occupation to-day, many volunteering to continue the search for the missing bodies of those known to be dead and buried somewhere under the piles of snow which marked the course of the avalanche that worked such havoc and destruction of human life. The weather has been warm to-day, with a little snow falling in the forenoon, but the wind has not been blowing, and as the snow has a chance to settle, people are feeling that there is no immediate danger of more slides coming down upon the town until there is more snow and wind.

"Early this morning the searchers commenced the work of looking for the bodies of Destefeno [sic] and Joe Tondini (Fig. 4). The latter was soon found by digging where the cabin had stood, as it had not been swept away, as was at first supposed. The searchers did not think of looking there yesterday, as the bodies of his two brothers had been found some distance from the place. The body was brought to town and placed in the morgue with his dead brothers and the other victims of the avalanche.

"After the finding of Tondini, all hands turned their attention to the other gulch, where the body of Destefeno [sic] is supposed to be buried under the snowslide. Long iron rods were fashioned into probes, and a line of men started from the bottom of the slide and with the probes and shovels explored it carefully clear up to the place where the Destefano house stood, but all to no purpose. No trace of the missing man could be found, and late to-night the search was given up. It is not likely that the body will be found until the sun removes the snow.

Slide Phenomenon

"A remarkable phenomenon in connection with the mighty avalanche was the great cloud of snow which it raised in its swift, death-dealing flight. The sun was shining brightly for the first time in weeks and a high wind was blowing which whirled a great deal of snow around, but all at once the sun

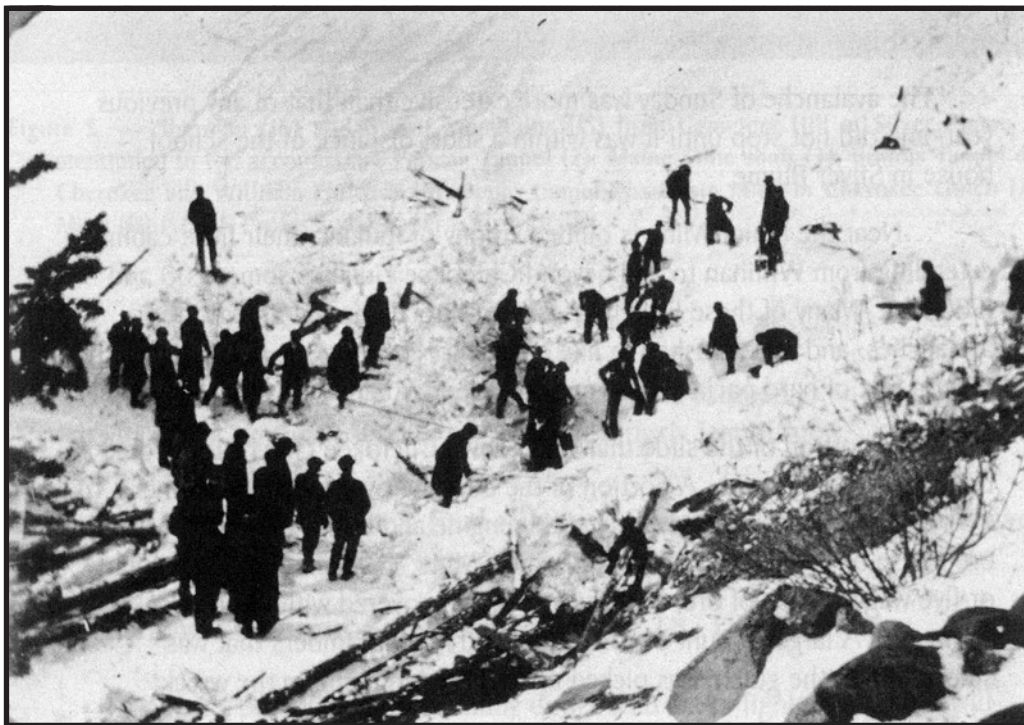


Figure 4. — Rescue workers searching for victims of the February 12, 1899, avalanche at Silver Plume (Silver Plume Historic Society).

was darkened as if obscured by a dense cloud, and the air was filled with flying snow, so that it was impossible to see more than a few feet anywhere in town. People did not know what to think, but concluded that a denser cloud than usual was sweeping down the gulch. Mr. Cyrus Land, who lives in the southeastern part of town saw the great cloud of snow arising along the gulches and knew too well what it meant. He rushed over into the main part of town and gave the alarm.

34B. *Georgetown Courier*, Saturday, February 18, 1899

An Avalanche Kills Ten People

"The most disastrous snowslide within the history of Clear Creek County occurred about 8:45 o'clock last Sunday morning in Cherokee Gulch and a small ravine about 1000 feet west, sometimes called the Willihan Gulch or the Boom Ditch. Cherokee Gulch heads near the summit of Republican and Sherman Mountains in a sag a mile or more in width. Willihan Ravine heads near the western extremity of the sag, and between the two is a narrow ridge. Cliffs covered with immense overhanging hoods of snow tower above them along the crest of the main mountain. These immense hoods of snow broke off, part being precipitated on the Cherokee Gulch side, but the major portion falling into Willihan Ravine, in which snow slides are of yearly occurrence, three already having taken place in it this year, but they were small affairs. It was in this ravine that Wm. G. Morgan, Chris Jensen, and Patterson Martin lost their lives in a snowslide in 1875 [7].

"The avalanche of Sunday was more extensive than that of any previous year, and did not stop until it was within a short distance of the school house in Silver Plume.

"...Near the Maine Mine is quite a colony of Italians, their little cabins extending from Willihan to and beyond Cherokee Gulches some 1200 and 1500 feet. Many of these little houses were directly on the line of the avalanches, and were crushed in like eggshells, covering the occupants with several feet of hard packed snow and smothering them to death.

"That portion of the slide that came down Cherokee Gulch stopped at the Pelican No. 2 level. A portion of the building over the shaft on the Corry City Mine was destroyed, and the engine and boiler displaced. An ore house on the No. 1 level of the Pelican Mine, in which there were four or five wagon loads of ore, was crushed in and covered with ten feet of snow.... A large amount of cord wood and mining timbers that was stacked up in the gulch, was picked up and carried along in the wreck.

"Five cabins were destroyed. A few were swept down the mountain wholly and crushed. Others were crushed in and portions of the structures carried off. One of the homes that was overtaken by the disaster was that

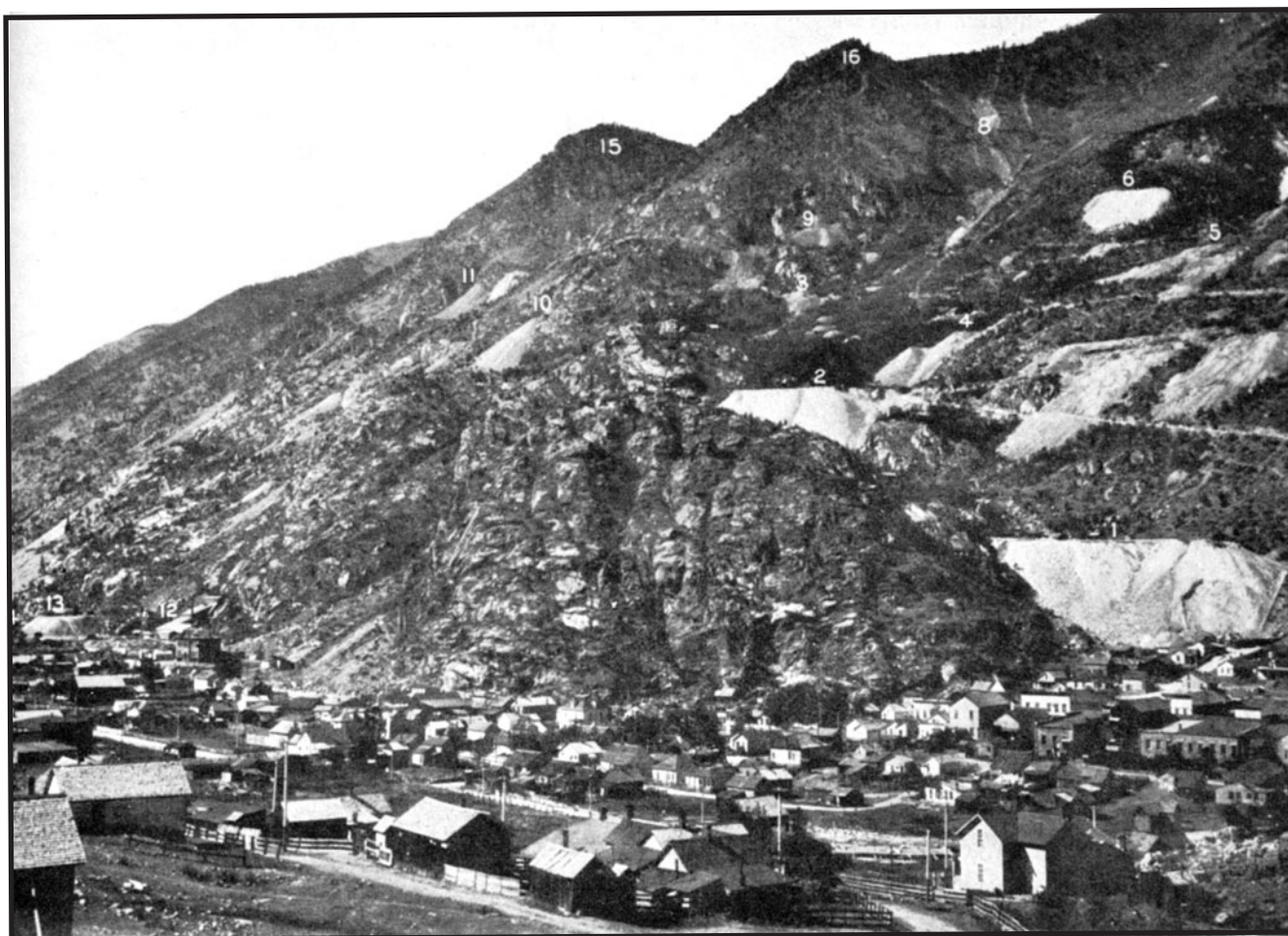


Figure 5.— Sherman (16) and Brown Mountains (15) from Cemetery Hill at Silver Plume. Other features mentioned in the accounts are Pelican Tunnel (2), Maine Mine shaft (3), Illinois Tunnel on ridge between Cherokee and Willihan Gulches (6), upper tunnel Wisconsin Mine in Cherokee Gulch (7), and Montreal Mine (11) (USGS Professional Paper 63, pl. XXIII).

of Domenico Destefane. Of a family of four, not one escaped.... The building was partly crushed in and covered with six feet of snow.”...[For further information see account no. 72.]

[Brown (1968, p. 336) says final tally in this avalanche was “around twenty” dead. This is not confirmed by any of the material we saw.]

35. *Georgetown Courier*, Saturday, February 18, 1899

“When a person can successfully dodge a streak of lightning, then it will be possible for him to get out of the way of a snowslide. The Silver Plume school has been closed until the first of March on account of the danger of snowslide wrecking the building.

"Another small snowslide came down Bridal Veil Falls Gulch Sunday, and buried the wagon road under several feet of snow. A fox was taken out of the last snowslide.

"Snow is eight feet deep on the level at Yankee, and drifts about twenty feet. The Brownsville school has been closed on account of the danger of a snowslide in Brown Gulch."

36. *Georgetown Courier*, Saturday, February 25, 1899

Another Awful Avalanche

Three Human Lives Lost

The Seven-Thirty Buildings Destroyed

"An avalanche equal to that of February 12th, broke away from Brown Mountain, near the Seven-Thirty Mine, at four o'clock Wednesday morning, destroying a large amount of property and costing three human lives. The slide started at three points, all joining in a mad rush down Brown Gulch, a narrow ravine, which it left packed with snow of varying depths, and terminated on the banks of Clear Creek, a mile distant from the starting point. At the mouth of the gulch the snow is piled up fifty feet deep.

"One started at the Montreal Mine (Fig. 5) of the southern slope of Brown Mountain. Just below the mine, under the cliff, was the home of Dan Fitzpatrick in which he had lived for more than thirty years. The snow in sliding over the cliff fell upon the cabin, crushing it in and burying its lone occupant under a mass of snow, earth, and rocks.

"Another slide started on the eastern slope of Brown Mountain, and a third in Brown Gulch a short distance above the Seven-Thirty Mine. Both these slides headed directly for the main buildings, destroying a number of vacant cabins just above the mine, the engine house, ore and boarding house, blacksmith shop, two stables and a portion of the office building.

"In a room over the ore house three men were sleeping, two of which were killed...close by the ore house was a stable in which were two horses. All had been engulfed and buried out of sight."... [For additional information see account no. 72.] [Another contemporary account appeared on pg. 1, *Denver Evening Post*, Wednesday, February 22, 1899.]

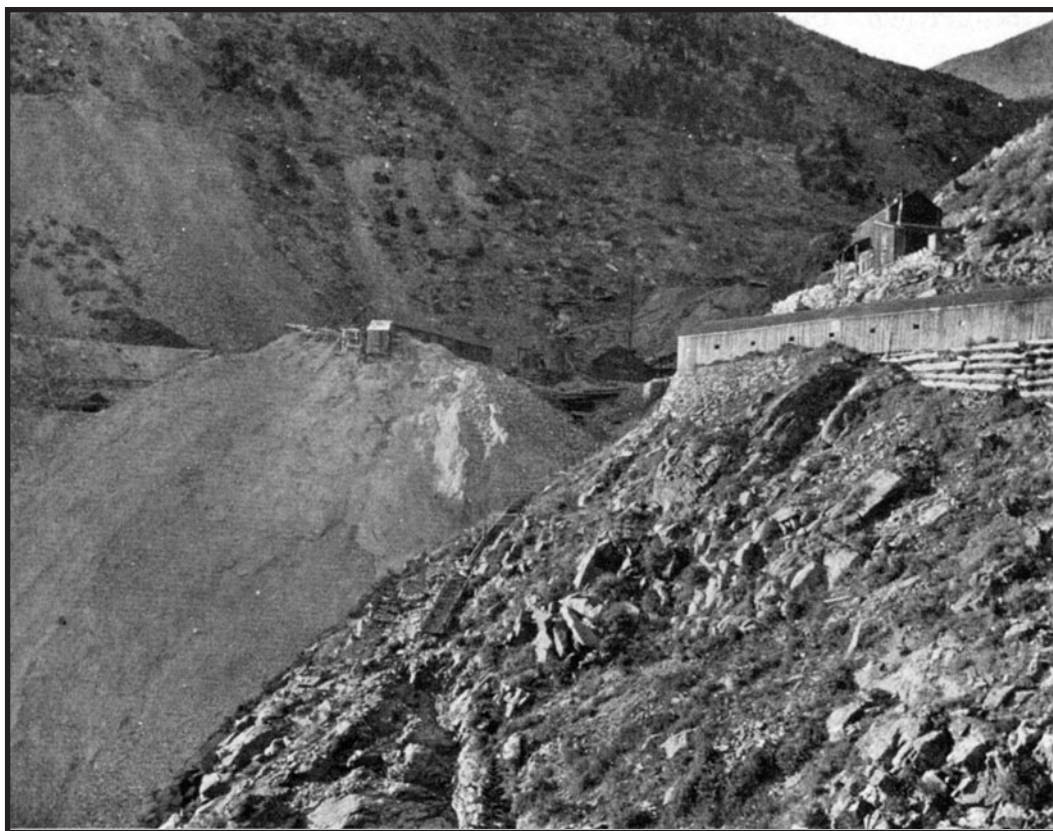


Figure 6. — Seven-Thirty Mine, in Brown Gulch, looking north-northwest from Griffin Monument (USGS Professional Paper 63, pl. XXX).

37. *Georgetown Courier*, Saturday, February 25, 1899

“Mr. Charles Peck says that the reported slide near Empire Pass, which is pointed out from Georgetown, can’t be seen from a nearer view. It is reported there was a snow slide in East Argentine or in the Horseshoe Basin this week that buried three Italians, and one near the Stevens Mine that brought down a deer.”

38. *Georgetown Courier*, Saturday, February 25, 1899

“A large snowslide came down Republican Mountain at the north end of town [Silver Plume] last Friday, but did no damage. Seventeen snowslides have taken place in Daily District. Some of them were nearly two miles long.

“Nearly thirty years ago Albert Johnson, Pat McLaughlin and two others, while engaged in making a survey near the head of Brown Gulch, started a snowslide which carried them down the mountain several hundred feet. McLaughlin was the only one to receive severe injuries, his legs being broken. Mr. Johnson lost his surveying instrument.”

39. *Georgetown Courier*, Saturday, February 25, 1899

Snowslides of Past Years

"So far as known, there have been but eight snowslides in Clear Creek County in which lives were lost, the last one previous to this winter being fifteen years ago. The first of which there is any record occurred on Democrat Mountain on the 15th of February 1874...[probably account no. 2].

"On the 24th of March, 1875, James Fallon attempted to escape from a snowslide on Democrat Mountain...[5]. Three men who were living in a cabin located under a high cliff on Sherman Mountain, were buried one night in the winter of 1875 by an immense hood of snow falling upon their cabin, crushing it in. The fatality was not discovered until April {7}.

"On February 13, 1879, two men were caught in a slide in Geneva District, killing one of them...[11]. On the 17th of the same month, eleven men were caught by a snowslide in that district, but all escaped except one...[12].

"The cabin located in a gulch between Brown and Hanna Mountains, was crushed in by a snowslide on January 14, 1881, killing two people...[14]. On April 10, 1881, one man was killed and one carried down several hundred feet by a snowslide on Republican Mountain."... [This is the only report we found of this accident.]

40. *Georgetown Courier*, Saturday, March 4, 1899

"A snowslide carried away the ore house at the Josephine Mine, West Argentine. Tony Madison stepped into the tunnel just in time to escape.

"Monday afternoon a snowslide started from near the summit of Republican Mountain and ran down a steep ravine to Silver Gulch, which it crossed, leaving a deposit of snow in the gulch about 50 feet deep, and shot up Democrat Mountain for several hundred feet. Turning, it went over a cliff of rocks and fell upon the Moline Tunnel blacksmith shop, wrecking that building and destroying a portion of the tramway, and then passed on down Silver Gulch and stopped at the edge of Mr. R. O. Old's yard. A cabin and blacksmith shop belonging to Mr. Wm. Hunt, and standing in the path of the slide as it came down Republican Mountain are missing. Four men were on their way up the mountain, who would have been in its path if it had occurred a few minutes later. The slide was more than a mile long, and where it started, it left a perpendicular cliff of snow 15 or more feet in height and a thousand feet in length." [For previous damage to Mr. Hunt's Cabin see [19].]

41. *Georgetown Courier*, Saturday, March 11, 1899

"A slush slide came down Bridal Veil Gulch Wednesday. It moved very slowly, but created a good deal of noise."

42. *Georgetown Courier*, Saturday, May 27, 1899

"The shop at the Josephine Mine, which was carried away by a snowslide [40], has been rebuilt and work at developing the mine commenced."

43. *Georgetown Courier*, Saturday, April 14, 1900

A Grist of Snowslides

"Six snowslides occurred in the vicinity of Silver Plume last Saturday. The only one that did any damage was at the Seven-Thirty, where the roof of one end of the compressor house was crushed in. No damage was done to the machinery. Lester Wilson was the only person in the building. He heard the slide and rushed out, and catching his foot in the doorway as he rushed, probably thought that all was up with him.

"Another slide covered the Pelican Road with fifteen feet of snow for a distance of sixty feet. No effort was made to shovel it out, and several of the ore wagons were left on the road near the slide. Subsequently, they were covered up by another slide.

"One slide about 300 feet long started at the top of the mountain and stopped at the base opposite the railroad pavilion. Work has been suspended at the Seven-Thirty Mine until the danger from snowslides is past. There is said to be immense masses of snow in the cliffs above the mine."

44. *Georgetown Courier*, Saturday, April 21, 1900

Heaviest Snowfall on Record

"The snowfall that followed the phenomenally early thunder and lightning storm on the night of April 3rd, left a record never before equaled here within the memory of the oldest inhabitant. In thirteen days' times it is estimated from measurements that more than eight feet of snow fell. Much of the snow melted as it fell, while the first foot that came down resolved itself speedily into two inches of slush.

"Snow continued to fall more or less regularly for more than a week. The best estimates and the most careful measurements put the first fall at not less than five feet. After an intermission of two days, a new invoice commenced arriving Saturday night, and Easter morning found eighteen inches of new snow, and the storm showing no indications of any abatement. Nor did it stop but for a few minutes at a time until Monday noon, when about three feet at least had fallen.

"The first storm caused six snowslides on the morning of the 7th in the immediate vicinity of Silver Plume. The road at the Seven-thirty Mine was blocked, and the danger of slides caused a cessation of work at the mine until the 13th. The fall on the 11th again stopped work, and the road which had been cleared was again blocked and the snow so deep and soft that it was impossible Monday morning to get through it afoot.

"The weight of the snow on house roofs was so great that it became dangerous and many had it removed before the roofs came down on their heads. The old barn on 7th Street was overloaded and is in a state of collapse, and the roof of the old Washington Mill fell in under the weight.

"Sunday evening the train made no effort to go beyond Georgetown, but on Monday noon, under {a} good head of steam and a single coach, the engine and a band of shovelers broke the road to Silver Plume. The road to Blackhawk was blocked for several days. There is now apprehension that when the snow commences to melt, it will cause dangerous landslides, and a rush of water down the creek that will do a great deal of damage to the railroad.

"The only storm that came near equaling this one was in April, 1862, when from three to five feet of snow covered the mountains, and wagon roads were blocked for some time. On the 21st of May 1876, snow followed a thunder storm and continued for several days. Four feet of snow fell in Georgetown and a blacksmith shop standing on the site of F. A. Maxwell's office was crushed in and a cabin in lower town went under. It caused a landslide in Griffith Gulch 'which brought down the accumulation of rocks and dirt of fifty years.'

"Right here it might be remarked that it is somewhat singular that all landslides, be they ever so often, bring down the accumulation of the previous fifty years, as in the case of Griffith and Taylor and Silver Creek Gulches. On the 23rd of April, 1885, between three and four feet of snow fell in one night, causing numerous snowslides, and crushing in the roof of the roller skating rink standing on the ground now covered by the Centennial dump. This has not been surpassed for the amount of snowfall in so short a time."

45. *The Switzerland Trail of America* (Crossen 1962, p. 127-132)

"At 2 p.m. on Thursday, April 18, 1901, two locomotives of the Colorado and Northwestern Railroad were hit by an avalanche near Camp Frances (1 mile S. of Ward or 14 miles W. and 3 miles N. of Boulder) (Figs. 7, 8, and 9). Four men were killed and one injured. The locomotives were slightly damaged. The two locomotives were hitched double-headed behind a gondola filled with gravel and a wedge snowplow. The locomotives were trying to buck through the snowdrifts on Grassy Mountain above the Big Five Mine siding. A recent storm had just deposited about four feet of new snow on top of the old snow. The third time the train hit the snowdrift, an avalanche started in an area of fire-killed trees above the railroad. The avalanche mowed down the dead trees and hit the train which rolled 400 feet down the mountain. The locomotives came to rest against a switch of the Big Five Mine siding near the mouth of the Adit-Dew Drop Tunnel.

"Killed in the accident were W. J. Hannan (engineer), F. M. Milner (fireman), E. B. Fitzgerald (fireman), and W. H. Blair (conductor). James Marks, engineer of the rear locomotive, was injured but survived. An eyewitness account of this accident was published in the Boulder Daily Camera of December 4, 1941 in the column 'People I Meet' by Forest Crossen."

[Another account (Brown 1968, p. 83) gives the date of this accident as April 24, 1901, which appears to be an error.]

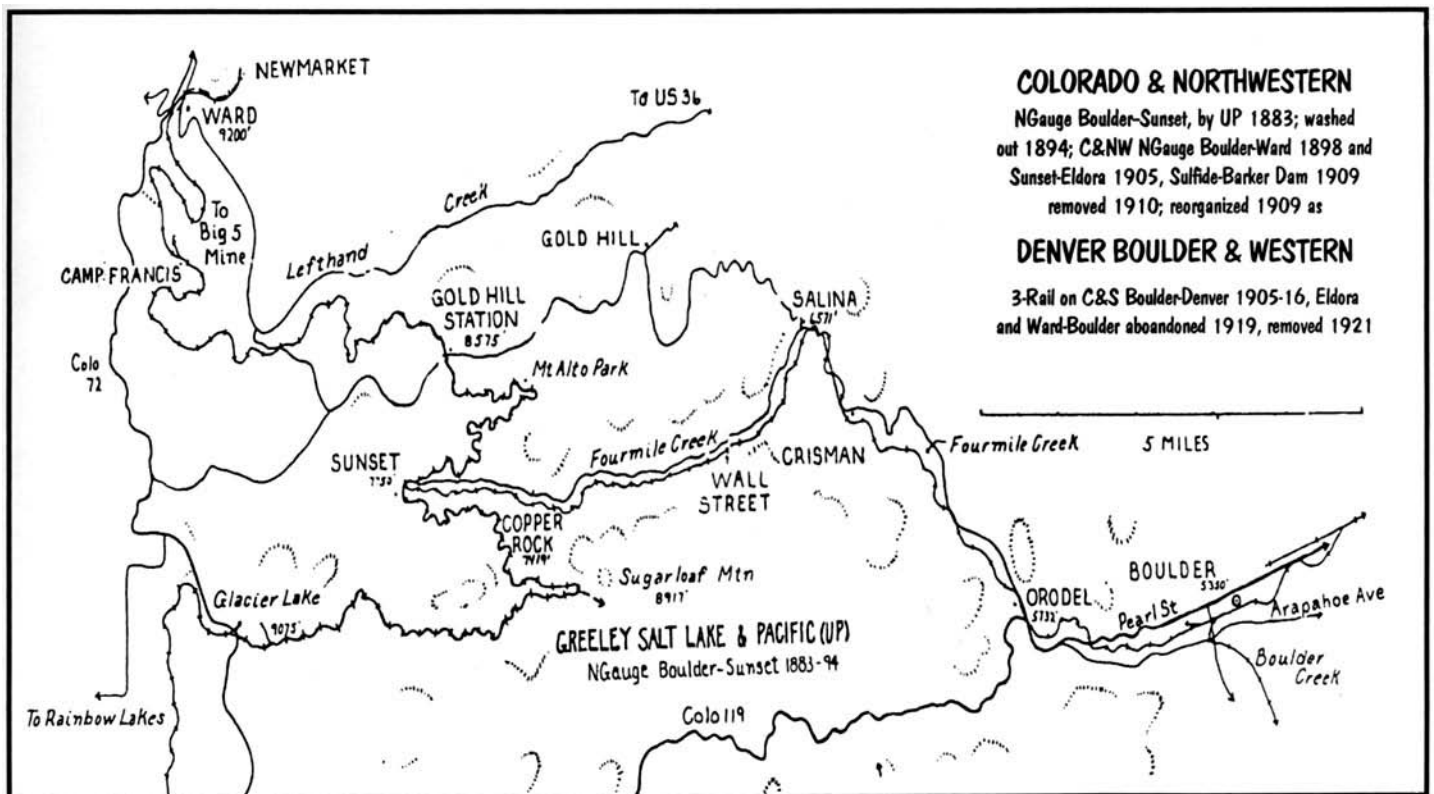


Figure 7. — Railroad to Camp Francis and the Big Five Mine from Boulder (modified from Ormes 1975, by permission).



Figure 8. — Locomotives number 30 and 31 and a snowplow lie on Big Five Siding — near the mouth of Adit-Dew Drop tunnel. Compare with Figure 9 (R. H. Kindig Collection, Denver).



Figure 9. — The two locomotives and the snowplow on the Big Five Siding after most of the snow had melted. Compare with Figure 8 (A. A. Paddock Collection, Boulder Historic Society).

46. *Summit County Journal*, Saturday, December 13, 1902.

SUDDEN DEATH

William T. Smith Killed in a Snowslide

"Summit County has just sustained the loss of another good citizen, William T. Smith, of Dillon. The particulars are substantially these:

"On last Sunday several boys of Dillon with guns, went out into the woods hunting for wild game. Their route was up what is known as Elk or Straight Creek, in a northeasterly direction from Dillon. The source of the creek is near the dividing ridge or range between Summit and Grand Counties, and its water flows into the Blue River at a point one mile north of Dillon.

"In this Straight Creek Gulch, five miles from the Blue, is located a sawmill owned and operated by {the} deceased. There the snow is about two feet deep. A deer showed himself to the young hunters, and one of them took a shot at it, wounding the animal. In bounding away toward the range, the deer left a trail of blood on the snow. The boys followed the trail till they became tired, and, night coming on, they abandoned the chase and started for home.

"On their way home they stopped at the sawmill and related to Smith their experience during the afternoon. Smith remarked that in the morning he would go out and track the deer and 'put him out of misery.'

"Early Monday morning Smith took his gun and started after the deer. The trail was followed up the gulch for five or six miles, thence up on the divide and over on the Williams Fork side, into Grand County. There it was that Smith met a sudden and awful death. The country is rough and rocky, with numerous cliffs strung along the side of the mountain. Some of these ledges of rock descend abruptly to depths of from 10 to 100 feet. From the crest of one of these cliffs, a small snowslide swept poor Smith onto jagged rocks 200 feet below. Death was instantaneous.

"An examination disclosed the fact that Smith's neck, back, legs, and arms were all broken, and his face smashed." [Interstate highway I-70 is now located in the Straight Creek drainage. The Eisenhower Tunnel is at the upper end of this drainage.]

47. *Summit County Journal*, Saturday, March 28, 1903

"Last Monday a snowslide occurred on the Bullion property, at Montezuma, which caught five men who were doing some work on a tram-bucket. The snow carried them down the hill over half a mile, and stopped only at the timber. It is almost a miracle that none sustained injuries other than a few slight bruises."

48. *Georgetown Courier*, Saturday, April 1, 1905

Caught in a Snowslide

"Oscar Hoffman and Chas. Gileen, who are operating the Arapahoe group of claims in the Argentine District, dropped down from the clouds last Sunday. They report plenty of snow on the range, a fact which is causing them no end of worry. A slide occurred a short time ago, sweeping away about forty sacks of high grade ore, the estimated value is about \$6,000 to the ton.

"On their journey to this city, Mr. Hoffman got tangled up in a small slide and was escorted down the mountain side a distance of 700 feet. When discovered by Mr. Gileen, only one boot was visible. He was rescued and is none the worse for the experience."

49. *Silver Plume Silver Standard*, Saturday, March 17, 1906

"A snowslide swept down upon the boarding house at the Santiago Mine in East Argentine District yesterday morning about four o'clock and partially demolished it, but, fortunately, no one was seriously injured. The men employed at the mine and a woman who was doing the cooking for them, fifteen in all, fled in their night clothes to the Paymaster Mine some distance away and nearly all had their feet badly frostbitten. The snow up there is eight or nine feet deep, and the men who were grading the railroad have all been laid off."

[Lovering (1935, p. 104-105) mentions the Santiago, Commonwealth, and Centennial Mines as though they were all one. The Santiago is on the southeast slope of McClellan Mountain at an elevation of about 12,000 feet (Figs. 10 and 16). It is about 1 mile northwest of Waldorf Tunnel and 6-2/3 miles northeast of Montezuma. He located the Commonwealth Tunnel at about 1/4 mile north of the Santiago Mine at an altitude of about 12,000 feet. No mention was made of the Paymaster Mine.]

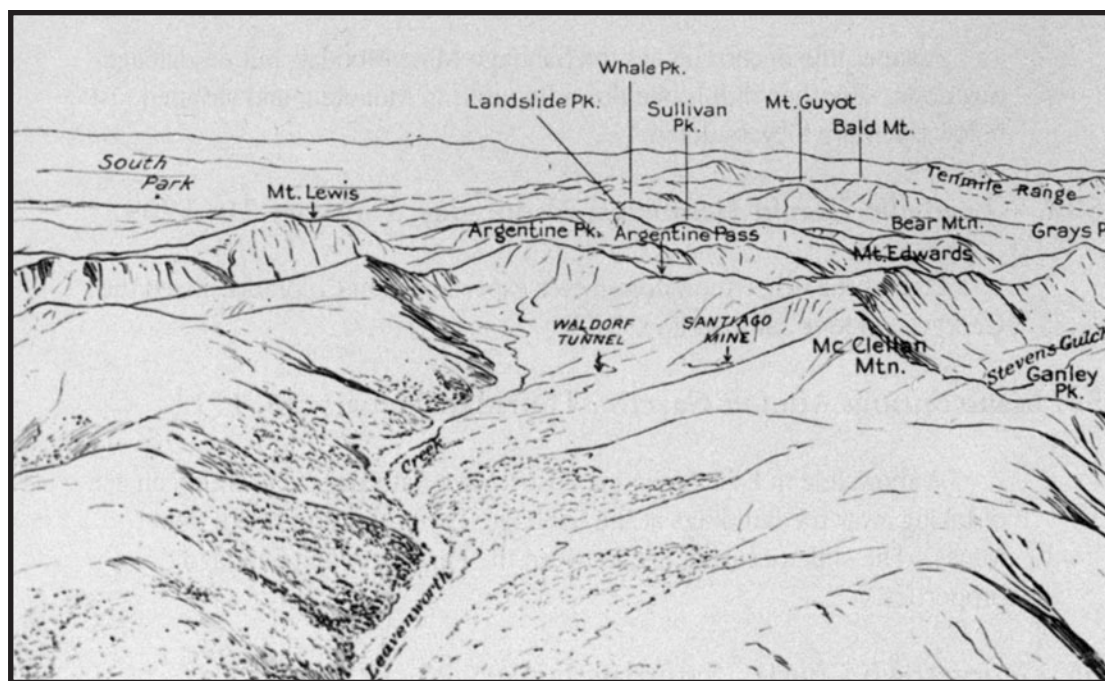
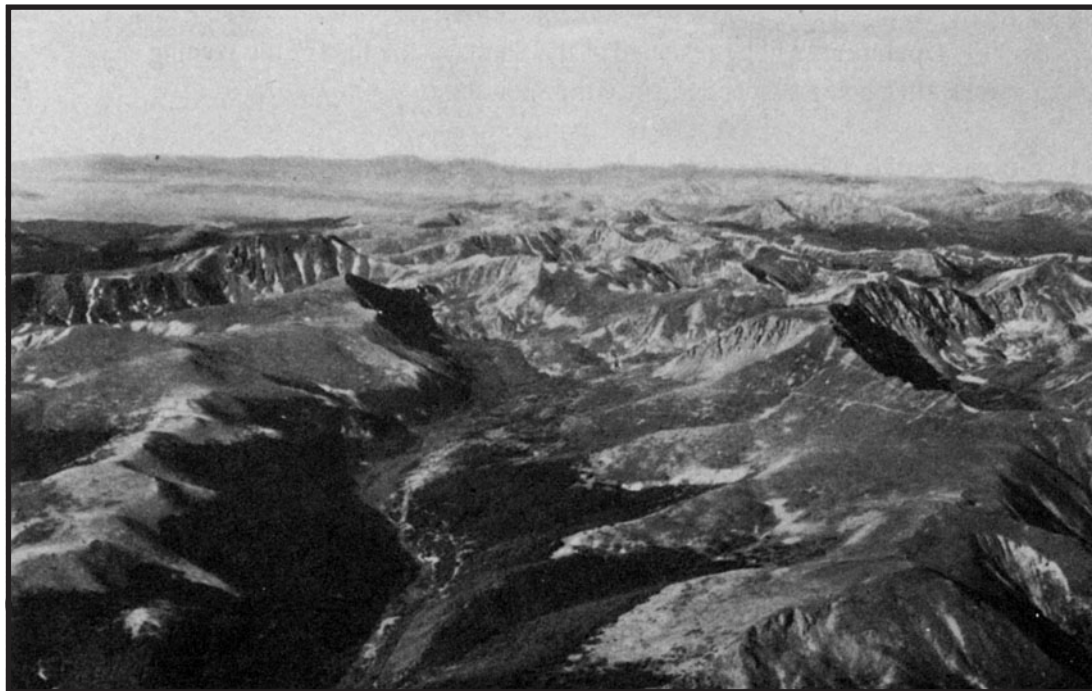


Figure 10. — Aerial view of upper Leavenworth Creek showing location of Santiago Mine, Waldorf Mine [tunnel], Argentine Pass, McClellan Mountain, and Stevens Gulch (Lovering 1935, pl. 1).

50. *Silver Plume Silver Standard*, Saturday, March 31, 1906

"Operations will be resumed at the Santiago the first of the coming week after being suspended since the snowslide."

51. *Georgetown Courier*, Saturday, June 9, 1906

"The production from the Argentine has been considerably less since the enforced suspension of work on the Santagio Mine, caused by the snowslide in March when the boarding house and other buildings were swept away, fortunately, however, without the loss of life.... Tents will be pitched for temporary shelter...later on when the snow is gone, new buildings will be erected for all necessary purposes. When this work is completed Manager Rogers intends building a tram road from the mine to Sunset Peak to meet the aerial tramway now being erected from Silver Plume to that point."

52. *Georgetown Courier*, Saturday, February 16, 1907

"A snowslide last week swept away a number of the poles of the Transcontinental Company's telephone line, and several sections of air-pipe."

53. *Georgetown Courier*, Saturday, January 30, 1909

"A snowslide occurred near the Santiago Mine Monday, but no damage was done. Another slide came down Republican Mountain and stopped just below the Mary Meyers dump."

53X. *Leadville Herald Democrat*, Wednesday, February 10, 1909

"One of the worst snowstorms ever experienced in Colorado closed the Georgetown loop railroad line" [177].

54. *Idaho Springs Mining Gazette*, Thursday, January 26, 1911

"A snowslide in East Argentine District last Saturday came within an ace of taking away the buildings at the Santiago, Paymaster and North Star Mines. The slide occurred just between the Paymaster and Santiago properties."

55. *Georgetown Courier*, Saturday, January 28, 1911

"L. G. Davenport narrowly escaped taking a short ride in a snowslide last Monday near the Santiago Mine. Davenport was on his dump when he saw the mass of snow break loose at the top of the mountain and at once

started to escape it. He first ran into the blacksmith shop and attempted to get under the bellows, but finding no room there, he began a hot-foot across the hill, and as he passed the mouth of the North Star Tunnel, M. Bonham grabbed him and pulled him into the tunnel just as the slide passed."

56. *Idaho Springs Mining Gazette*, Thursday, February 22, 1912

"A snowslide occurred in Argentine District Sunday morning and four steel towers of the Colorado Central power line were swept away. One of them was so badly damaged, it will be of no further use. A gang of men went to the scene of the catastrophe Monday morning for the purpose of making repairs. In the meantime, the line was out of commission."

57. *Georgetown Courier*, Saturday, February 24, 1912

Power Line Towers Wrecked by a Snowslide

"A heavy snowslide occurred on Ruby Mountain, west of Argentine Pass last Sunday, which wrecked three transmission towers of the Central Colorado Power Company and put the line out of commission for several days. Two miners' cabins were also carried away. The slide occurred west of the point where the emergency line branches from the main line over the range.

"The tower where the line branches was built below a body of timber and was thought to be safe from snowslides, which occur on Ruby Mountain every winter. The cabins were also built below the timber and it is supposed the snowslide must have been through the timber. Two towers below the emergency tower on the main line were completely wrecked and one was carried away out of sight. The emergency tower was pulled over by the strain on the wires. Several men were sent up from Georgetown on Monday to commence repair work, and Monday's train brought two and Tuesday's train two more of the company's men from Leadville, who were unable to get into the district from that point on account of the roads being blocked."

58. *Georgetown Courier*, Saturday, May 4, 1912

"Mr. E. W. Fairchild, who last year was employed by the Montezuma & Western Railway as an expert to help examine the mines here with the efficient consulting engineer, Robert S. Billings, has been retained this winter to keep track of weather conditions, the locations of snowslides, and to measure their width and depth, so as to be able to report intelligently to the Montezuma & Western engineers this summer."

59. *Georgetown Courier*, Saturday, December 6, 1913

"Three buildings were carried off their foundations at Silver Plume by a snowslide from Sherman Mountain. One building was occupied by Mrs. Benzo [Benso] and her children, who were taken out injured.

"C. Nelson got caught in a snowslide above Clear Lake [on South Clear Creek, 2 ° miles south of Georgetown] on Thursday and worked three hours to extricate himself.

"About one o clock Friday morning, a small snowslide [in Georgetown] wrecked a chicken house belonging to Harry Nash, and crushed in one side of the kitchen at the home of Mrs. Parker [64 and 78].

"John O'Connell, Oscar Johnson, and Joe Wood, who have been working on the Illinois Lode [on Republican Mountain west of Cherokee Creek], became separated in the deep snow when returning Friday afternoon. O'Connell was caught by a slide which carried him to the creek, where he was found in semi-conscious condition. Johnson and Wood found refuge in the Cashier Mine and a party from the Plume went to their rescue this morning." [See 77 and 78 for another accident to Mrs. Benzo's home.]

60. *Idaho Springs Mining Gazette*, Thursday, December 11, 1913

"A rock and snowslide came down the gulch up Virginia Canyon near the old toll gate last Saturday afternoon, tearing away the chicken house back of the kitchen at the home of Carl Anderson. A monster rock made its way through the kitchen door and landed in the center of the bedroom. Twenty-two chickens were killed.

"A small snowslide occurred last Friday in Grass Valley which did considerable damage to the barn in the rear of A. Nordstrom's home. A slide just below the cemetery did much damage to the old Allen house. A great amount of debris crashed into the rear of the building filling one of the rooms half full."

61. *Idaho Spring Mining Gazette*, Thursday, December 11, 1913

Two Men Near Death

**Snowslide on Brown Mountain above Silver Plume
Sweeps John O'Connell 'Down the Mountain**

"A snowslide occurred last Friday morning in Brown Gulch above Silver Plume, and that the lives of three men were not snuffed out seems

miraculous. The slide broke loose just below the dumps of the upper workings of the Seven-Thirty Mine, and swept {away} everything lying along its course for a considerable distance. John O'Connell, who was riding a mule, happened to be in line, and as a result both he and the animal disappeared from view. Oscar Johnson and Joe Wood, who are operating a lease on the Seven-Thirty, were swept to one side. They took refuge in an old deserted cabin near the Cashier Mine, not daring to venture forth in the raging storm until the following morning when they made their way back to their own cabin.

"As soon as the report of the slide had been received in Silver Plume, rescue parties were organized. The news had gone forth that O'Connell, Johnson, and Wood were buried beneath the snow. The first man to be found was O'Connell, a searching party running across him that evening as he was endeavoring to make his way into town. He was found to have escaped serious injuries, although he received a bad shaking up.

"After searching part of the following day for Johnson and Wood without finding them, the belief became general that they had met death in the disaster. That evening, however, they were found in their cabin. Neither had in the least way been injured.

"The mule that O'Connell had been riding met death in the slide, and just how O'Connell escaped being crushed to death in being whirled down the mountain remains yet unexplained.

"The slide occurred in the same gulch that another one took place in 1900. At that time seven men were killed and to this day two of the bodies were never recovered."

[This may refer to the slide of February 12, 1899 [34] when seven men, one woman and two children were killed. We found no records of any snowslide fatalities in this area in 1900.]

62. *Georgetown Courier*, Saturday, December 13, 1913

Some Previous Heavy Falls of Snow

"There have been quite a number of heavy falls of snow in this region in past years, but none within the limits of Georgetown equaled the fall of last week. The first heavy snowfall in the county of which there is any record was in April, 1862, when the ground was covered to a depth of about five feet. In the spring of 1875 there was a heavy fall of snow on the mountains causing a number of snowslides, one of which came down the gulch between Republican and Democrat Mountains and covered twenty acres of ground in lower town. James Fallon was mortally injured in this slide. [5]

Another slide occurred on Sherman Mountain, in which Wm. G. Morgan, Chris Jenson [Jensen], and Patterson Martin lost their lives [7].

"On the 22nd of May, 1876, snow fell to a depth of four feet, which was believed to have been the deepest since 1862. The snow was heavy and crushed in a number of buildings, and the roofs of many other buildings were endangered. This was followed by a number of disastrous landslides. A monster slide came down Griffith Gulch and extended to Taos Street. Another landslide from Griffith Mountain filled several ice houses belonging to Albert Selak. One on Beaver Brook threw a locomotive into the creek.

"On March 6, 1881, the heavy fall of snow delayed the train ten hours. On the 23rd of April, 1885, between three and four feet of snow fell in one night and crushed the rink building. In January 1883, there was a heavy fall of snow over most of the state. In May 1889, three feet of snow fell in Georgetown within a week. On the 29th of May 1894, a snowstorm turned into a torrent of rain that lasted 44 hours and converted the streets to the lower part of town into rivers. The railroad was washed out in the canyon and no trains were run from the 30th of May until the 7th of June.

"In February, 1889, snow was three feet deep in the park. Three persons were killed by a snowslide at the Seven-Thirty Mine and ten men [ten people; seven men, one women, 2 children] perished in a snowslide in Cherokee Gulch." [34, 34A, 34B, and 36]

63. *Georgetown Courier*, Saturday, December 13, 1913

Empire News

"The snowstorm of last week did considerable damage to many buildings and sheds in and around town. The power house at the Empire Tunnel, between town and the railway station has a dilapidated appearance. The roof has caved and unless attended to at once the building will be a total wreck. The large building at the Golden Empire, built about ten years ago, is a total wreck, and but little of the lumber can be saved. The town hose house has a caved-in roof. The damage is small owing to the roof being built out of corrugated iron. By having the roof repaired at once, further damage can be averted.

"A small slide broke the sash and windows where Jack Trenberth lives. The only complaint that Jack makes is that he objects to the snow coming into the house at two a.m., thereby compelling him to shovel snow in full evening dress. At the home of Al Rockwell a shed at the rear of the house was struck by a slide and driven through the end of the house, breaking many dishes and damaging many pieces of furniture.

"The Red Men's building came near being listed as a wreck. [See [78] for another account of damage to this building.] Some passer-by heard the building creaking and soon several of the members were busy getting the snow off the roof. Upon examination, it was found that the {building} was shoved out about eight inches. Large iron rods were forged and the building braced into place.

"The shed back of Maire's livery barn collapsed and demolished a buggy owned by our road overseer. A snowslide struck the building of the Duluth and Empire Mining Company and covered the building to the top of the roof. The house was not damaged, thereby proving that it pays to hire men like Anton Mueller and E. E. Kock to erect your buildings. The above is the total list of damage done in this section."

64. *Georgetown Courier*, Saturday, December 13, 1913

"A snowslide came down Republican Mountain opposite the Loop Bridge Tuesday afternoon and buried the wagon road under twenty feet of snow...and one snowslide near the Alspaugh cabin that was about eight feet deep.

"A snowslide from Republican Mountain covered the Silver Plume road within the limits of Georgetown to a depth of five to twelve feet for a distance of about 40 feet. A force of men has been employed ever since in putting the road in traveling condition.

"The snowslide from Griffith Mountain last week, after filling the deep railroad cut, shot across and broke through a window at the home of H. Nash, filling rooms with two or three feet of snow, and covered the roof of a part of the building to a depth of three feet. The railroad cut back of the house probably saved it from being crushed or swept from its foundation. The slide also took a shot at the home of Henry Kneisel, breaking the bathroom window and filling the room with snow. Mr. Nash lost his chicken house and about a dozen chickens, others being dug out alive. Mrs. Parker's chicken house was partly wrecked, and the kitchen of her home was well nigh {demolished}." [59, 68, and 78]

65. *Georgetown Courier*, Saturday, December 13, 1913

"Mr. Marcus Bonham and son, Bert, who are leasing on the Commonwealth Mine in East Argentine, were driven out of their cabin Thursday of last week by a snowslide, and sought refuge for the night in the unoccupied cabin of the Mt. McClellan Mines Company."...

66. *Georgetown Courier*, Saturday, December 13, 1913

"The rotary snow plow left Denver at three o'clock Monday morning and reached Golden at ten o'clock, and started for Georgetown at 11 o'clock, with three engines and thirty men. The rotary reached Georgetown between seven and eight o'clock Wednesday evening. A hundred or more citizens congregated at the depot to see the machine bore its way through the snow. It was the first time a rotary snow plow had been brought into use on this branch of the Colorado & Southern Railroad.

"After cleaning up the side track at the depot, the rotary with three engines pushing, started for Silver Plume. Considerable difficulty was encountered when the rotary hit the snowslide from Griffith Mountain, which was not only deep but filled with rocks and stumps. The rotary reached Silver Plume about midnight, soon after the work train left Georgetown, the passenger train pulled in, the first since Wednesday evening of last week."

67. *Georgetown Courier*, Saturday, December 20, 1913

"John Johnson was killed by a snowslide which wrecked his cabin on Collier Mountain, near Montezuma. A searching party, after several hours shoveling, found his body hunched in the bed as though he had been killed while trying to get up."

68. *Georgetown Courier*, Saturday, December 20, 1913

"The reflex from the Griffith Mountain snowslide hit Henry Kneisel harder than the slide itself. When the rotary snowplow got at work in the cut back of Mr. Kneisel's house, it sent a stream of packed snow, rock and chopped wood through eight lights of glass, each 20 x 32 inches, and filled three rooms with a conglomeration that kept Mr. Kneisel at work for several hours. Harry Nash, who had just succeeded in removing the snow that the slide left on his house and in his yard, was again deluged with snow and his home buried three feet deep in packed snow that cracked the plastering overhead and broke out a window and filled a room three or four feet deep."
[64]

69. *Georgetown Courier*, Saturday, January 3, 1914

"John McKenzie died above Freeland Friday morning about nine o'clock. On Thursday afternoon he was out with his snowshoes when a snowslide overtook him and buried him about four feet under the snow..."

Snowslide at Idaho Springs

"An aged man and his wife, whose names we have been unable to learn, were victims of a snowslide at Idaho Springs Wednesday night. They were dug out of the wreck at two o'clock in the morning."

[We have assumed they were killed by the avalanche.]

70. *Georgetown Courier*, Saturday, March 21, 1914

"A section of the power line to the Waldorf Mine was taken out by a snowslide near the Stevens Mine last Sunday. The Hydro Company has had the line repaired in order to furnish power to the Tobin Tunnel." (Figs. 10 and 16)

71. *Idaho Springs Mining Gazette*, Friday, January 7, 1916

TWO MINING MEN SWEEPED TO DEATH IN SNOWSLIDE ABOVE SILVER PLUME

County Surveyor A. H. Osborne and Eddie Collins Buried under Avalanche

"Were Engaged Yesterday Morning in Making Surveys in the Vicinity of Old A. P. Tunnel in West Argentine — Bodies Not Yet Recovered — Although Half Hundred Men Have Been Working Heroically for Thirty Hours.

"A. H. Osborne, deputy U.S. mineral surveyor of Georgetown, and Edward Collins, well known young man of Silver Plume, were caught by a snowslide yesterday morning eight miles above Silver Plume, and are believed to have been instantly killed.

"Searching parties who left for the scene of the catastrophe within an hour following the report being received in Silver Plume, had failed to find any trace of either Osborne or Collins up until this noon. Thirty men worked all day Thursday and Thursday night, while a relief crew was on hand early this morning to proceed with the search for the bodies of the missing men.

"Osborne was making some surveys of some mining property owned by Collins which is situated in the vicinity of the old A. P. Tunnel near the main range in West Argentine district. They were proceeding up the gulch near the Josephine Mine when the big slide broke down upon them, sweeping everything before it in its wild fury.

"The slide was fully 50 feet wide and had an average depth of at least 12 feet. According to the statement of Ray Buckley of Silver Plume, who happened to be on his way to the Josephine Mine, and who witnessed the slide in its descent down the mountain..."

[The Josephine Mine is on the north slope of Kelso Mountain. There are three adits at altitudes of 10,893; 10,801; and 10,651 (Lovering 1935, p. 85).]

[The Atlantic-Pacific (A.P.) Tunnel's eastern portal is on the west side of Sonora Gulch at an elevation of about 11,000 feet and only a short distance above the stream in Steven's Gulch. Sonora Gulch is the prominent ravine on the north face of Kelso Mountain.]

[The centerline of the tunnel extends S 15° W about under the center of Kelso Mountain and passes under the Continental Divide about halfway between Grey's Peak and Mount Edwards. The west portal is on Ruby Mountain above Decatur in Summit County, Ellis and Ellis 1983, p. 178-181.]

71A. *Georgetown Courier*, Saturday, January 8, 1916

ARTHUR H. OSBORNE AND EDWARD COLLINS PERISH IN A SNOWSLIDE

"Georgetown was stunned by an appalling disaster Thursday, which resulted in the death of Arthur H. Osborne, U.S. Deputy Mineral Surveyor of Georgetown and Edward Collins of Silver Plume, who were engulfed in a snowslide from Kelso Mountain.

"Mr. Osborne was engaged in surveying mining claims for Edward Collins and Ray Buckley, who were assisting. The three had partaken of their noonday lunch and started up A. P. Gulch (probably Sonora Gulch), which is about 30 feet wide with precipitous sides. Suddenly the snow broke away from the smooth mountain side, not more than 50 feet above them. It came with such a rush that it carried Osborne and Collins from their feet, the former carrying a transit and the latter an ax and tape line. Buckley, who had nothing to impede his movements, scrambled out of the snow. The last he saw of Osborne and Collins they were sitting on the snow and being carried down the steep and narrow gulch by the rapidly moving snowslide, which stopped about half a mile below the starting point.

"Buckley, being unable to find his companions, went to the Josephine Mine, 1 and ½ miles away, for assistance...night found about 40 men on the ground. The slide was from 5 to 7 feet deep. On account of the precipitous sides of the gulch with no place to throw the snow, it was deemed best to commence at the foot of the slide and work up the gulch. The men were engaged all night long shoveling snow, and all day Friday.

"No news had been received from the rescue party up to six o'clock Friday."...

71B. *Georgetown Courier*, Saturday, January 15, 1916

Bodies Recovered of Snowslide Victims

"The bodies of Arthur Osborne and Edward Collins...were found Saturday morning about half way up the avalanche. The body of Osborne was found under five feet of compact snow, and that of Collins under 18 inches of snow. Both were lying on their faces, head down. Collins' neck and back were broken, and Osborne's left shoulder was dislocated or broken. The transit, ax and tape line were found near the bodies, which were about 15 feet apart.

"Osborne had been engaged for several days in surveying mining locations for Edward Collins (19 years old) and Ray Buckley, who were assisting him in the work. Thursday noon they started across a ravine on the mountain side which was covered to considerable depth with snow. Buckley was in the lead, followed by Collins, and then by Osborne.

"On reaching the middle of the ravine, Buckley sank into the snow up to his waist. He told his companions to watch out, as there was a hole. Just as he got out Collins dropped into the hole, and in his efforts to get out, started the snowslide, which broke away about 50 feet above him. Buckley was on the edge of the moving snow and saved himself. Collins and Osborne were immediately engulfed in the slide and in a few moments, carried out of sight. The snowslide, instead of piling up at the foot of the ravine (Sonora Gulch), made a sharp turn and continued down the gulch (Stevens Gulch) for a distance of nearly 2500 feet."

72. *Georgetown Courier*, Saturday, January 15, 1916

Snowslides of Past Years

"As far as known there have been eleven snowslides in Clear Creek County in which lives were lost, the last one previous to this winter being 17 years ago. The first of which there is any record occurred on Democrat Mountain on February 15, 1874, in which Charles Ritchie was carried over a precipice and killed. [This is an error—Ritchie was killed February 1876 [8].]

"On March 24, 1875, James Fallon attempted to escape from a snowslide on Democrat Mountain by climbing a tree, but his supposed refuge was uprooted and carried along in the wreck [5]. William G. Morgan, Chris Jensen, and Patterson Martin, who were living in a cabin

located under a high cliff on Sherman Mountain were buried one night in the winter of 1875 by an immense hood of snow falling upon their cabin, crushing it in [7]. The fatality was not discovered until April.

"On February 13, 1879, Nicholas Benny and Dan Cameron were caught in a slide in Geneva district. Benny perished but Cameron escaped, although injured [11 and 12].

"On the 17th of the same month, 11 men were caught by a snowslide in that district, all escaped except Chas. Allen [12].

"The cabin occupied by Wm. and Knox Pinckard and a colored cook by the name of Lucy Jones, located in a gulch between Brown and Hanna [Silver Plume Mountain] Mountains, was crushed in by a snowslide on January 14, 1881. Knox Pinckard and the colored woman were killed, but Wm. Pinckard was rescued alive. This is the slide started by Jim Perchard's voice when he halloed 'good-bye' [14].

"On April 10, 1884, W. M. Wooding was killed and Geo. W. Kessler carried down several hundred feet by a snowslide on Republican Mountain [20].

"The most disastrous snowslide was that on February 12, 1899, which resulted in the death of Domenico Destefane and his wife and son and two daughters." [Number 34 shows only two Destefane children were killed.] The snowfall that winter was one of the heaviest of which there is any record. The immense hoods of snow on the crest of Sherman Mountain broke away at 8:45 in the morning, and sent an avalanche of snow down Cherokee and Willihan Gulches that did not stop until within a short distance of the school house in Silver Plume.... The body of Destefane was not recovered until April, when Peter Vigna discovered a finger protruding from the ice in Cherokee Gulch.

"On February 22, 1899, another avalanche equal to that of the 12th, broke away from Brown Mountain at 4 o'clock in the morning, killing Ben Nelson, John Anderson and Dan Fitzpatrick, and destroying the buildings at the Seven-Thirty Mine and some cabins. Ben Nelson, John Anderson and Peter Olsen were sleeping in a room over the ore house. The three were buried out of sight, but Olsen was dug out alive. Dan Fitzpatrick was killed in his cabin. The body of Nelson was found the latter part of the following April by B. C. Cotren, Sr., who discovered a human foot protruding from the snow. The body of Anderson was never found" [36].

73. *Summit County Journal*, Saturday, March 11, 1916

SNOWSLIDE KILLS MONTEZUMA MINER

Huge Mass of Snow Crashes into Shoe Basin Bunk House as August Ostburg and Ed Larson Sleep; Former Dies Next Day

"August Ostburg, aged 45, died early Tuesday morning at the Shoe Basin Mine, at the foot of Argentine Pass, five miles above Montezuma, as a result of injuries received in a snow slide Monday morning.

"The slide crashed down the mountain at 3 o'clock, completely demolishing the bunk house and barn. Ostburg and Ed Larson, miners employed by the Shoe Basin Company, were asleep in the bunk house at the time. Larson was uninjured and managed to dig himself from the debris. He found his way to the transformer house, where he wrapped himself in such pieces of clothing as he could find, and hurried to Montezuma for help.

"Rescuers hastened to the scene and worked for nine hours in liberating Ostburg, who was pinned beneath the wrecked building in his bed. When taken out he was apparently uninjured except for minor bruises. He lost consciousness at no time and suffered no pain; it was believed that he would be on his feet in a day or two. His death, occurring fourteen hours later, was unexpected and doubtless due to internal injuries which were not manifested in any way...

"The slide occurred in an entirely new place, previous slides having taken place on either side of the present one. It came a distance of half a mile and was 500 feet wide. It carried before it huge boulders and a mass of timber, and that both Ostburg and Larson were not killed outright is considered remarkable."

[Another account of this accident in the *Georgetown Courier* for Saturday, March 11, 1916 says Shoe Basin Mine was on Ruby Mountain—buildings were at the foot of the mountain.]

74. *Georgetown Courier*, Saturday, December 15, 1917

Snowslide at the Urad Mines

"On Tuesday night, along about the time that the instruments at the College of the Sacred Heart recorded a number of earthquake shocks in Colorado, a snowslide came down the precipitous side of Red Mountain [about 6 miles west of Empire] near the Urad Mine in Daily District, carrying away 20,000 feet of mill timbers and about ten tons of coal. The slide came so close to a tent in which five men were sleeping that it jerked the canvas from over their heads, but left the men unharmed.... The site of the mill is located out of danger from snowslides, but the lumber had been unloaded where slides were frequent."...

75. *Georgetown Courier*, Saturday, May 1, 1920

"The steam shovel at the Colorado Central Mine, working on the Marshall dump, was submerged by a rock and snowslide last Saturday, and put it out of commission. [South slope of Leavenworth Mountain 0.6 miles south of Georgetown Reservoir.]"

76. *Georgetown Courier*, Saturday, May 22, 1920

"Four men were employed two weeks in repairing the Paymaster Tunnel in East Argentine, which was caved in for 100 feet by a snowslide. The tunnel connects with the Wilcox Tunnel air shaft."

[In his write-up of Waldorf, which is near the head of Leavenworth Creek, 6 ° miles east-northeast of Montezuma, at an elevation of 11,600 feet, Lovering (1935, p. III) says the Wilcox Tunnel was driven into McClellan Mountain to cut the Commonwealth Vein.]

77. *Georgetown Courier*, Saturday, April 16, 1921

A Record Snowfall Followed by Disasters

"After two days of blustery weather, a steady fall of snow set in on Thursday and continued for 24 hours. Friday morning the fall approached three feet, and when the storm let up in the afternoon the total fall probably approached four feet...it was the heaviest fall of snow since Dec., 1913, when on the morning of the 5th the ground was covered to the depth of 4 1/2 feet. Trains were blockaded eight days.

"The power plant gives the snowfall at 52 inches, and water 3.72 inches.... A snowslide came down Griffith Mountain Friday afternoon and all but wrecked the home of Mrs. Parker in Georgetown [59, 64]. The rear room was crushed in and one wall of the main building badly damaged....

"The greatest disaster was at Silver Plume, where a snowslide from Sherman Mountain wrecked the homes of Charles Sebelia and Mrs. Benso. Mr. Sebelia, a young married man, was so badly injured that he died within a short time. His wife escaped with a few minor injuries.

"Mrs. Benso's home was under a mass of snow that required four hours work before Mrs. Benso and one of her daughters were rescued, uninjured. Another daughter was thrown against a stove and seriously burned." [See [59 and 78] for another accident to Mrs. Benso's home.]

78. *Georgetown Courier*, Saturday, April 23, 1921

Avalanches Aplenty

"The snowslide at Silver Plume came from near the summit of Sherman Mountain and swept the mountain side clean. When it hit the back of the town hall, which it damaged to some extent, the slide split (Figs. 5, 11, 12, 13 and 14). Part of the roof of the K. P. Hall was taken off and the brick wall damaged, and also one end of the Magnetti store building. In all, five buildings were utterly destroyed, some of them being small structures, and five others were more or less damaged.

"The home of Mrs. Benso received the full force of the avalanche. Nothing remains but the foundation and floor. Mrs. Benso and her two daughters, who were caught in a snowslide several years ago, were preparing to leave the house, fearing a snowslide. Mary Benso was seated by the kitchen stove putting on her rubbers, when without a moment's warning the house was crushed and thrown from its foundation. A vessel containing hot water was thrown upon Mary Benso, scalding her neck, mouth and arms. She was left only about half buried by the snow, and was assisted out by Mrs. Sebelia. Mrs. Benso and Grace Benso were swept down the hill some distance and remained under the snow two hours or more before they were rescued. They were protected by a table over their heads, and over the table was part of the roof. Both escaped without serious injury. The household furniture, including a piano, was damaged beyond repair.

"The near-by house occupied by Mrs. and Mr. Charles Sebelia was unroofed and crushed in. Mr. Sebelia was buried in the mass and smothered to death. Mrs. Sebelia found herself outside of the building, without serious injury. She believes she was thrown through a window.



Figure 11. — Avalanche debris piled against the corner of the Town Hall at Silver Plume. This avalanche, which ran on April 23, 1921, flowed around the back of the Town Hall (Silver Plume Historic Society).



Figure 12. — Close-up view of the avalanche debris from the April 23, 1921, avalanche at Silver Plume. The Town Hall is to the left, a private home to the right (Silver Plume Historic Society).

"The slide from Griffith Mountain [1 ~ miles east of Georgetown] that broke the brick walls of the dining room and kitchen at the home of Mrs. Parker, was about a hundred feet in width. In addition to filling up the railroad cut for some distance, it wrecked and carried the Parker stable into the yard of Gordon Kyner. Louis Parker was in the kitchen when the snow struck the building, and was thrown to the opposite side of the room, else he might not have escaped injury [59 and 64].

"A monstrous slide, about 300 feet wide, swept down Hanna [Silver Plume Mountain] Mountain, two miles above Silver Plume, and spread itself over the valley without doing any damage. Two smaller slides came down near the Pay Rock Mill and buried the auto road.

"Three snowslides came down Leavenworth Mountain in the region of the Power Company's dam. One broke the stand-pipe in the pipe-line, causing an opening which sent a flood of water down the almost dry creek bed.

"The roof of the Red Men's hall at Empire fell in under the weight of the snow. The building was used as a storage room by the Berthoud Pass road contractors. [Previously damaged and repaired in 1913 [63].]

"A snowplow propelled by three locomotives reached Georgetown Saturday night, but was unable to plow its way through the snowslide which filled the cut at the base of Griffith Mountain. Shovelers were put at work Monday, and the first train went to the Plume on Wednesday.

"Henry Butler and Nels Williams, who came down from Argentine Tuesday, report snowdrifts from ten to twenty feet deep. They came down on bed-slats improvised into snowshoes. [Skis were originally called snowshoes.]

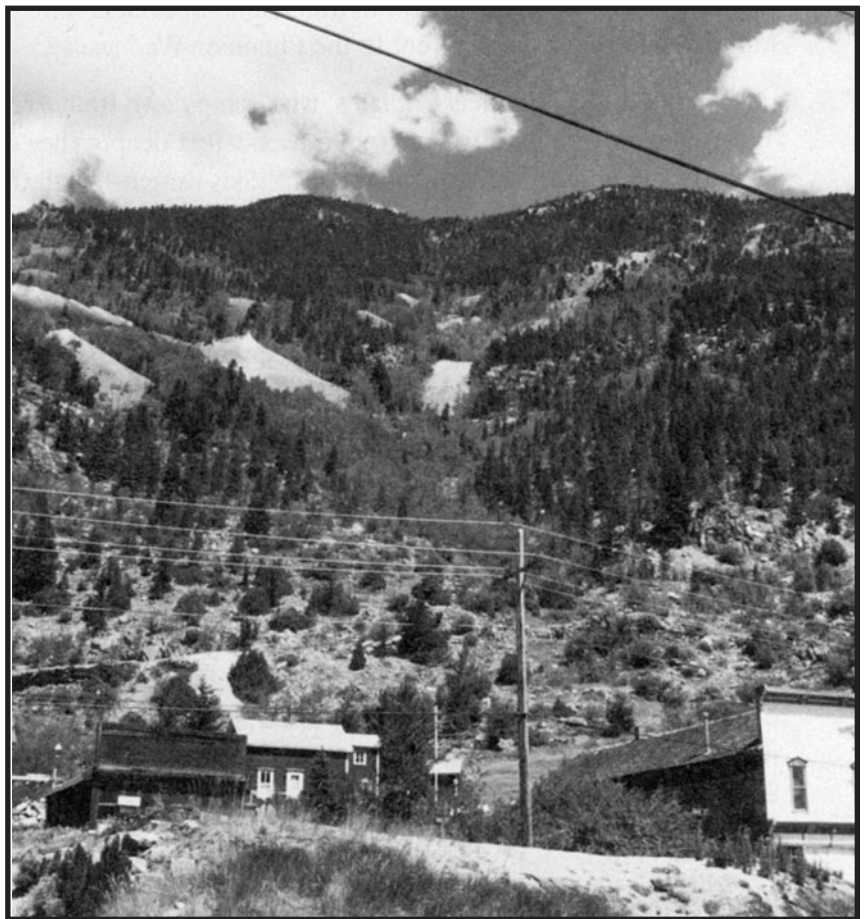
"It was impossible to ascertain the average depth of the snow on account there having been some wind to drift it. The electric plant reported 52 inches. Mr. Bushnell measured four feet ten inches. Calculated on the weight of the snow on Mr. Swanson's scales, the precipitation equaled about six feet of snow. When snow ceased to fall on Friday the platform scales at Swanson's livery, 6 ft. 9 in. by 13 ft. 9 in. showed a weight of 2600 pounds, or 28 pounds to the square foot. Computed on the usual basis of 15 to 1 would make about 75 inches of snow.

"Some old-timers remember the snow of May, 1876, as one of great depth, but the published report says it was two feet deep. Had the snow fall of May 29 and 30, 1885, not melted almost as fast as it fell, it would have been a memorable record. Snow fell continuously from Wednesday morning until Thursday evening. A little more than four feet of snow covered the ground on the morning of December 5, 1913." [See photograph p. 29, Smith and Wisler 1980.]

Figure 13. — The site of the April 23, 1921, avalanche as seen in August 1981. The debris of the Sebelia and Benso homes shown in the previous two figures was piled against the corner of the Town Hall between the building and the butane tank.



Figure 14. — This August 1981 picture shows the avalanche path above the eastern end of Silver Plume, where Mr. Charles Sebelia was killed on April 23, 1921. The white-fronted building is the Town Hall mentioned in account 78.



79. *Georgetown Courier*, Saturday, April 23, 1921

"The slide at the Plume [Silver Plume] swept a setting hen about 400 feet. When found, the hen was still on the nest, with only two broken eggs. Snowslides had no terrors for that chicken."

80. *Georgetown Courier*, Saturday, April 10, 1926

"An immense snowslide on Blue Mountain, on the Berthoud Pass road last week put the telephone lines over the range out of commission. Several poles were broken and the wires were buried in the snow."

[This is probably the Dam slide—that area is called Blue Dirt Hill. In April 1957, this avalanche killed two people when it was intentionally released by artillery fire. (Gallagher 1967, p. 33).]

81. *Georgetown Courier*, Saturday, May 29, 1926

"Joe Campbell visited the Santiago Mine Wednesday and found only the boarding house intact. All the other buildings had been swept away by a snowslide. Judging from the amount of snow stored up, Mr. Campbell advises the building of an ark." (Figs. 10 and 16)

82. *Georgetown Courier*, Saturday, June 5, 1926

"Manager O. B. Willmarth reports a small snowslide at the Kelso National Mine since the 10th of May, which carried off a blacksmith shop."

[The Kelso Mine is on the north slope of Kelso Mountain at an altitude of 10,800 feet. It was worked by the Kelso National Mining Company (Loving 1935, p. 86).]

83. *Georgetown Courier*, Saturday, April 29, 1933

Record of Heavy Snows

"The fall of about five and one-half feet of snow last week is one of the heaviest on record in Georgetown.

"On April 1, 1876, we have a record of 15 inches.

"May 2nd of the same year supplied two feet, with two buildings crushed in.

"April 23, 1885, nearly three feet.

"May 5, 1893, sixteen inches.

"February, 1899, heavy fall the latter part of the month. Snow more than four feet deep in City Park, many snowslides.

"April, 1900, heavy snow during the month.

"April 14, 15, 1903, three feet. Disastrous snowslide at Silver Plume.

"December, 1913, eighty-nine inches fell the first week."

84. *Georgetown Courier*, Saturday, April 29, 1933

"A small snowslide swept over the power plant and part of the mill of the Commonwealth Company the latter part of last week, which caused about \$500 worth of damage. It carried off about 75 feet of air pipe and did considerable damage to the mill, and banked up about twenty feet high below the mill.

"About twenty snowslides, mostly small ones, blocked the road between here and Silver Plume last week. The largest of these covered the road with ten feet of snow for a distance of 150 feet just below Silver Plume. On Sunday, the county commissioners called for labor and about 75 men responded.

"The road was made passable that evening, after being isolated for two days."

85. *Georgetown Courier*, Saturday, April 4, 1936

Snow Record

"The snow depth readings for the four snow scales in Clear Creek County have just been completed for the end of March by the Forest Service for the U.S. Weather Bureau. These scales were installed during the summer of 1910 and readings for the end of March and April have consistently been made each year since.

The following comparisons are of interest:

	End of March Readings	
	Year 1936	Average 25 years
Urad Mine	58 in.	50.2 in.
Empire Ranger Station	24 in.	17.3 in.
Waldorf Mine	91 in.	43.0 in.
John Puchert's Ranch	41 in.	16.8 in.

"The depth of snow at the Waldorf and at John Puchert's is now the greatest for this time of the year that appears on record since the establishment of the scales, while the readings at the Urad Mine and at the Empire Ranger Station have not been equaled or exceeded except for the years 1912, 1918, and 1932. The water for the scales at the end of March this year equals about 21% of the depth of the snow.

"Last fall an 1800 foot snow course was laid out near the foot of Loveland Pass by the Colorado Bureau of Agricultural Engineering for the purpose of securing additional and more accurate data on snow fall. The Forest Service is cooperating with the State Bureau in making these readings.

"The first readings have just been made by Earl Williams of Silver Plume and Ranger Helmick after an eleven hour snow-shoe trip to the location of the course. The various depths of snow and water content was determined by accurate instruments from samples taken at regular fifty foot intervals along the entire length of the course. The average of some thirty samples indicates 55.8 inches of water content."

86. *Georgetown Courier*, Saturday, February 13, 1937

"The search for two Denver men, who disappeared last Sunday at the Berthoud Pass ski course, has been abandoned. It is believed they were caught in a snowslide which occurred that afternoon. If such is the case, the bodies may not be recovered until the snow melts in the spring."

87. *Georgetown Courier*, Saturday, May 29, 1937

Body of Lost Skier Found

"The frozen body of one of the two Denver skiers, who disappeared on February 7 at the Berthoud Pass ski course, was found Friday in a snow bank within a half mile of Berthoud Pass Inn.

"The two skiers, Joseph Oppenheimer and John S. Oberdorfer, disappeared last February 7, at the time of a snowslide on the ski course. Identification as to which of the two skiers was found had not been made.

"The rapidly melting snow will undoubtedly soon disclose the body of the other unfortunate man."

88. *Summit County Journal*, Friday, March 24, 1939

SNOWSLIDES BATTLED IN THE ROCKIES TO MAINTAIN ELECTRIC SERVICE

"The irresistible force conquered the immovable object when Tariff Slide, in the heart of the Rocky Mountains, about 4 ° miles from Montezuma, Colorado, settled a score of long standing early Monday, February 27, 1939.

"For almost a third of a century tower No. 724 of the Shoshone-Denver 100,000-volt transmission line of the Public Service Company of Colorado has safely withstood the barrage of snowslides leveled at it. Its Rock-of-Gibraltar defense, heretofore, has been a protecting knoll on which it was built thirty years ago. Each spring Tariff Slide has turned loose tons of destructive force which caused the mountains to tremble as the snow and rock mass plunge down the 2,000-foot incline. Always the snow slide hurled by, leaving [towers] 724 unharmed.

"This winter it seemed that Tariff Slide prepared for a supreme try. Additional tons of snow piled up in the horseshoe-shaped pocket at the top of the slide. When the huge mass let go its mooring this time, it covered a wider front than ever before—nearly a fifth of a mile. The crest of the snow-must have been as high as a three story building. It swept down over the protecting knoll, lapped up over the top, uprooted the 50-foot steel tower from its concrete foundations, flipped it more than 300 feet in the air, and deposited it in a crushed mass on the opposite side of Peru Creek."

[This happened at 1:32 a.m. A three-man crew found the break at 5:30 a.m. Temporary power was restored by 4 o'clock the next day followed by full service at 5 p.m., March 1. Tons of material and equipment were carried or dragged to the site by a crew of over 20 men, who worked for 14 hours per day for 3 consecutive days in severe weather.]

[Tariff Mine is located 1,000 feet above Decatur at the base of Cooper Mountain and 5 miles from Montezuma (Fossett 1880, p. 492). Max Dercum, of Montezuma, whose mining company once owned the Tariff and Tariff East Mines, says these mines were in the saddle just east of the Cooper Mountain summit.]

[The *Berthoud Bulletin* for March 3 and 26, 1936, has articles about other avalanche problems along this transmission line.]

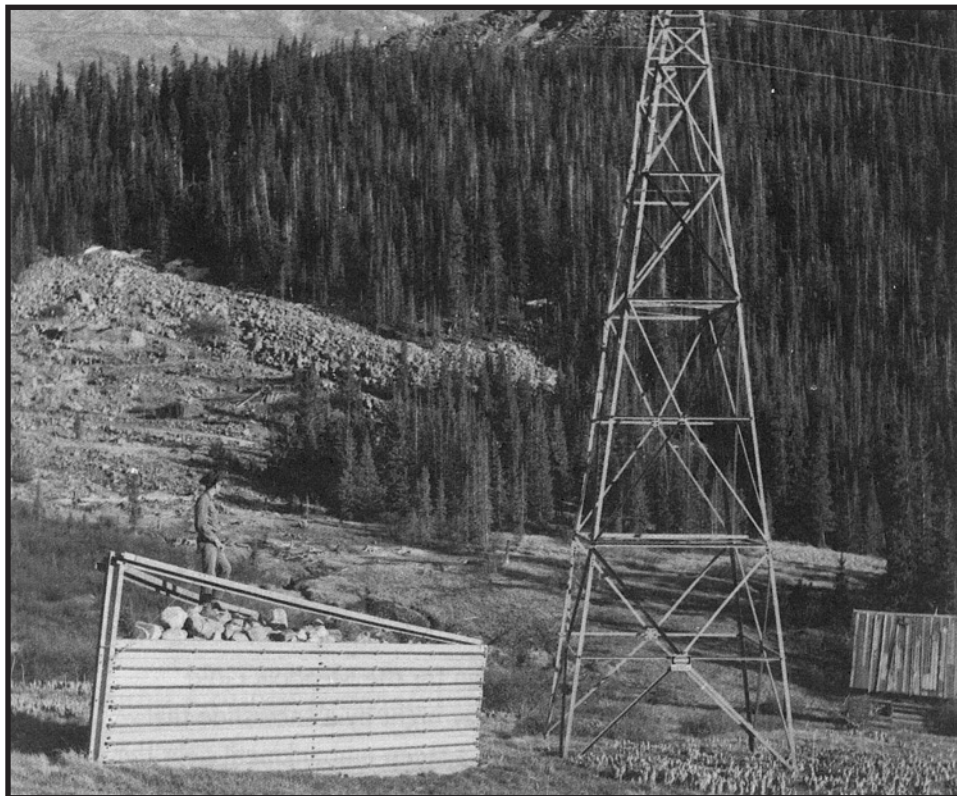


Figure 15. — An avalanche splitter wedge up hill from a high voltage transmission tower in Peru Creek. Photo taken 25 June 1964.

89. *Georgetown Courier*, Friday, March 12, 1943

"A heavy snowslide that came hurtling down the mountain covering Loveland Pass highway, three miles beyond Silver Plume early Wednesday morning, caused no damage or loss of life as it was too early for travel. It was several days before the highway was cleared for traffic." [Several avalanche paths threaten the highway in this area. From the data given, it is not possible to identify which avalanche ran.]

90. *Georgetown Courier*, Friday, March 31, 1944

Adam Frazer Snowslide Victim

"Adam Frazer of the maintenance crew of the State Highway Department and a member of the oiling and graveling crew, was sent to Georgetown in January to help keep Highway 6 clear of snow and ice. He met his death from a snowslide Monday afternoon while clearing the highway near the foot of Loveland Pass. He and a companion, Robert Etzler, had been sent with their bulldozer and truck to clear the highway of a snowslide that was blocking traffic over Loveland Pass to Climax. After eating their noonday lunch, they agreed that Frazer would clear the highway over the top of the pass.

"A second snowslide came down when Etzler was out of sight and hearing, sweeping the cab from the bulldozer and carrying the 15 ton machine down the mountainside about 100 yards. A soldier from Camp Hale saw the slide and came back to where Etzler was working and told him what had happened. The two men returned to where other men were at work and gave the alarm, which was relayed to Silver Plume, Georgetown, and Idaho Springs. Rescue crews were organized who immediately went to the scene and after digging snow and ice and rock for two hours, Frazer's body was found crushed under the slide."

[This accident happened at the Seven Sisters Avalanche paths near Loveland Basin Ski Area on Highway 6.]

91. *Georgetown Courier*, Friday, February 16, 1945

Denver Man Killed in Snowslide on Berthoud Pass

"Harold B. Willis, 45, of Denver, a salesman for the Meadow Gold Creamery Co., was swept to his death last Friday night by a snowslide that carried his automobile from the highway down a steep embankment near the foot of Berthoud Pass.

"Death resulted instantly from a skull fracture. The car was buried under snow and rocks about 400 feet down the slope and Willis' frozen body was found about 150 feet further on, partly buried in the snow.

"Willis probably was caught in a slide that occurred between 9 and 9:30 p.m. Friday and which the highway crew had cleared away by midnight. The search for Willis started when his employers reported he had failed to arrive in Denver on schedule.

"Clarence McMillian, highway supervisor, was searching the slide area on foot when he saw an object protruding from the snow several hundred yards below the road. It was one hand of Willis."

[This accident was at what is now known as the Stanley Avalanche Path.]

92. *Georgetown Courier*, Friday, February 7, 1947

Water Measurements

"The first of the snow surveys taken annually during the four winter months by the Forest Service to determine how much water will be available for domestic, industrial and irrigation use next summer, was made recently. The Loveland Pass snow course which is considered representative of the watersheds contributing to the water supply of the counties east of Denver, shows an average snow fall of 33 inches which contains 7-1/2 inches of

water. The average for the past five years at February 1, is 32 inches of snow which stored a little less than 7 inches of water.”

93. *Georgetown Courier*, Friday, February 28, 1947

“Loveland Pass was hit by a snowslide on Tuesday afternoon [February 25]. A highway maintenance truck with two men was caught in the slide which closed the pass for three hours until the work crews could clear a lane for one-way traffic. Neither of the men was injured and the truck remained on the road.

“The slide occurred on the second switchback of the western slope. Snow sweeping down from the slopes blocked 675 feet of highway, according to Chas. Kemp of the Highway Maintenance Department.”

[This was probably what is now called the Five-Car Avalanche path. It runs down a small drainage and crosses the highway about 1800 feet below the second switchback.]

94. *Summit County Journal*, Friday, March 21, 1947

Loveland Pass Opened After Two Large Slides

“The Colorado Highway Patrol reported in Denver that Loveland Pass is open after being blocked by two snow slides Sunday [March 16].

“The first slide on the west side of the pass came Sunday morning. Highway crews from Dillon had almost opened the road when another slide in the afternoon buried the road to a depth of 35 ft. Rocks and trees were dumped into the road along with the snow.

“Another highway, 285, was also blocked between Jefferson and Fairplay by drifting snow, and the traffic was routed over secondary roads until the drifts were opened.”

95. *Summit County Journal*, Friday, January 30, 1948

YOUTH KILLED IN SNOW SLIDE

Dog Saves Two

“Lonnie Burch, 16, of Montezuma, lost his life Saturday morning [January 24] in a snowslide at Montezuma while two companions escaped, with the help of a dog, from the slide.

"The three men and the dog were caught in the avalanche of thundering snow as they were coming to Montezuma for supplies from their mine, the Shoe Basin. The avalanche was 15 feet high and 200 feet wide.

"Fred Burford, owner of Smokey, Emmett Brophy and the boy, all employed at the mine, were walking on snow shoes toward town, after waiting three days for the weather to clear so they could make the trip; the boy looked up as the three men and the dog were crossing the Rothchild slide area and exclaimed, 'Here it comes, men!' Almost instantly the slide caught them and they rolled several hundred feet in the slide.

"After pawing himself to the surface, the shepherd dug the snow away from the face of his master, then proceeded to do the same for Brophy, and then located the body of Burch. After freeing themselves from the snow and their snow shoes the two men attempted to revive the life of Burch, after 35 minutes of artificial respiration, by the watch, they gave up and came on to Montezuma, and told of the accident, and officials were notified."...

[The Rothschild Mine (Minerou) is on Cooper Mountain. The portal is 200 feet above Peru Creek about ½ mile northwest of the mouth of Cinnamon Gulch and about 3 miles east-northeast of Montezuma (Lovering 1935, p. 99).]

96. *Summit County Journal*, Friday, January 30, 1948

SKI TRIP FATAL

"The body of William Marquis of Denver, one of two skiers killed Sunday when they were caught in a snowslide near the top of Loveland Pass, was recovered Monday afternoon under ten feet of snow. Marquis was found about 100 yards from where the body of his companion, Everette Dierks, Denver, was recovered Sunday night a few hours after the men were caught in the avalanche. A third companion, Jack T. Elliot, Denver, was also caught in the slide but dug himself free and went for assistance."

[This avalanche starts just north of the first major switchback on Highway 6 about one mile northeast of Loveland pass near the top terminal of the Loveland Valley Chair Lift.]

97. *Georgetown Courier*, Friday, March 5, 1948

Seven Sisters Slide Sunday

"Many travelers and Denver skiers were forced to spend Sunday night [February 28] in Dillon, or lodges in the area as a result of the half mile long slide on the east side of Loveland Pass, properly known as the Seven

Sisters Slide Area. The slide completely covered Highway 6 and occurred in the same spot as did the snowslide last year about this time, which carried down with it huge boulders and uprooted trees.

"No one was caught by the slide, but one car, occupied by a Denver couple, Mr. and Mrs. Ainsworth and a small child, was almost covered by the dangerous slide. They stopped in time and their car just nosed the slide as it stopped."

98. *Georgetown Courier*, Friday, March 12, 1948

Snow Slides Halt Local Miner

"Mr. D. M. Houston, of Georgetown, now living at the Clear Creek Ranch and who has been working the Alaska Mine on Griffith Mountain in Georgetown, has been forced to stay at work because of snow slides on three different occasions over the portal of his mine. Houston is doing development work in the Alaska {Mine}."

99. *Georgetown Courier*, Friday, March 26, 1948

"The snow slide reported by the Denver Post to be on Loveland Pass and of considerable proportion, was a small slide which slid down from the top of Mt. Parnassus. The highway department boys had it all cleaned from the road in twenty minutes."

[This slide probably came down the drainage just west of Thompson Gulch. It is now known as the Bard Shoulder Avalanche. To our knowledge it has not come to the road in the last 50 years.]

100. *Georgetown Courier*, Thursday, April 5, 1949

Snow Slide Tragedy

"At 11:00 a.m. April 1, a snowslide occurred just off the Rainbow Run at the Loveland Basin Ski Course. Four persons were buried in the slide. Craig Izett, 18; Eugene Borg, 16; and Mr. Allen Bennett, who is manager of the ski area, dug themselves out to safety. Sidney Prather, 17 year old employee of the Bennett's, who lives at 2500 S. Washington, Englewood, could not dig himself out...men worked frantically all day to recover young Sidney. His body was found at 5:15 p.m. under five foot of snow."

101. *Georgetown Courier*, Friday, March 17, 1950

Snow Avalanche Study on Berthoud Pass

"A study to determine why snow slides occur when they do, is currently being conducted at Berthoud Pass. The study is being made by Mr. Whitney Borland of the Bureau of Reclamation in cooperation with the Army and the Forest Service.

"Borland is accumulating information on total snowfall, temperature, wind velocity, and snow structure in an attempt to learn the conditions that precipitate avalanches.

"Probably the most curious piece of equipment used by Borland is the penetrometer. With this instrument, he is able to measure the snow's resistance to penetration of a blunt rod driven into the snow by dropping a known weight from varying heights along the road.

"By plotting these results, Borland is able to show graphically which layers of the snow are well consolidated and relatively safe and which layers are unconsolidated and could produce a snow slide, if for some reason such as a heavy new snow, a broken-off snow slab from a cornice, or a man, should disturb their equilibrium.

"The study is in its first year and, with some exceptions, is patterned after similar studies which have been made in the dangerous Alps country of Switzerland for many years."

102. *Summit County Journal*, Friday, February 9, 1951

SNOW SLIDES ON LOVELAND

"Monday evening, large snow slides on each side of Loveland Pass held up traffic for several hours. It was noon Tuesday before the road was open to one-way traffic. Then more slides were reported Wednesday evening... Berthoud Pass on highway 40 was also closed and traffic halted due to slides. But with so much snow and it so wet, some thing had to give. Fortunately, to date, no lives have been taken nor anyone hurt in the slides."

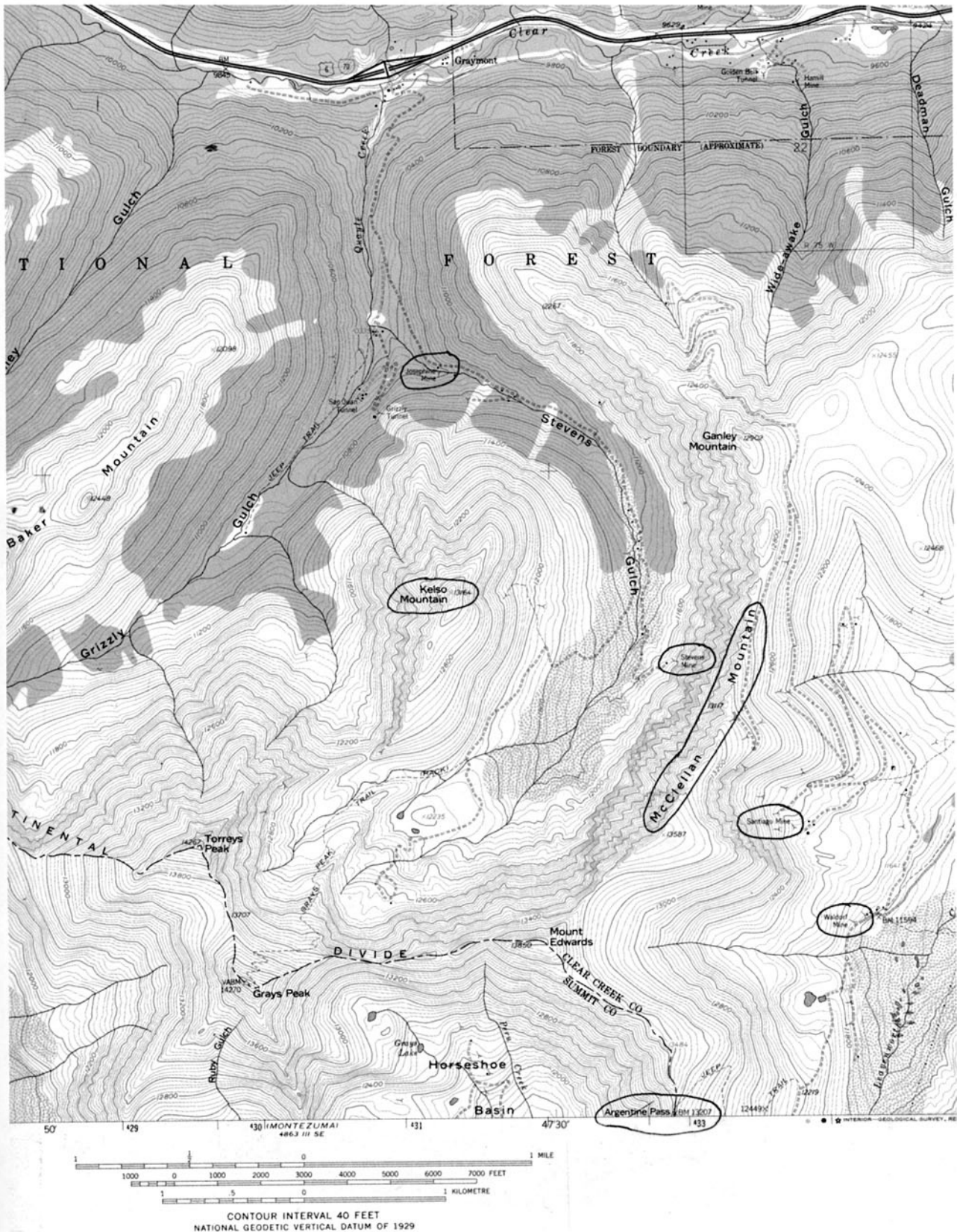


Figure 16. — Part of the Greys Peak 7-1/2 minute quadrangle (USGS).
Places mentioned in the newspaper accounts are circled.

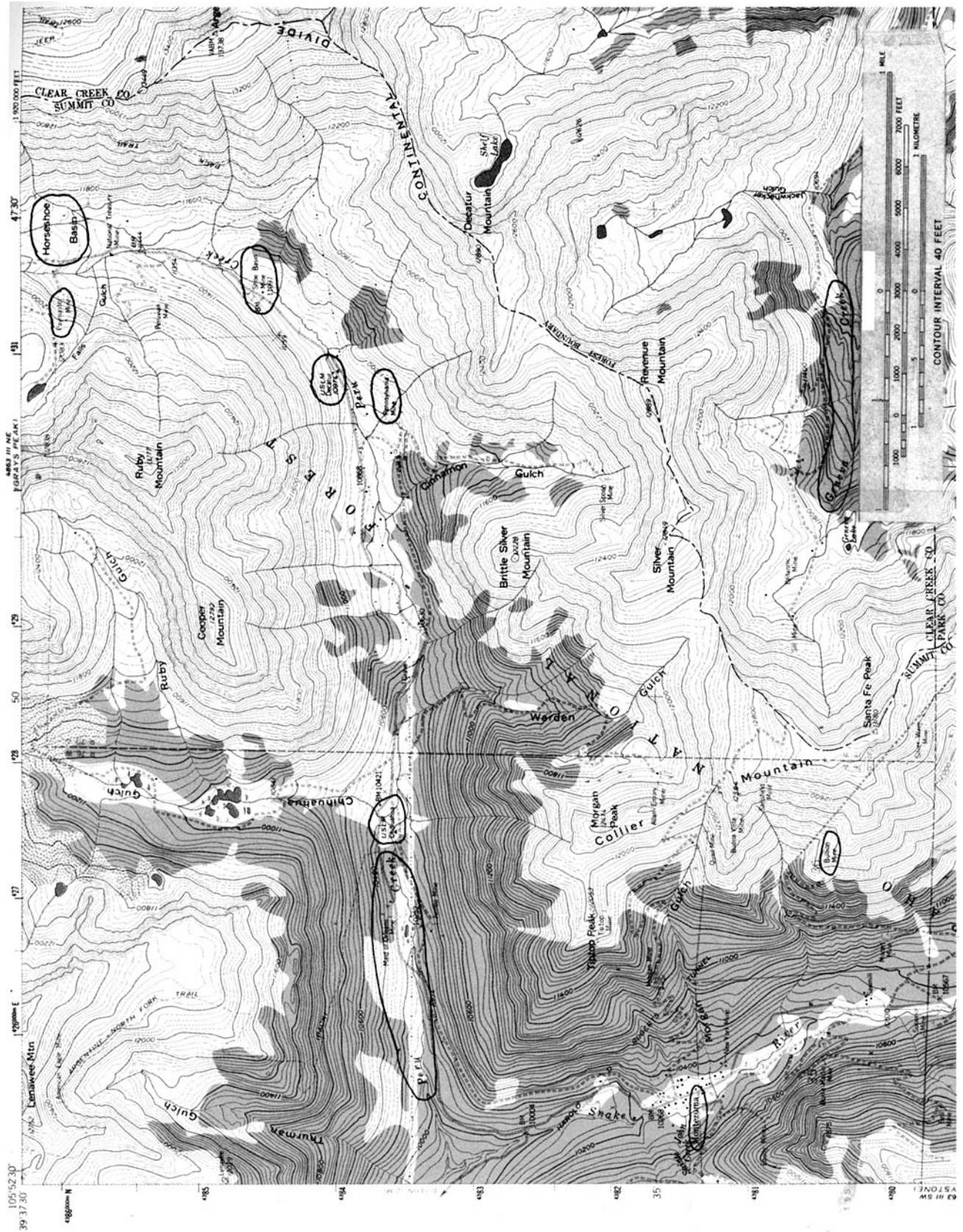


Figure 17. — Part of the Montezuma 7-1/2 minute quadrangle (USGS). Places mentioned in the newspaper accounts are circled. [Figure 18 fits below this one.]

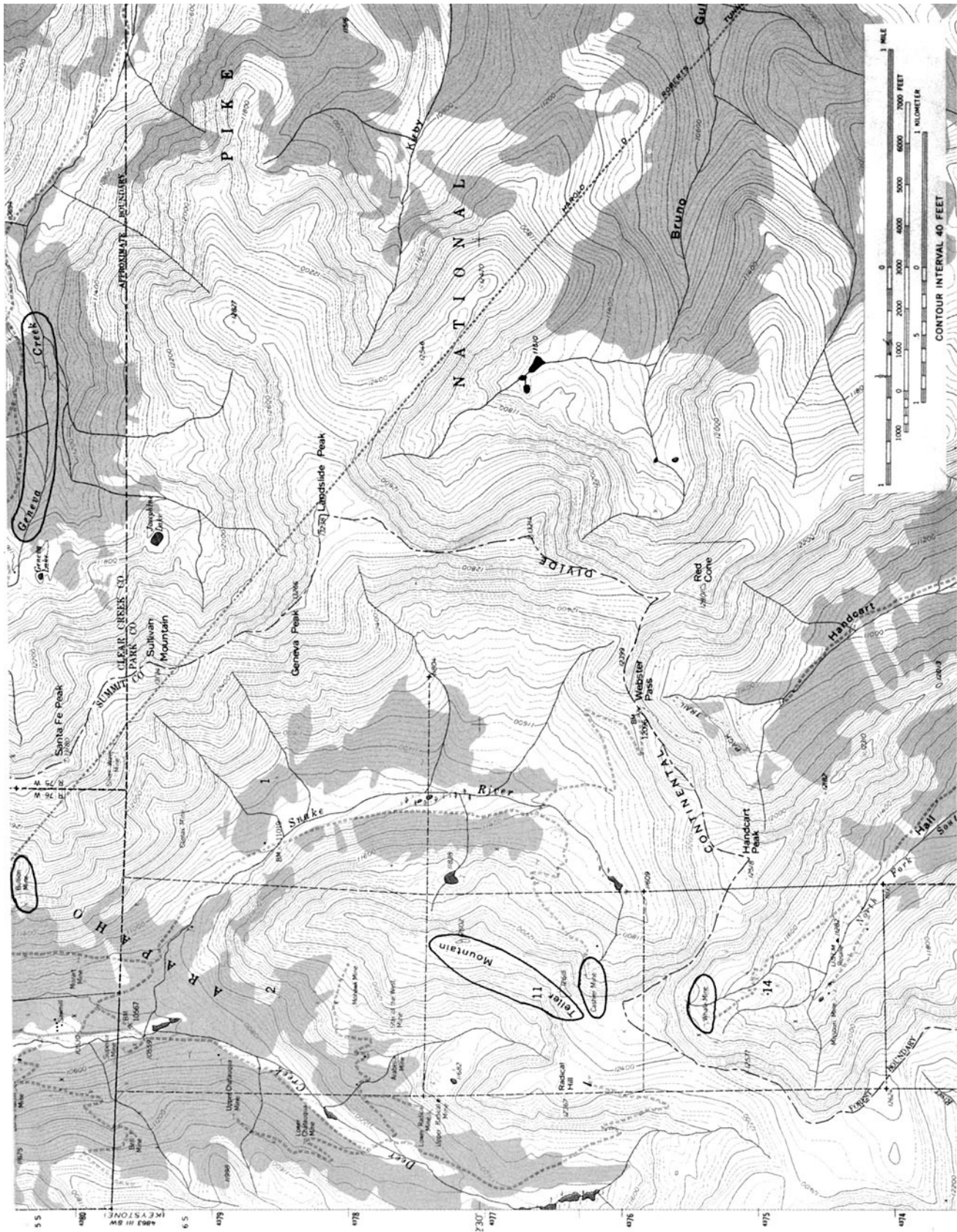


Figure 18. — Part of the Montezuma 7-1/2 minute quadrangle (USGS). Places mentioned in the newspaper accounts are circled. [Figure 17 fits above this one.]



Figure 19. — Part of the Georgetown 7-1/2 minute quadrangle (USGS). Places mentioned in the newspaper accounts are circled.

Newspaper Accounts Concerning Avalanches in the Central and Northern Colorado Mountains 1862-1945

Place names mentioned in these newspaper accounts are listed alphabetically in Table 6 (page 255). Many are also marked on the topographic map sections that appear as Figures 45 to 49 on pages 203 through 207.

103. *Colorado Republican*, Thursday, April 10, 1862

"John Aldrich, about 35 years of age, a native of Rhode Island, about 18 of March on the route from Washington Gulch [4 to 5 miles north of Crested Butte] to Denver with a party of six men {was} covered by a snow slide while passing through Cochetope Pass. The deceased {was} buried 8 feet under the snow...The others escaped after working about an hour and a half...Aldrich was found dead."

[From the Snow Slide Disaster file at the Colorado Historic Society Library, Denver. The original article was not seen.]

104. *Colorado Republican*, Thursday, April 10, 1862

An Immense Snow Slide

"...from Mr. Fairbanks of Washington Gulch we gathered the particulars of a most terrific slide that took place there on the 20th of January. About a mile from the Gulch is a mountain some two miles high and very steep. A large and severe snowstorm had entirely filled a ravine several 100 feet deep on the side of the mountain and running at right angles with the Gulch. On the 20th just after dark the high column of snow in the ravine started down the mountain...carrying along a whole forest of giant pines....After reaching the base of the mountain its wild career continued for over a mile...some dozen {abandoned} cabins...were entirely covered to a depth of about 10 feet...no one was hurt."

[From the Snow Slide Disaster file at the Colorado Historic Society Library, Denver. The original article was not seen.]

105. *Georgetown Courier*, Thursday, February 7, 1878

Buried in a Snow Slide

"C. H. Colwell, one of the owners of the Wheeler Mine, three miles above Montgomery, was engulfed by a snow slide last Sunday about two p.m. He was on his way to the mine, and when within a few hundred feet of his cabin, an immense body of snow came down the mountain carrying him off and completely demolishing the ore house of the mine. Mr. Henry, one of his partners, was in the cabin at the time, and although he rushed out immediately on hearing the crash, could hear or see nothing of Colwell. The pack and one of the snowshoes of the unfortunate man were discovered by Henry, who, after looking in vain for some trace of him, came to Alma with this report. This morning, six men started in search of the body, but the search was fruitless, although the entire day was spent therein. A large party will start in the morning, fully prepared to make every possible effort to recover Colwell's body. It is feared that should the slide prove as deep as it is supposed, that the body will not be found until spring."...

106. *Georgetown Courier*, Thursday, December 25, 1879 (from the Kokomo Times)

"On Thursday morning, N. C. Bassick, while ascending Tucker Mountain [north of Kokomo] towards his cabin, was overtaken by an avalanche which broke {from} the crest of the mountain and hurled him with loose stones down the mountain, and a moment afterwards he lay fatally hurt in the broken pines several hundred feet below. He was twenty-two years of age."

107. *Georgetown Courier*, Thursday, January 15, 1880

"Henry Comstock, a veteran miner and prospector of Middle Park, was buried in a snow slide on Great Mountain, on Wednesday of last week. He was hunting mountain sheep with his brother at the time of the accident, the latter being caught in the edge of the slide and escaping with some bad bruises."

[The location of Great Mountain is unknown to us.]

108. *Leadville Herald Democrat*, Saturday, November 27, 1880

Snow Slide in North Park

"Georgetown, November 26 — News is just in from North Park with the particulars of a frightful accident there on the twenty-second instant. Five men, while ascending the pass between Jack and Illinois creeks, were overtaken with a snow slide, in which Thomas Gray and Charles Eaton were killed, Will Sandels badly bruised, and James Frazier had his left thigh broken in two places. Joe Nelson escaped unhurt. The snow slide carried the party three hundred feet down the mountain.

[This was likely Bowen Pass at the southwest corner of the Never Summer Range.]

"Cheyenne, November 26 — Advice to The Leader from North Park state that a party of five miners, going from Georgetown to North Park, were precipitated in an immense snow slide on the continental divide, on Saturday last. C. Eaton and Thomas Gray were killed; James Frazier had his thigh bone broken in two places. The body of Eaton was found buried in the snow. Gray's body could not be found. The party had been out in a storm five days and were nearly famished when the accident occurred."

109. *Leadville Herald Democrat*, Thursday, January 6, 1881

The Snow's Wrath

Frank Pulliam is Buried Alive in Lackawanna Gulch

"A man by the name of Sam Phillips arrived in this city last evening from Lackawanna Gulch [east of Independence Pass], and narrates the destruction of a cabin by a snow slide on Sunday last, and the death of his associate by the name of Frank Pulliam. It was on Sunday morning about nine o'clock that they were engaged in cooking breakfast. Their cabin is located near the base of the mountain, and the snow above is of several feet depth. All at once they were interrupted by a rumbling noise and the next moment half of the cabin together with Pulliam had disappeared. The contents of the room were completely destroyed.

"A short distance from the cabin was a sawmill and to this Phillips had to make his way. The morning was a blustering one and the traveler was completely blinded by the snow that blew into his face, and going a few yards he would recede to the cabin and take another look. This he did for hours until the trail was extended around the spur of the mountain and the building at the sawmill was visible.

"Mustering up all his courage he pushed forward, the snow reaching his breast in some places. Finally he reached the sawmill and going in related the affair to the workmen. To attempt to make their way to the destroyed cabin was out of the question, and so Pulliam's body was permitted to remain in its snowy tomb until Tuesday when they discovered it beneath the fallen timbers of the cabin....The dead man had evidently been struck by the whirling timbers as his head presented a horrible wound, while one hand was smashed into jelly."

110. *Leadville Herald Democrat*, Sunday, January 16, 1881

Entombing a Miner

The Horrible Death of John Wilson at Chalk Ranch

Buried by the Snow at the Bottom of a Shaft on the Mountain Side

"The vicinity of Chalk Ranch was the scene of a terrible disaster on Friday afternoon, [January 14] in which a miner by the name of John Wilson met his untimely end. It seems that the dead man and his companion had discovered a promising prospect upon the mountainside and ambitious to meet spring with a substantial mine they concluded to continue work upon it throughout the winter....

"On Friday afternoon they were engaged in their accustomed labor. Wilson was at the base of the shaft filling the ore bucket while his companion was upon the surface turning the windlass, which elevated the dirt to the top. Nothing unusual occurred until late in the afternoon. The sun, which had shone with telling effect upon its opponent, the snow, had thawed it considerably, and in spots it had disappeared entirely.

"The men were engaged in their occupation, when suddenly the man at the windlass looked up and was appalled at the moving ship of snow and ice that had just become detached from the mountain side, and was moving slowly but surely, taking the massive boulders and stumps with it. Suddenly something yielded, and, like a weak vessel amid the tempestuous billows, it came plunging and maddened towards its prey.

"The man stood transfixed to the spot, but there was not a moment to allow the hungry demon that was fast coming towards him, and seizing the windlass, he held with a death grip until the avalanche was over, when he laid there almost insensible. Where was his partner, was the first thought that dawned upon him, and the word came impulsively through the morning winds, 'dead!'

"He looked at the shaft and found it full of snow, which was the grave of his companion. He went to work with his shovel, that was unrelenting and his strikes were vigorous. Getting down about ten feet he realized his inability to contend with the snow that was fast sinking, and jumping to the surface he came to Leadville for assistance.

"Here three men joined him and together they went to the work of resurrection. They reached the mine yesterday morning and were soon unearthing their comrade. Until night they worked, and reaching the bottom of the shaft, here they found the remains of John Wilson cold in death, while he was crushed into a misshapen mass. He was elevated to the surface and taken to the ranch a short distance away. He will be brought to Leadville today. He was a native of Virginia, Illinois."

[Chalk Ranch was later called Halfway, then Tabor City. Crofutt (1881, p. 148) says Tabor City was on Chalk Creek and on the Denver and Rio Grand Railroad 13 miles north of Leadville, 7 miles south of Kokomo, and at the western base of Buckskin Mountain.]

[On modern maps this appears to be at the base of the unnamed 12,080-foot summit at the junction of sections 14, 15, and 22, T8S, R79W. Mount Buckskin is three miles southeast of this point.]

110A. *Leadville Herald Democrat*, Tuesday, January 18, 1881 (p. 4)

Buried Alive

Contending with Death in a Snowy Sepulchre

John Wilson is Imprisoned Without a Breath of Air for Forty-Nine Hours

The Horrible Experience of His Rescuers While on the Snowy Trail

"The Herald readers will remember the details of an appalling disaster that were given in the Sunday morning issue, in which it was stated that John Wilson had mourned out the death rattle under a snowy sepulchre at the bottom of the 'Alice Logan' Mine, near Chalk Ranch. Later developments contradict the report of his death, but leave him upon a subtle and weak thread of existence that may possibly reap in twain even by the gentlest breeze of his surroundings.

"There is an event in Wilson's career that will render it immortal, even from its horror. No one whose destiny has not engulfed him in a similar position and calamity can realize the terror of being imprisoned in a mine with the sounding winds above moaning out a dirge over the grave of one alive, but to all minds and the world dead.

"It will be remembered that John Wilson was given up by common conclusion of his friends as having sustained death in the recent snow slide near Chalk Ranch. On Friday night last, about eleven o'clock, W. C. Chapman, who was Wilson's associate at the mine, arrived in this city, and going to the Citizens' Mining Investment Company's room in the Merchants' Building notified the friends of Wilson of the occurrence of the morning. In a moment they started to their feet, and inspired by the recollection of their old friend they determined to confront the opposition of night and howling weather and go to the rescue.

"Accordingly Messrs. J. W. Virgin, a trustee of the Citizens' Mining Investment Company, Charles Crown, Charles Downing and Mr. Caldwell mounted their horses and were soon pushing their way through the storm, along the Arkansas valley to where their friend was entombed. They moved on with as good progress as the snow would admit, and finally abandoned

the wagon road for the railroad track, where they proceeded for some distance, until they were interrupted by a long trestle work, a short distance this side of Chalk Ranch.

"Here they were compelled to retire to the wagon road, which was some distance away, and leaving the track started through the snow that was above their waists. The wind was blowing a perfect gale, while the snow was falling thick and fast. They could see a light from the ranch and pushed on. Finally they arrived at a portion of the road where the snow had drifted so as to render it almost impossible to continue any further. Tired out and weary, they started to tramp down the snow, so as to make a path for their horses. Some time was spent in this, and they at last arrived at Chalk Ranch, where they went into the house and thawed out their benumbed limbs.

"Stimulated, they resumed their march to what they supposed was Wilson's grave, and encountered the most discouraging difficulties. The snow had formed a perfect stronghold against human invasion, and seemed to leap higher and higher, at each stop, upon the bodies of the men. They were instructed to take it slow and easy, and by this method much more would be accomplished. The horses would sink down now, almost to their backs and plunging this way and that were soon in foam. The men moved on, thoroughly fatigued and almost frozen, until they reached a little cabin, that had formerly been employed as a saloon and road lunch house.

"By this time the men began to grow sleepy, and the evidences of freezing began to assert themselves. Several times previous Virgin and Downing had laid down, like resignation, beside the grave and closed their eyes in perfect and pleasant submission to the cold fingers that were rapidly closing themselves around their victim. The two other companions witnessed the awful and ominous evidence of death and going to the men, began to kick and beat them, until opening their eyes, they struggled to their feet and walked on apparently unconscious, or at least indifferent to their course.

"Reaching the cabin above referred to, Virgin and Downing again surrendered and fell prostrate upon the snow, utterly refusing to advance another step. A short distance up the declivity of the mountain was the cabin to which Crews and Caldwell {managed} to reach, and building a fire returned for Virgin and Downing. First, however, they built a fire beneath a massive boulder that was near the road, and supporting the sleeping men to it the men started toward the cabin. They moved on with much difficulty and made very little progress through the obstinate element that seemed to exert itself in delaying the men.

"At last, after a terrible struggle, the men attained a spot within thirty feet of the cabin. Here Crews, who had proceeded with such fortitude, yielded and sinking down upon the snow was in a moment unconscious

of the fact that death had conquered and soon he would be a subject of another sphere. Caldwell was now the only one left, and upon him hung the destiny of the three men who had lain down to die. He pushed on through the snow, at times almost succumbing to the drooping lethargy, and again summoning his strength and {?}.

"After some time he reached the cabin and pushing the door open was soon bent over the stove starting the fire. Upon a shelf near by was a quantity of canned goods, and seizing a can of pork and beans he rushed from the cabin and ran to Virgin and Downing. After kicking, turning and beating the men were aroused and started like a hungry wolf upon the {?} for the pork and beans.

"Indeed it was a 'go as you please' between the two men as to who should devour the meat. After this strength began to return slowly and starting again they reached the cabin, where they fell thoroughly exhausted upon the blankets. In the meantime Crews had been taken in and was sleeping soundly. No one knew anything until the following Sunday morning when the men awoke and remembered their errand.

"Eating a hearty breakfast they started for the mine and proceeded to dig for Wilson. They worked vigorously until about 10 o'clock, when they saw Wilson in an upright position, the pick above his head and held by his left hand. Everybody was surprised to find the man alive, and the palpitations of his heart were scarcely perceptible. His face was terribly discolored, and his chin fell forward on his breast. His extremities were as cold as ice, and perfectly void of any sense, whatever. The abode of the remaining spark of life was across the breast, and even his {face}. The arms were rigid and stiff, as were the limbs and there was little hope. Wilson's eyes were fixed and there was every evidence that death had taken possession of the man.

"They elevated him to the surface, and wrapping the semi-corpse in a blanket started for the cabin. His teeth, which were set in the cold embrace of death, were pried open and some whiskey administered to him. Finally they arrived at the cabin, and cutting his clothes from his stiffened limbs he was placed in bed and a physician sent for from Robinson's camp. He was but a short distance from eternity when the doctor arrived, who went to work immediately to his restoration.

"After several hours of work and careful nursing Wilson recovered his consciousness and looking around was apparently ignorant of the surroundings. When informed of what had happened he said that he remembered being down in the mine, but thought when the snow had fallen in upon him that he had been struck violently with some implement. He said that his consciousness held for about eight hours and knew nothing after that.

"Wilson had survived in his tomb for about forty-eight hours and this established beyond doubt that the days of miracles are not at an end. He is now lying in his cabin, near Chalk Ranch, and it will require several days to recover sufficient strength to leave his bed. Mr. Virgin returned from the place yesterday, and in reply to a question from the reporter as to the {chances} of recovery said that while there was life there was hope."

111. *Leadville Herald Democrat*, Thursday, January 20, 1881

Killed by a Snow Slide

Cassius M. Price is Instantly Taken Off Near Red Cliff

The March to the Rescue of a Large Number of People of the Town

" 'This is the season of snow slides,' said a gentleman who has just arrived from the mountains to a reporter yesterday, and the numerous occurrences would lead one to that conclusion. Hardly is the pencil suspended from the narration of one snow slide until it is envied [sic] by that of another with details just as sorrowful. On Tuesday last about noon Cassius M. Price of Red Cliff, well known in this city, as he was a frequent visitor, was engulfed in a snow slide about three miles from his home, while he was in search of game. The following is a statement of Michael Nemis, who was in company with the deceased at the time of the calamity, and submit it to the readers:

'We, the deceased and myself, left Red Cliff about ten o'clock a.m. on the 18th day of January to climb Horn Silver Mountain to hunt for mountain sheep. We walked up the Eagle and White River toll road about four miles, and then ascended the mountain (Horn Silver) about half a mile. At this point I was fifty feet ahead of the deceased and walking on the north side of a little creek and he was walking up the bed of the creek.

'My attention was attracted by a peculiar sound, and looking up the mountain I saw about two hundred feet ahead of me the snow breaking up, and a body of it about three feet high and fifteen feet wide, start to slide down the gulch or creek, gaining force, volume and speed as it came toward us. The deceased, who had seen the break-up of the snow at the same time as myself, called my attention to it and I told him

to look out, but the deceased, instead of stepping out of the way and avoiding the danger, only laughed and said something to the effect that "that was nothing" or he "wasn't afraid". The slide struck him, knocking him over backwards and I did not see him again alive.

'After the slide struck him and he disappeared, I slid down the side of the mountain to the gulch, and not seeing him I called him by name, but received no answer. At this time, the dog, which had accompanied us, climbed out of the snow, and I realized that the deceased had been buried in the slide. I immediately started for Red Cliff for help, which I got, about seventy-five of the citizens of the said town accompanying me to the place of the accident.

'After digging in the snow about three-quarters of an hour, the deceased was found lying on his back and covered with about two feet of snow. His snowshoes, rifle and gloves were found at different places, buried in the snow, but all were found higher up the gulch than the body of the deceased. After the body was found every effort was made by myself and some of the others to resuscitate the deceased by friction and otherwise, but after working in this endeavor for about three-quarters of an hour without any signs of life from the body, the effort was given up as fruitless, and the body of the deceased, Cassius M. Price, was conveyed to the town of Red Cliff, by his friends.

Signed, M. Nemis'

Subscribed and sworn to before me this eighteenth day of January, A.D., 1881.

E. R. Hawley, Justice of the Peace.

'I hereby certify that the above statement is in my opinion the truth and nothing but the truth, and that being one of the party of citizens who went to the rescue of the deceased Cassius M. Price, I can vouch for the truth of the statement concerning the events following the report of the above named Michael Nemis, that the said Cassius M. Price was buried in a snow slide.'

E. R. Hawley, Justice of the Peace.

"A gentleman who arrived from Red Cliff yesterday afternoon, said that the announcement of Price's unfortunate ending convulsed the entire city in excitement, and at the time the word came the court was in session and the jurors rushed out of the court room, before the judge had time to declare it adjourned. Four men upon horses proceeded in advance of the party and broke the road so as to permit the rescuers to reach the place where poor Price was entombed in the snow. When they found his body it was still warm, and there were evidences of life remaining. But all efforts were

unavailable, and placing the inanimate form in a sleigh they returned in a funeral train to the city. Intelligence of his sad and lamentable ending has been telegraphed to Topeka, Kansas, where his relatives reside and in all probability the body will be sent there for interment.

112. *Grand Lake Prospector*, December 1882

"...Shortly after breakfast the morning of 12/14/1882, the men having gone to work in the tunnel [Hidden Treasure Mine]. He, [J.C. Harmon] decided to break a new trail for them from the bunkhouse to the mine...even this early in the winter, snow was piled deep in the mountains...with an angry roar hundreds of tons of snow and debris engulfed him" [112A, 112B, and 118].

112A. *Georgetown Courier*, Thursday, December 21, 1882

A Fatal Snow Slide

"On Thursday of last week, Mr. Jules C. Harmon, superintendent of the Colorado and Kentucky Mining and Smelting Co.'s property, in the Rabbit Ears Mountains, was killed by a snow slide. The Company has been sinking the discovery shaft of the Hidden Treasure Lode during the winter, and Mr. Harmon was superintending the work. He had just announced to the men in the shaft that it was time to close, and started down the mountain, which in that place is very steep, and in the form of a horse-shoe. Before the miners had got out of the shaft, they heard the slide, and on reaching the surface nothing was seen of Harmon. His body had not been recovered on Saturday."

[The report of this accident in the *Rocky Mountain News* for December 19, 1882 (p. 3, c. 4) said Harmon was a world renowned roller skater [118].]

112B. *Grand Lake Prospector*, Saturday, December 23, 1882

"The immense amount of snow which covers him [Jules C. Harmon], reinforced by continual storms, make it utterly impossible for poor humanity to do ought but wait until the bright sun of spring shall dissolve the beautiful but pitiless shroud which now envelops him."

[The body was recovered the 10th of the following June and was buried there in Bowen Gulch.]

115. *Gunnison Daily Review Press*, Monday, January 29, 1883 (p. 3, c. 1)

ACCIDENT AT IRWIN

Michael Lawler Caught in a Snow Slide and Killed.

"Irwin, Colo., Jan. 28, 1882

"Ed. Review-Press: The second death by snow slide occurred yesterday. [The first death was J. W. Goodspeed on the 26th at Cinnamon Mountain [116 and 118].] About five o'clock in the afternoon, Michael Lawler and Thomas Owens, owners of the Elk Lode, started for town, intending to return on Monday. The former was shod with Web shoes and the latter with the Norwegian. While passing around the dump of the Venango Mine they were caught and carried down by a great slide that extended in width from the Belmont Tunnel to the new Venango Tunnel, a distance of about one thousand feet.

"When the slide started Owens was about one hundred feet in advance of Lawler. He says that when he came to a stop he found his snow shoe pole still in his hands, and succeeded in making with it a hole through which he obtained air. Having extricated himself with great difficulty, he started back and began a search for Lawler, but could find no sign of him. He at once started for town and soon a large number of men armed with shovels started for the slide, keeping up a search during the night.

"Today, about one o'clock, the body was found near the brink of Elk Creek. It was covered by about four feet of snow, firmly packed. There was no sign of a struggle, and death from suffocation must have taken place before Owens got out."...

116. *Gunnison Daily Review Press*, Tuesday, January 30, 1883

SERIOUS SNOW SLIDE!

Another Accident from A Terrible Snow Slide near Irwin.

Eight Miners Buried Beneath a Mantle of Cold White Snow.

One Killed Outright and Two Others Probably Dying.

"Still the sad news crowds itself upon us. Yesterday our citizens attended the funeral of one of their number who was killed by a snow slide. Late last evening the news reached town of the burial of another who had made this town his home formerly. His body still lies beneath a hundred feet of snow. This morning word again reaches us of another in Ruby camp, a mile north of Irwin. Eight men are buried beneath an avalanche of snow, which came down Mount Owens [Owen]. Houses were swept away, mining property destroyed two men badly injured and one killed. This is the third disaster within the last three days in this county.

"Early this morning news reached Gunnison over the telephone from Irwin that a fearful snow slide had swept down Ruby mountain, at a {point} one and a half miles north of the town, and that the Durango, Ruby Chief, Oaks [Oakes], Old Schick [Shiek] and Howard Extension shaft houses were all swept away, and a number of men buried beneath a mountain of snow (Fig. 20).



Figure 20. — The Ruby Chief Mine Tunnel as it appeared in August 1981.

"Men were busy digging for the lost miners. Later the word came that all but the two men who were working on the day shift of the Howard Extension were found, of whom William Coleman was badly injured internally, the remainder were unharmed, having been in the mines at the time of the slide. At half-past 10 o'clock this morning the other men were dug out. Tom Brown was injured seriously, being nine hours in the snow, and it is doubtful whether he will recover. The other man, Frank Ranander, was dead when found.

"The slide took place about 1 o'clock this morning. It started near the summit of Mt. Owens [Owen], a very high mountain. In order to reach the shaft houses the avalanche had to cross a deep gulch, rise over a hill of considerable height and descend the second slope where Oakes Mines, owned by W. E. Grover, who had been stopping in Gunnison for some time, are located. His loss will amount to about \$500. From here the avalanche descended to the bottom of the gulch, then over a second rise, where it struck the Ruby Chief on its third descent. To those who have visited this locality, it seems impossible that a snow slide from Mt. Owens [Owen] should extend to the Ruby Chief Mines. [Field examination of this site indicates the avalanche did not come from Mt. Owens {Owen}. It must have come down the conspicuous path on Ruby Peak (Fig. 27).]

"The seven men who were dug out alive are confident that there were but eight men buried. However, a close inquiry is being made to ascertain whether there were any others in the locality of the slide."...

"The Review-Press yesterday recorded the death, by a snow slide at Irwin, of Michael Lawler, an old and respected citizen of this county, and to-day we are called upon to record another similar accident on Cinnamon Mountain, in which the victim is Mr. J. W. Goodspeed, superintendent of the Paradise Gulch Mining Company, a resident of Gothic but formerly living in this city with his family on Eleventh street. Mr. Goodspeed...left Gothic alone on Thursday, the 25th, on snowshoes, to visit the mines in Paradise Gulch.

"That night he stopped at Richardson's cabin, proceeding on his journey the next day expecting to reach his mine where his men were employed, the same evening. When within sight of the mine he was overtaken by a tremendous snow slide and instantly ran into the maelstrom, being covered by an avalanche at least one hundred feet in height from which death must have been almost instantaneous.

"As his presence was hourly expected by the miners employed, the foreman of the mine looked in the direction from whence he expected Mr. Goodspeed, and noticing that there had been a snow slide he at once instituted a search. Repairing to the scene, fresh snowshoe tracks were visible which at once told the sad story — a human being was buried beneath at least one hundred feet of snow.

"When it was ascertained beyond the possibility of a doubt that the body buried was that of Mr. Goodspeed, and that it was in a mass of thousands of tons of snow, all attempts to hunt for the remains were deemed inadvisable and search was therefore postponed until the snow melts away in the spring [115 and 118]."...

117. *Gunnison Daily Review Press*, Wednesday, January 31, 1883 (p. 1, c. 3)

AWFUL AVALANCHE!

A Fearful, Death-Dealing Snow Slide Near Crested Butte
Hurls Six Men into Eternity and Buries Twenty-Four Others
Beneath a Mountain of Snow, Injuring Many Seriously.

Full Particulars of the Catastrophe

List of the Killed

Death Dealing Avalanche

"About four o'clock this morning an avalanche of snow swept down the mountain side at Crested Butte and carried with it one of the boarding houses at the anthracite coal mines [Smith-Hill Mine] (Figs. 21 and 23), in which there were thirty-six men... There were thirty (sic) men in the boarding house at the time; six were killed and fifteen wounded as reported at noon. A large force of men were searching for the other nine men.

"Those who were killed are as follows: Philip Carmin, Logan Inman, Louis Richards, William Moore, Chas. Betts and J. J. Raymond.

Those who were so seriously injured that their recovery is extremely doubtful, are as follows:

Messrs. Mahoney, Anderson, Blance, Lovelle, and J. J. McClusky. There are many others less seriously injured.

"The anthracite coal mines are situated some three [or four] miles above Crested Butte directly opposite Oh-Be-Joyful Creek and 1600 feet above Slate River....The slide was not a very large one, but its destruction was frightful. With the exception of the boarding house, but little damage was done to the property. The tramway and plant were not damaged."...

Later

"The latest news from the scene of the fearful disaster is that there were six men killed, four so badly injured that they are not expected to live, eleven injured less seriously, and all the others secured unharmed....



Figure 21. — Smith-Hill anthracite coal mine on the southwest edge of Anthracite Mesa in the Slate River drainage about 4 miles northwest of Crested Butte, June 1981. Six men were killed and 21 injured by an avalanche at this site on January 31, 1883.

117A. *Rocky Mountain News*, Thursday, February 2, 1883

Special to the *News*.

THE FATAL SLIDE

"Gunnison, Feb. 1 — Further news from the scene of yesterday's fatal snow slide do not contain any startling features. It has been definitely ascertained that only six persons perished, although another is reported missing.

"The Following are the Names of Those Killed with Their Residences:

LOUIS RICHARDS, Silver Cliff;

J. J. RAYMOND, Iowa;

CHARLES BETTS, aged 24, Silver Cliff

PHILLIP KERMIN [Carmin], Kenosha, Wis.

RAYMOND AND LOGAN INHAN

"The Seriously Wounded are:

Bruce Hill, dislocation of spine.

James Delbridge, collar bone broken.

J. J. McCloskey, spinal concussion.

James Mahoney, severely injured in the spine and back.

Harry Carter, bruised on the shoulders and hips.

Tony Lavelle, hurt on shoulder.

W. H. Manning, shoulders, hips and knees.

Peter Swenscon, back and breast.

"Thirteen others were slightly wounded."...

[These two accounts agree on five of the fatalities. The sixth is given as William Moore in [117] but as Raymond Inman in [117A]. We did not resolve this difference.]

[Lathrop 1954, (p.230-232). A short wooden trestle across the Slate River along the 4-mile railroad spur between Crested Butte and the Smith-Hill Coal Mine was in the path of a frequent avalanche and was found up the opposite hill every spring. This spur line was usually not operated during the winter.]

118. *Georgetown Courier*, Thursday, February 8, 1883

Avalanches of Snow

"Snow slides have been more numerous during the past two weeks, than at any time in the known history of the state.

"On the 26th, J. W. Goodspeed, superintendent of the Paradise Gulch Mining Company near Gunnison, was caught in a slide on Cinnamon Mountain [Fig. 47] and buried 100 feet under the snow. His body cannot be found before spring [116].

"On the 27th, Michael Lawler and Tom Ownes [Owens], two miners of Irwin, were caught in a slide near the Durango Mine and carried down into the gulch. Ownes [Owens] escaped, but Lawler was killed and his body was not found until noon the next day [115].

"The slide at Ruby Basin started at the top of Ruby Peak at midnight and swept down the mountainside, carrying everything before it. The buildings of the Durango, Ruby Chief, Howard Extension, and Oakes mines were crushed into kindling wood. The machinery on the Ruby Chief was carried away and eight men were buried in the snow. Five were taken out all right except slight bruises; two, Coleman and Tom Brown, were seriously injured and may die, and one miner, Frank Rhinelander [Ranander], was taken out dead. The force of the slide was perfectly indescribable. Houses, trees, and rocks were carried down, and the whole mountainside was left perfectly bare. The loss to buildings and machinery will be fully \$10,000.00 [116]."

[Many avalanches crossed the 12-mile branch of the railroad from Crested Butte over Kebler Pass to the towns of Irwin and Ruby. They were especially troublesome where the track was cut into a steep hillside west of Kebler Pass. Here they often left 30-40 feet of snow on the uphill side of the track (Lathrop, 1954).]

"The passenger train which left Gunnison for Crested Butte, when within about six miles of Crested Butte, divided, and the engine was struck by a snow slide and ditched under about twenty feet of snow.

"On Wednesday of last week, a snow slide on Sheep Mountain, near Robinson, swept Jas Ryan with his team and a heavy load of ore to the gulch below.

"On Tuesday, a snow slide near Bonanza carried away a tent in which were three men and an engine house and engine. The men miraculously escaped with their lives, but were badly injured.

"Last Saturday a snow slide covering more than an acre of ground on Red Peak, near Frisco, buried a blacksmith named Fred Plath under 30 or forty feet of snow. His comrades made a vain attempt to recover the body....

"The news of another destructive avalanche in Middle Park on Monday of last week has just been received. It occurred on Rabbit Ear [Ears] Mountain, and not far from the Wolverine where Jules Harmon was swallowed up a few weeks since [114]. [On modern maps the Wolverine Mine is about one mile south of Bowen Mountain in the Never Summer Range.]

"Four men, Jack Williams, E. R. Doty, Thos Booth, and Mike Flynn, who were employed by Stokes and Royer on the Saponis Mine were just sitting down to dinner at 4 o'clock in the afternoon when the destroyer came which swept them with the cabin down the mountain side. At the time Stokes and Royer were approaching a short distance from their cabin and seeing the coming danger, ran for their lives to the protection of some large trees standing near. They barely escaped. They then commenced a search for the men whom they had seen swept away. After eighteen hours search, Flynn was found under about ten feet of snow, but still alive although badly frozen and otherwise injured. The other three men were found last Tuesday, dead and badly bruised."

119. *Gunnison Daily Review Press*, Monday, February 5, 1883 (p. 2, c. 3)

Snow Slide at Tomichi City

"We learn from reliable authority that a snow slide occurred at Tomichi City on Friday morning, the 2nd, and swept away nine cabins belonging to the miners. All the cabins at the time were unoccupied excepting one in which was living a Mr. De Groot who heard the slide coming and in a second had the presence of mind to lie down at the lower side of a cutting and the cabin and the slide were swept over him and he escaped with slight injury. The cabins were worth about \$150 each (Fig. 30; page 152).

"At about the same time there was a slide at White Pine a couple of miles below, and John Morris, the party who heard it coming, saved his life by running into the tunnel."

120. *Leadville Herald Democrat*, Wednesday, November 28, 1883

Under the Snow

Fatal Snow Slide

Special to the *Herald*.

"Aspen, Colorado, November 27 — Charlie Davis and a man named Kelly, while returning last evening from work on the Raj...Mine, near the Montezuma, were caught in a snow slide and both buried, but Kelly managed to extricate himself and, being unable to find his companion, started for assistance. When a searching party found Davis life was extinct. He was covered with three feet of snow, but it is supposed that he struck a rock and broke his neck."...

121. *The Daily Rocky Mountain News*, Denver. Friday, February 15, 1884

SMOTHERED BY SNOW

A Pitkin Miner Swept Into Eternity
by an Awful Avalanche.

The Narrow Escape Made by His Two Friends
and Companions.

Graphic Story Related by One of the Surviving Parties.

"Mr. Charles Miller, who arrived from Pitkin Tuesday night, gives the details to a Leadville reporter of a snow slide disaster in which his partner, John Riser, was killed and he himself barely escaped with his life. The affair was a singular one, in the annals of Colorado slides there not being an instance where the victim or victims suffered in same manner or had an experience similar to that of Riser. His tortures were not unlike those of the 'the man overboard' who has battled vainly with the waves in view of those who would rescue if they could, and finally exhausted, sinks to death in sight of friends and almost within hearing of prayers for his escape.

'It was a terrible experience,' said Mr. Miller, 'one that I shall not soon forget. Mr. Riser and myself were on our way from Aspen to Pitkin, on the Queen's Gulch trail. It was last Friday evening [February 8]. As we were jogging along down the gulch toward Pitkin, and congratulating each other on the speedy conclusion of our tiresome journey, we heard a sort of

DEEP, SULLEN, ROAR,

something like that of a rough sea breaking over a shoal. I was several yards in the lead, opening the trail, which had been filled and almost obliterated by nearly four feet of snow. The mountain side at that point was steep and covered with fallen timber. Both of us halted in our tracks, mystified for the moment by the noise. As the disturbance grew louder and I could faintly hear the cracking of trees and branches, I realized our danger and shouted, 'Look out for the slide, it will be on us in a minute!' I floundered forward in the snow, but instead of following me Riser took the back track. In less time than consumed in the telling

BLINDED and SMOTHERED,

I felt myself being dragged down, down as if by the heels, like one being taken away from land by an ocean undertow. This sensation was brief, and I found I was again stationary. Struggling to my feet in an instant, the strangest sight one ever beheld was exposed to view. The roar was dying away into a gentle echo of what it had been. I stood on the brink of a bank of snow at least ten feet high. For nearly a hundred feet in width and as far as the eye could reach up the mountain side, the ground was clear of snow and trees. The space looked like a hewn pathway. Below me I could see the mass of snow, trees and rocks tossing over and over like the high waves in a sea storm, rolling on towards the bottom of the gulch a thousand feet beyond. On the crest poor Jack would now appear, his head and shoulders about the destructive mass,

HIS ARMS WILDLY SWINGING

and beating the air—and then he would become lost under a huge billow of the avalanche. You can imagine the feeling one who was powerless to act, viewing such a spectacle. Soon it was all over, a graveyard silence fell upon the scene, and the work of devastation was done.

"Behind us," continued Mr. Miller, 'was Mr. S. B. Wilson, of the 'Yopsie' mine. He had followed down our trail from the cabin to look at an avalanche which had occurred a few days previously. After the accident had ended I happened to look across the slide, and there he stood on the opposite snow bank, having made his escape quite as narrowly as I did. He heard the warning sound and retraced his steps, the edge of the slide passing within a foot or two of him. Together we picked our way over the timber in the track of the slide, down to the bottom of the gulch. The task of

FINDING RISER'S BODY

seemed at first a hopeless one, the trees, rocks and rubbish having been piled up on top of one another by the wild besom to the height of perhaps a hundred feet. Wilson went to his cabin for shovels, while I remained and scouted around. When he returned, we concluded that inasmuch as Riser had remained on the surface of the slide his body could not be very deep. Acting on this presumption, we dug around from place to place, and an hour later, after having dug a "trench about twenty feet in length, we came upon the remains at a depth of six feet. There were only a few bruises on his body, he having evidently been smothered to death."

"Riser was about 30 years of age and a native of Pennsylvania, his home being at New Castle."

[The information in this article is too vague to permit even a guess as to the location of the avalanche. It is 40 airline miles from Aspen to Pitkin and much of the terrain is avalanche prone. Miller says he and Riser were going from Aspen to Pitkin on the Queen's Gulch Trail. Toward the end of the article he says they were "jogging down the gulch toward Pitkin and congratulating each other on the speedy conclusion of our tiresome journey" when the avalanche hit. This suggests the avalanche occurred near Pitkin, not in Queen's Gulch which is only 3 ½ to 4 miles south of Aspen. It is also evident that if they had been traveling in Queen's Gulch when the avalanche hit them, they would have been going up the gulch not down. The key to locating the avalanche site may be the Yopsie Mine.]

[Wentworth 1950, P238 and 1976, P 121 states: "Thursday February 16, 1884. Two Aspen men, John M. Riser and James Mason, were killed by a snow slide in Queen's Gulch during the past week". Since there was no mention of Mason in this article, it is possible he was killed by the snowslide referred to by Charles Miller as having occurred a few days prior to the one that killed Riser. We found no other reference to Mason's death.]

122. *Colorado and Utah Ghost Towns* (Florin 1971, p. 72)

"...March 10, 1884 an avalanche hit the workings at the Magna Charta Tunnel [at Tomichi] carrying away most of the buildings but not causing any loss of life.

"Tom Farrell and Terry Hughes were in the blacksmith's shop at 8 o'clock when an avalanche from Granite Mountain hit the building. Hughes was thrown down the mountain but not injured. Farrell was rescued slightly injured from under part of the roof.

"A second avalanche hit the Magna Charta later the same day and completely demolished the remaining buildings. [158]. [These avalanches ran on the same day as the disastrous slide at Woodstock 4.5 miles to the north [126].]"

[Wallace, 1965, p. 222-223 quoting the *White Pine Cone Newspaper* for March 10, 1884, says the first avalanche started near the Kitty Quinn Tunnel, and the second, a larger slide, started still higher on Granite Mountain. Both slides ran over the same ground.]

123. *Aspen on the Roaring Fork* (Wentworth 1950, p. 238-239)
Wednesday, March 15, 1884

The Conundrum Gulch Disaster

"Five men were killed at Carey's [Cary's] Camp in Conundrum Gulch by a snow slide, which was supposed to have taken place on the same day and hour as the one on Aspen Mountain. The bodies were brought to Aspen on sleds. The men working in that camp last summer numbered over a hundred, with a post office and election precinct. The number had become reduced to five. Aspen has lost twelve good men by snow slides this past winter.

[Earlier in the book Wentworth (1950, p. 155) gives the date of the Carey's Camp avalanche as March 10 and lists the five victims as J. M. Thorne, J. P. Steeley, S. E. Steeley, J. F. Take, and J. E. Morris.]

"Thorne's dog, Bruiser, was rescued alive from under a bunk in the snow-filled cabin 33 days after the accident. The rescue party missed him when they recovered the bodies of the men. A later party in search of some of the victims' personal effects found the dog and nursed him back to good health."

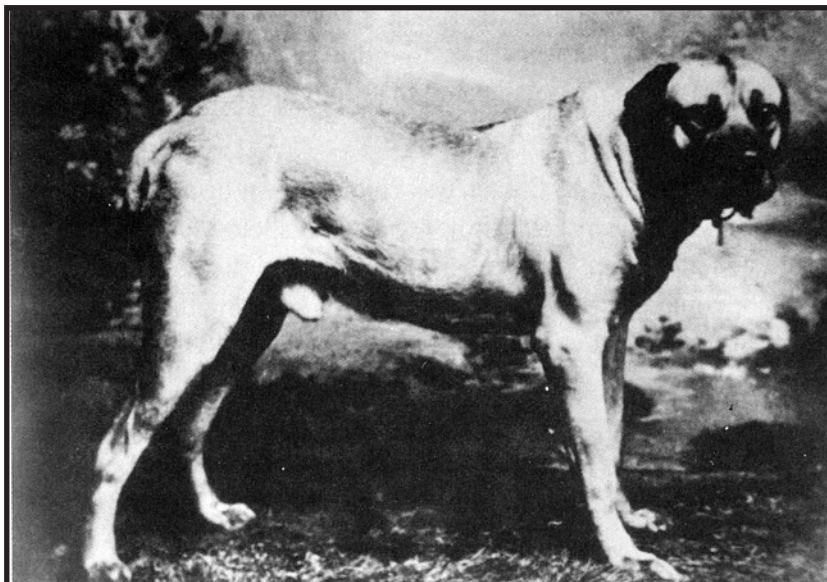


Figure 22. — Bruiser the dog that survived the snow slide that killed five men at Carey's Camp in Conundrum Gulch on March 10, 1884. (Aspen Historic Society photo; Wentworth 1976, P. 76).

125. *Leadville Herald Democrat*, Friday, March 14, 1884

The Deadly Snow

It Rushes in a Terrible Avalanche
Down the Side of Aspen Mountain.

Fear Unfortunate Miners are Swept
Away with the Vallejo Shaft House.

The Beautiful Little City of Aspen
Left in Mourning and Sorrow.

"Aspen, over the range, has met with a severe affliction. For over three years that beautiful town has been one of the most quiet and orderly camps in the state. Its reputation for having a peaceful and orderly population has hardly been equaled in Colorado, and it is not the hand of the assassin or the bullet of the murderer that has broken in upon Aspen's peace-loving ways, but one of nature's elements, has brought death into its midst and sorrow and weeping into many a household.

"For nearly three days preceding last Tuesday [March 11], the wind and the snow seemed to be waging war with each other, and it was frequently remarked by men who have lived in Aspen since 1879, that the Roaring Fork valley never saw such a storm in all that time. The snow fell continuously, and there can be no doubt but that from three to four feet fell during the time, and upon Aspen Mountain it is estimated that the snow is not less than ten feet on a level.

"On last Tuesday evening as Mr. Church was coming down from the Durant Mine, he had to pass near the shaft house of the Vallejo Mine. When he got there he found there had been a snow slide and there was no sign of the house nor could he see where the shaft was. Knowing that there was from fifteen to twenty men at work upon each shift he hurried to town to give the alarm.

"Soon the wildest excitement prevailed, for it was known that besides the men employed there, Mr. Henry Gillespie, Ed Robinson and Major Barber, the new manager of the Spar mining properties had gone there about an hour before to examine the property. In less time than it takes to write it, at least 150 men were on the way, toiling up that steep mountainside, in one of the worst 'blizzards' ever experienced in Colorado. As the foremost of the crowd reached there, Captain George W. Thatcher, lately appointed superintendent of the property, was seen digging out from under the snow.

"His account of it was that after changing shifts at four o'clock, the gentlemen of Spar Mine mentioned above came there to examine the Vallejo property. Leaving Messrs. Gillespie and Robinson in the shaft house with the ore sorters and top men, himself and Major Barber descended into the mine. They had been down there in one of the drifts but a short time when they heard a dull, heavy, thundering noise, and down came into the shaft heavy bodies of snow. Fortunately for the men below, all were in the drifts storing or drifting. So far they were safe, and whilst their own safety still demanded some action, they had fears for the lives of their friends on top.

"After much hard climbing and working they reached the top of the shaft, but their labor was not ended, for there was a body of snow, but how deep they did not know. They began digging, and after going through about twenty feet of solid snow they came out into the air again, and just as the crowd from town had arrived there. Hundreds of shovels were soon at work, when presently a voice was heard and recognized as that of Henry Gillespie, who shouted: 'For God's sake give us some air as quick as possible!' Soon he and Mr. Robinson were brought to the surface, and then Thomas Gannes, who had been reported dead. Daniel McPherson was the next one reached, and, long before he was released, a drink of whisky revived him, until he was dug out. George Cresap was also found alive.

"The work of shoveling still went on, for all of the shift had not been found. The dead were: Mike Higgins, well known in Leadville, from Shellsburg, Wisconsin; Billy O'Brian, from Wilmington, Illinois, one of nature's noblemen and part owner in the Climax group of mines in Pitkin county; George Marshall, well known to every old timer in the Roaring Fork valley, having been in that country four years; and John Megialty [Meginity] one of Aspen's most respected citizens, and who leaves a wife and family."...

[See also Wentworth 1950, p. 238, 278-279 and Wentworth 1976, p. 121.]

126. *Salida Weekly Mail*, Saturday, March 15, 1884

"Pitkin, Colo., March 12 — The Woodstock calamity is the all-absorbing topic of excitement here. The large relief party sent up by the citizens of Pitkin yesterday returned about dark tonight bringing ten dead bodies on roughly made hand sleds (Fig. 25)....The bodies recovered and brought down are: Martin Doyle, aged 23; Andra [Andrew] Doyle, aged 19; Katy, aged 18; Marielles [Marcella] Doyle, aged 14; Maggie Doyle, aged 12; and Christopher Doyle, aged 10. Three bodies yet remain in the slide, being J. S. Brown, the operator; Joe Gerozo [Gerazo], a section man; and Joe Royengo [Royegno], saloon keeper.

"The bodies of Jasper M. Caswell of Tomichi, Jim Tracy, George Alexander, pumper; and Mike Shea, section man are also here. Old Mrs. Doyle, late of Golden, was rescued alive after being in the slide nearly two hours. Miss Celia Dillon, who was engaged to Martin Doyle, was recovering after being buried three and a half-hours. A committee of citizens waited on Superintendent D. K. Smith of the South Park this evening and he will endeavor to secure pay for those who rescued the bodies.

"It was an awful trip from Woodstock down with the bodies. It took the men all day. The corpses were upset in the deep snow many times.

"A terrible snow slide disaster occurred at Woodstock about 6:00 P.M. on March 10, 1884 (Figs. 23, 24, 25 and 26). The avalanche completely destroyed the section house, telegraph office, water tank, and some other buildings. A rescue party from Pitkin returned with the bodies of ten who were killed. They were as follows: Martin Doyle, 23; Andrew [Andra] Doyle, 19; Katy Doyle, 18; Marcella [Marielles] Doyle, 14; Maggie Doyle, 12; Christopher Doyle, 10 years of age; Jasper M. Caswell of Tomichi, James Tracy, George Alexander, and Michael Shea. The bodies of J. S. Brown, the operator; Joseph Gerazo [Gerozo], and the saloonkeeper, Joseph Royengo [Royegno], are still in the slide. Miss Celia Dillon, engaged to Martin Doyle, was rescued alive after being buried in the snow for fifteen hours. Old Mrs. Doyle, who had been buried in the snow for almost twelve hours, was also rescued alive [133]." [See also 122 for two other avalanches on this same day at the Tomichi' 4 ½ miles south of Woodstock.]

[Vandenbusche (1980, p. 193-195) lists the dead as the six Doyle children: Martin, 23; Kate, 19; Andrew [Andra], 18; Marcella [Marielles], 14; Maggie, 12; and Christopher, 10. Also dead were J. S. Brown, Jasper Caswell, Jim Tracy, Mike Shay, and George Alexander. James Mulholland ², the saloonkeeper, was found in June, and Joe Revergue [Royengo; Royegno ²], an Italian section hand, was found

² The newspaper accounts do not mention Mulholland. They give the saloon keeper's name as Joseph Royengo or Joseph Reyegno. The section hand's name was given as Joe Gerozo or Joe Gerazo.

in the water tank in July. The only survivors were Mrs. Doyle, Cecilia Dillon, H. B. Alexander, and Peter Walpole. Fifty people were in the rescue party. The temperature was 40 below zero during the rescue. The spring had generally been unusually cool, but there had been a thaw in early March.]

[Helmers 1971, p. 44-48 and Poor 1976, p. 348-351, give good write-ups of this accident using statements from an eyewitness.]



Figure 23. — Avalanche path at Woodstock, as it appeared in June 1981. The lower limb of the railroad switchback was just above the willows and below the coniferous trees to the left of the avalanche path. The upper limb was just below the horizontal line of low vegetation where the avalanche path widens. The buildings were below the lower limb of the switchback in the foreground willows.



Figure 24. — This aerial view of the western approach to the Alpine Tunnel shows both limbs of the switchback on the South Park Railroad. The tunnel is behind the mountain in the top center of the picture. The site of the railroad town of Woodstock, which was wiped out by an avalanche on March 10, 1884, is marked A. The path down which the avalanche ran extended from about A' to A. (Charles Webb photo; Helmers 1971, P. 146.)



Figure 25. — Rescue party bringing in some of the bodies from the Woodstock Avalanche accident (Lathrop 1954, by permission).

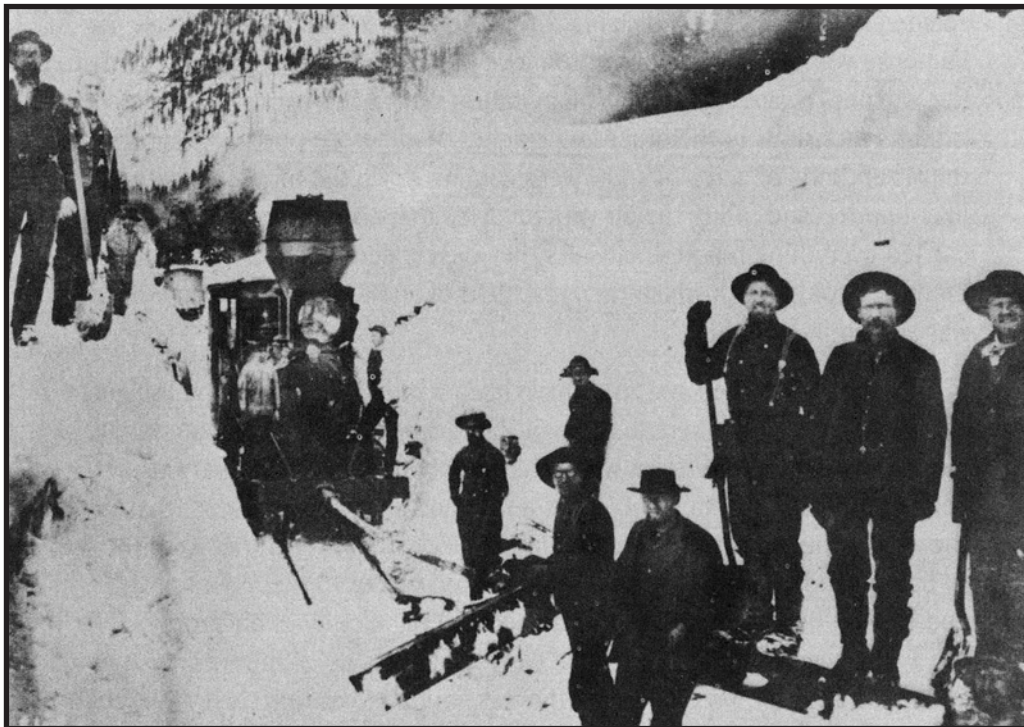


Figure 26. — April 1884 — men clearing avalanche debris from the March 10, 1884 avalanches at Woodstock. (Lathrop 1954, by permission.)

127. *Georgetown Courier*, Thursday, April 24, 1884

"Engineer Arthur Bratt, of the Rio Grande, was killed in Black Canon by a slide upsetting the engine."

[Vandenbusche's (1980, p. 114) account of this accident gives the date as April 17, 1884, and the location as 3 miles into the Black Canyon {of the Gunnison River}. Bratt's first name is given as Charlie. Another engineer, Lewis Lathrop, was injured.]

128. *Georgetown Courier*, Thursday, May 1, 1884

Resistless Power of an Avalanche

"One of the grandest snow slides that ever occurred in Colorado took place a few days ago just back of the Upper Twin Lakes. Judge Harlan, an eyewitness, says it was the most sublime sight he ever witnessed.

"Just back of Twin Lakes are Pomeroy, Gordon and Francis Gulches, on each side of which the mountains rise thousands of feet. The sides of these giants of the Rockies had been covered during the heavy and protracted storms with an enormous depth of snow, until the weight had become such that it could be sustained no longer. The Judge says that, as it happened, he was standing where he could see the avalanche perfectly.

"All at once his ears were greeted with a low, rumbling sound that seemed like the roar of a distant storm, and almost simultaneously an immense volume of snow began to move down the mountain side in one of the gulches toward the road. The agitation seemed to break loose the snow from its moorings in the other two gulches, and before one had time to think hundreds of acres of snow were coming down the mountain with a roar like thunder, and filling the air with spray as they tore through the trees and carried everything before them. As they descended their velocity increased until the rapidity with which the great field of snow and debris came down was something terrific.

"The distance, he says, must have been a mile from where the avalanche started to the valley where it stopped. So deep was the snow that a grove of quaking aspens, whose trees were from twenty to forty feet high, was completely buried from sight. Logs a foot and a half in thickness, that lay in the way of the slide, were snapped in two like straws; trees that were too tall to be covered up were torn from their rooted places in the mountainsides and carried like leaves with the avalanche. The velocity of air produced by the avalanche blew down trees that were clear outside of the track of the slide. Fortunately, no one was in the way, and no lives were lost. - Denver News [157, 157A and 182]."

128X. *Denver, South Fork and Pacific* (Poor 1976, p. 348)

"Alpine Tunnel was closed throughout the winter of 1884-1885 because of snow blockades." Quoted from the *Railway Age*, September 3, 1885.

129. *Aspen on the Roaring Fork* (Wentworth 1950, p. 157 and Wentworth 1976, p. 85)

"Ashcroft, Tuesday, March 28, 1885.

"Yesterday morning at six o'clock Messrs. Carlyle, Evans and another gentleman whose name we did not learn started for Tibbitt's ranch in one of the worst storms of the season. They struggled along manfully through the pelting snow, which was almost blinding, until they had reached a point less than a mile this side of the range.

"Mr. Carlyle stopped to adjust his snowshoes and Dr. Evans noticed a snow slide ahead. Mr. Carlyle remarked that Mr. Adair, the mail carrier, couldn't have passed over, and in looking around they saw his hat and a little farther on his hand sticking out of the snow. They started immediately to dig him out but as short as was the elapsed time, about fifteen minutes, he was dead."...

129A. *Gunnison Review-Press*, Saturday, April 1, 1885 (p. 4, c. 1)

"The remains of A. C. Adair, the Crested Butte-Aspen mail carrier who lost his life last Friday by a snow slide on Pearl Pass near Ashcroft will be buried at Aspen."...

130. *Denver Tribune-Republican*, Monday, April 27, 1885 (p. 1, c. 1-2)

FINDING THE DEAD

Work of the Rescuing Party at the Crushed
Homesteak (sic) Cabins.

ALL OF THE VICTIMS DISCOVERED

Indications that the Disaster Occurred Many Days
Ago and its Date an Uncertain Matter.

The Faces of the Dead Men Covered with Mold and Unrecognizable.

SOME CRUSHED, OTHERS SMOTHERED

An Apparent Lingering Agony for a Portion of the Poor Fellows While in Their Living Tomb.

"Special to Tribune-Republican.

"LEADVILLE, Colo., April 26 — A special train consisting of an engine and two coaches with sixty men and the necessary tools, snow shovels, etc., in charge of Superintendent George W. Cook, left here at 4 o'clock on this morning for the scene of the terrible calamity at the Homestead (sic) mine near Tennessee Pass. The rescuing party reached the spot at 8:10 am. Nothing was visible except the snow which had probably fallen and accumulated during the past two months and lay to a depth of forty feet over the cabins. The snow had settled and packed, rendering progress very difficult and axes had to be used in cutting the way through.

Three Excavations,

were made before the cabins could be located. The first structure that was found proved to be the one in which the provisions, food and general stores were kept. No bodies were found here. From this point the position of the other cabins could easily be determined, and the work was pushed vigorously in their direction.

"The bunkhouse was next reached. After clearing a space large enough a log was taken from the wreck of the cabin, and the first body was discovered. Although the building was crushed in by the slide and subsequent pressure, this body bore...

No Trace of Injury,

and was not encumbered by falling timbers. Death must have resulted from cold or suffocation, and probably from fright. The body stood erect, the head slightly thrown forward as if listening, the arms half-raised as in defense, the whole position indicating apprehension. Near him lay one of his companions in a bunk; face downward with his arms crossed under his head. Several large logs lay upon his body, and he was undoubtedly...

Crushed To Death.

"After three hours hard work the opposite side of the cabin was reached, where the bodies of three men were found in an upper bunk, clasped in each others arms. These bodies, like the first, were free from overhanging timbers, and the attitude indicated suffocation. The limbs of the poor unfortunates were so strongly interlocked as to require the united efforts of six or eight men for a full half an hour to separate them.

"From here the workers tunneled to another corner, where one man was found beside a bunk in...

The Attitude of Prayer.

"Death came by freezing or suffocation. In the bunk lay two of his companions, showing no sign of having been disturbed from their slumbers. A tunnel was then made to another corner, where two men were found; the first with his nose scraped off, and his head and body flattened sideways between two timbers which lay about two inches apart. His companion was crushed by the timbers, and his face and limbs were badly scratched. The snow around these bodies was profusely stained with blood.

"Owing to the fact that all of the faces were covered with

Half an Inch of White Mold,

the features could not be recognized. All were in nightdress, and their clothes were deposited near the bunks in which they slept. This and the color of their hair and their size furnish a doubtful clue to recognition. Some of the friends and relatives of the dead men were on the ground and identified them as nearly as it was possible.

"A clock and watch were found which had both stopped precisely at 3:30. The clock was an alarm clock, and the alarm was set for 6 o'clock, and it went off when it was taken up.

A Police Gazette,

was found dated February 14, also a letter from a lady friend in Ohio, dated February 10, to one of the men. The letter, with his answer, sealed, was found near the foot of the bed. The letter will be forwarded to day with a request that when opened the date of the writing be given. In this way it is believed that the exact date of the disaster can be determined.

"From the amount that had been consumed of the three months' supplies which were taken to the mine on the 1st of January, and from the Police Gazette and the letter that was found on the bed, it is believed that the slide occurred between the 20th and 25th of February.

The Last Cabin.

"The third and last cabin was the cookhouse. No bodies were found in it. The searching party left the mine at 4 p.m. and arrived in Leadville at 9:15 p.m. Another party leaves here tomorrow morning to bring the bodies to Leadville where they will be cared for by their friends.

The names of the victims are:

MARTON BORDEN

SYLVESTER BORDEN

HORACE W. MATTHEWS

JOSEPH MATTHEWS

JOHN LOCK

JOHN BURNS

CHARLES RICHARDS

CHRIS HARVEY

ROBERT CAMPBELL

JOHN BURNES

How the Discovery was made

"Sweeney and Conerty, the two miners who made the first discovery of the awful calamity, give the following story: The men at work at the Homestead (sic) were nearly all intimate friends of theirs, and two or three were relatives. As the men had not been in Leadville since January, the mail addressed to them had increased to quite a bundle. No word had been received for weeks from the men at the mine, but their friends had no cause for apprehension for their safety.

"Sweeney and Conerty resolved to go to the mine and bear the accumulated mail to them. With this purpose they left Leadville on Friday, walking across the country. Arriving at the Homestead (sic), imagine their horror to find the gulch where the three cabins once stood filled with snow and every indication of an avalanche. The tunnel to the mine and the ore dump were covered with the snow. The men fired their pistols and made outcries, but only the echo came back as the answer. Satisfied that no living being was about, the two men made all possible haste to the Eight-Mile House [144]."... [Other accounts are in Wentworth 1950, p. 157 and 266 and Wentworth 1976, p. 86.]

131. *Leadville Herald Democrat*, Tuesday, January 19, 1886

Snow Slide Near Gunnison

(Special Telegram)

"Aspen, Jan. 18 — A snow slide is reported from Deadman's Gulch, near Pitkin (Fig. 46). It caught W. J. Fine, the well-known Gunnison county surveyor, and a man named Turner. The report states they were in a sleigh, and that the entire outfit were buried. A rescuing party has gone out to recover the bodies of the unfortunate men."

Associated Press Report

"Denver, Jan. 18 — A Gunnison special to the News says F. S. Winters and Will Turner, returning from a surveying trip at Spring Creek, this evening, had a narrow escape. When directly opposite the mouth of Deadman's Gulch they noticed a snow slide coming down the mountain. They were on horseback, and it was impossible to urge their horses in the four feet of snow that lay on the ground. The edge of the slide caught three men and horses, but Mr. Fine was only buried with about a foot of snow and managed to extricate himself and horse, and then assisted his companions. Winter and his horse were dug out alive, but Turner's horse was killed by the slide, and was unconscious himself when dug out, but soon revived. It took them four hours to dig [him] out."

[Wallace 1960, p. 74 citing an article in the *Gunnison Review-Press* for January 19, 1886 says Turner was able to get his hand above the snow because he was standing on his dead horse.]

132. *Leadville Herald Democrat*, Wednesday, January 20, 1886

Snow in the Ten Mile

(Special Telegram)

"Dillon, Jan. 19 — This snowstorm is the heaviest ever known in this part of the state. At least two feet has fallen since Sunday.

"The High Line [of the Colorado Southern Railroad] and Blue River Branch of the Denver and Rio Grande are having considerable trouble with snow. Superintendent Cook [of the D&RG] arrived here at 2:30 p.m. today with the big snowplow engine '80' and engine '70' with the flanger. These engines plowed five to six feet of snow between Leadville and this point to

day. The wind is blowing very strong from the northwest, and the snow is drifting badly. There are two and one-half feet of snow on the level here, three and one-half feet on the level at Kokomo and Robinson, and four feet on the level at Fremont Pass. Neither the Blue River Branch of the Denver and Rio Grande, or High Line are moving much freight to-day, but concentrating their efforts to keep passenger trains moving."

[There were two railroads between Leadville and Dillon during this era. The Blue River Branch of the Denver, Rio Grande Western (D&RG) and the Denver, South Park, and Pacific Railroad, later called the High Line Branch of the Union Pacific, and also the High Line or South Park Branch of the Colorado Southern (C&S). The D&RG had the westernmost alignment.]

Snow Slide on Aspen Mountain (Special Telegram)

"Aspen, Jan. 19 — An appalling snow slide occurred to-day on Aspen Mountain, just above and in sight of the city, doing some damage to property in the vicinity of the Bonanza Mines, and killing John Rose, a miner well known in this and the Leadville districts."

Three Snow Slides at Aspen

"Denver, Jan. 19 — An Aspen special to the News says: It has been steadily snowing here for three days. The snow is now from two to three feet deep. At about 4 o'clock this afternoon, one of the most terrific wind storms ever experienced in the valley prevailed for a few moments and then subsided in a calm. Soon after it passed, parties on the street saw a snow slide of gigantic proportions pass over the Aspen mine, and an alarm was immediately given, and soon physicians and hardy miners started for the scene of the disaster.

"On arriving at the shaft house of the Aspen Mine, particulars of the disaster were learned. The men who were in the house heard the noise of the approaching avalanche and hastily secured a place of safety. John Rose, carpenter of the mine, was in the shop and attempted to secure a place of safety, but was too late. It caught him and dashed him into the door of the shaft house, where he was buried under tons of heavy snow.

"The engine house was crushed in, and engine and boiler {were} buried under snow. Frank Ball, the engineer of Aspen, John Leonard, one of the owners of the Conomara Mine, John Morrison and several others were in the shaft house when it was struck, but miraculously escaped with but few bruises.

"After the slide had passed John Rose was found missing, and his comrades at once instituted {a} search, and after hours of hard work found him a few feet from the engine house crushed and bruised beyond recognition. He was brought to town and placed in the morgue. He was unmarried.

"Half an hour later another slide occurred in the adjoining gulch, which passed over Last Chance Mine, but without damaging effect.

"At 5:30 the fire bells announced the occurrence of another slide, an investigation revealing that two ore wagons and mules and drivers had been buried in another slide near the Late Acquisition. At a late hour the missing ones had not been found.

"Considerable apprehension is felt for the safety of seven men who started this morning for Maroon Pass for the purpose of clearing the new road of snow where the slide of yesterday had filled. They should have been back at noon. There is a report that another slide had occurred on the pass today, and the absent ones may have been in it" [135].

133. *Railway Age*, Thursday, January 21, 1886

"Mrs. Marcella Doyle who lost her entire family of three sons and three daughters, brought suit in the United States Court against the Denver South Park & Pacific to recover \$50,000. She says her husband died in 1880 and left her penniless. Her three boys were 23, 19, and 10 years old respectively, while her three daughters were 18, 14, and 12 years old.

"Mrs. Doyle contends that she was induced by the Railroad Company to take charge of the boarding house at Woodstock near which place the company had a large force of men at work. Mrs. Doyle says that she and the girls cooked and that her three boys worked for the railroad. She contends that the Woodstock station was built directly in the path of where numerous snow slides had occurred, but of this fact, she alleges, she was kept in ignorance.

"The slide, which occurred March 10, 1884, swept all the Woodstock buildings away, killing all her family and others [126]. Mrs. Doyle was carried down with the avalanche of snow, but was rescued sometime later, more dead than alive. She states that she depended on her children for support, and by their loss she is left without means. The aged mother claims \$5,000 for each child and \$20,000 for injuries and damages to herself and personal property.

"Eighteen persons were buried in the snow, thirteen of whom were found dead. It was one of the worst disasters from snow avalanches known in the history of the state. The only person to escape made his way to

Pitkin, ten miles away, to report the disaster. Those rescued alive were Mrs. Doyle, Hugh Alexander, Peter Wallpole, Walter Hoyt, and Mrs. Doyle's niece, Miss Celia Dillon.

"Miss Dillon was found standing among some timbers beneath the snow where she had been held for over fifteen hours. Mrs. Doyle was rescued a few hours before. The rescuing party worked for forty-eight hours, but only ten bodies were recovered, it being impossible to rescue the other three bodies until later in the spring. One of the bodies, a saloonkeeper by the name of Joe Royengo, was not found until the following summer. Others killed were George Alexander, Michael Shea, Jasper Caswell, and James Tracy.

"It was claimed that the side of the mountain had been covered with a heavy growth of timber which would have prevented the slide, but that the railroad company had cut away practically all of this timber for tie and building purposes thus making the deadly avalanche possible" [126].

[Brown (1968, p. 14 and 40) states that in March 1884 the whistle of a train approaching the west portal of the Alpine Tunnel (about 6 miles east of Pitkin) started a snow slide that obliterated the town and took the lives of 14 of the town's 17 inhabitants.]

[Southworth 1997, p. 258 reports a train whistle started the avalanche.]

[In another account by Helmers (1963) no mention is made of the train whistle. Helmers states a train was bucking through heavy snowdrifts on the upper limb of the switchback above Woodstock when the avalanche released above and behind the train. He gives the number of fatalities as 13 out of 18. This account also gives several good maps and some photographs of the Woodstock area. (It is much more likely that the plowing action started the avalanche rather than the train whistle, but it has considerably less journalistic appeal.)]

134. *Leadville Herald Democrat*, Friday, January 22, 1886

**The Blue Line Buried Jere Mulhavey and Six Men in a
Temporary Tomb—Thrilling Scenes Under the Brow
of the Continental Divide—Supt. Cook and His
Gallant Force to the Rescue.**

The Chalk Ranch Avalanche

"The Chalk Ranch avalanche was the only theme of conversation that seemed to interest people in this city Thursday afternoon. It was first reported that Jere Mulhavey and his whole section gang were under the huge snow slide, and Superintendent George W. Cook not only took the mogul

engine, pushing the snow plow up to the scene of the disaster with him, but ordered the snow plow and work train from Dillon, in addition to which the big snow plow, pushed by two engines, were working on the Robinson side of the avalanche. One of the reporters of The Herald Democrat staff was deputized to accompany Mr. Cook, who also took sixty shovelers and their Western Union linesmen with him to the scene of the disaster.

"The train pulled out from the Leadville depot at 12:30 o'clock, and by 1:15 had plowed through the heavy snow on the seven miles of track between this city and Birdseye Station. The snow plow got stuck in the snow so that it could move no further at Darby's Switch, and it then became necessary for the sixty shovelers with Mr. Cook to make a cut through the avalanche to where Jere Mulhavey and his section gang were supposed to be buried. The first trouble was to find the railroad track, as the face of the whole country was changed by the tremendous land and snow slide. The telegraph poles had been snapped off like one might snap a clay pipe-stem, and the wires were too deep under the snow to be found.

"There was also considerable question whether the railroad track had not also been swept away and hurled down into the valley with the uprooted trees, huge upturned boulders and vast fields of ice and earth. It became necessary to sink shafts in many directions, where the road-bed was supposed to be located, and after these were sunk from thirty to forty feet, the shovelers were delighted to find that a part, at least, of the track still remained.

"In the meantime Mr. Cook, Mr. Brooks, chief of the Western Union linemen, and some four or five other persons, who went to assist them, went floundering around over the snow on the top of the avalanche, looking for a wire to connect with the instrument they had brought out with them. The only way they succeeded in getting down the steep hill, which was formerly a precipice, was by rolling over and over until they reached the bottom, for the snow was too soft to walk on.

"They finally dug down to the top of a telegraph pole and got hold of a wire to which they connected the instrument and tried to make the circuit with a ground wire. In the mean time the snow was falling fast and being driven around in drifts and eddies, and before the circuit could be made Mr. Cook, Mr. Brooks and their companions including the reporter were covered up in a drift. This must have wet the instrument and interfered with it so that it would not work, for after making four different attempts it was impossible to make the circuit.

"After floundering out of this drift the avalanche had to be climbed again to where the men had been working, and for this purpose a life line was let down from the diggings to where the distressed and snow covered linemen were. By means of this rope they pulled themselves to the pits the men were working in and Mr. Cook found that they had struck the track in

several places and found the course it took. In some places the avalanche had carried it forty or fifty feet.

"At this time the men were working in chambers driven from the shafts they had sunk and were cutting out huge blocks of snow, which was about the consistency of cheese. The work was terribly severe for the men and the snow was so deep they had to make the cut by benching. These benches or steps were cut by one gang of men below the other and the snow was first cut from the bottom and thrown to the first bench. From the first it was pitched to the second, thence to the third and so on, each bench being about six feet above the other.

"Mr. Cook jumped down into one of the shafts with a shovel, and was assisting one of the men in finding the track, when his feet struck upon a soft, warm body. He stopped and wiped the cold sweat from his brow, because he thought he had found Jere Mulhavey and his section men. With the assistance of the man who was working with him, he pulled out the dead body, and it proved to be that of a timber wolf. When the animal was examined there was hardly a whole bone in its body, and the skin was torn off its flesh in several places. About this time a terrible crashing, roaring and booming was heard from the top of Chalk mountain; and the whole top of the mountain seemed to tremble, hesitate, and finally topple over, after which about twenty-five acres of snow came rushing down upon them with the rapidity of lightning. It cut, tore, scooped out the mountain as it descended, with awful and indescribable noises, upon all.

"Every one of the seventy men who saw it held his breath, but the course of the terrible land-slide had been preordained to do good and not harm, and as it tore down near the big rock cut, it carried acres and acres of snow and earth with it and disclosed Jere Mulhavey and his men on the other side, working towards us. The huge mogul engine driving the snowplow also became visible, and a cheer arose from the lips of one hundred and twelve people at once.

"The good work continued. Pit after pit was sunk, and with the assistance of the second avalanche, by 4 o'clock a cut over fifteen hundred feet long was made through the avalanche, and the snow-plows were put to work to make it large enough for the trains to pass through.

"When the three gangs of men got together it was ascertained that although Jere Mulhavey and six of his men were covered by the soft snow carried on the extreme north of the avalanche they soon dug out, and, beyond a few bruises, will not suffer much. Mr. Mulhavey says when the avalanche came down they thought the whole of Chalk Mountain, assisted by Little Sugar Loaf and Moriarty Peak, were making a descent upon them simultaneously."...

135. *Leadville Herald Democrat*, Friday, January 22, 1886

A SNOWY SHROUD

Additional Victims Reported Covered by the Avalanches
That Have Terrorized Aspen.

Maroon Pass the Scene of Twenty-seven
Snow Slides in Rapid Succession.

A Leadville Freighter Takes an
Awful Tumble from Independence

COLORADO NEWS

Twenty-seven Snow Slides for Aspen.

"Denver, Jan. 21 — An Aspen special to the News says: The results of the terrible snow-slide on Tuesday [January 19] continue to arrive. Henry Thode and a party of men on Tuesday left Aspen to open Maroon Pass, which is one of the most treacherous spots in the Rocky Mountains during the winter. The party has not yet been heard of, and considerable apprehension is felt for their safety. This afternoon two freighters arrived from the pass, and say on Tuesday afternoon a snow-slide occurred about two miles up the creek from Speller's and Couers Chanis' cabin, and that eight men and eighteen horses and mules had been carried {away} by the avalanche.

"Four of the men had rescued themselves, and after undergoing privations incident to such a catastrophe had found their way after a night's struggling to Speller's Cabin. The four men who escaped were the Huskin's boys, Marion Stewart and Charles Miller, the victims of the slide being Albert Sloper, Ira Hall, from Crested Butte, James Hungerford and David Pattenhall of Aspen. Men from Speller's started for the scene and succeeded in rescuing twelve of the eighteen mules, but up to noon today had not found any remains of the men. During the past three days twenty-seven snow slides have occurred in the neighborhood of Maroon Pass [132 and 143].

"Today's incoming Leadville stage brought information that a six-mule team and driver went over Independence Pass this afternoon, falling nearly a thousand feet. The driver was rescued alive.

"This morning a miner from Conundrum Gulch stated that a fearful slide occurred this afternoon in exactly the same spot where occurred the fatal slide of two years ago, in which several men were killed [I23A]. Two men are supposed to have been caught, but nothing is positively known."

[Wentworth's (1950) report on the Maroon Creek Road avalanches are a bit confusing, probably because there were so many avalanches in the area at this time. On page 272 the date of the avalanche is given as January 20. Seven men and six horses were reported killed. On page 278 several avalanches were reported for January 16, with five victims in one and three in another. Three of the men had still not been found in June 1886.]

[We could not confirm the January 16 avalanches or their fatalities.]

136. *Leadville Herald Democrat*, Sunday, January 24, 1886

Snow Slide at Robinson (Special Telegram)

"Robinson, Jan. 23. — The first snow slide of the season in this vicinity occurred this afternoon, near Summit City, on Sheep Mountain. It caught the team belonging to J. L. Loomis, of the Wheel of Fortune Mine, carrying them down the mountain, and completely burying George Marshall and William Clark, two employees of the mine. Marshall succeeded in getting out, but could find no trace of Clark or the team. He immediately started for the mine and brought down a force of men, who, after one hour's work, found Clark, alive, but unconscious and seriously injured. After considerable prospecting, the team was found. The horses were alive, but are supposed to be badly crippled."

137. *Leadville Herald Democrat*, Tuesday Morning, January 26, 1886

BURIED AT BUTTE

Four More Victims of the Unmerciful Avalanche on the Mountains.

The Thrilling Experience of a Miner in Grizzly Gulch—Covered by the Snow.

Another Slide at Aspen does Incalculable Damage to Machinery.

COLORADO NEWS

A Thrilling Experience (Special Telegram)

"Salida, Jan. 25—United States Mineral Surveyor A. Storm brings in the news of a sensational snow slide at Independence. Thomas Hannum was employed by F. E. Hayden to do assessment work in Grizzly Gulch [Grizzly Reservoir (Fig. 45)], five miles south of Independence, and had nearly completed his task, when the present storm commenced. He was returning from a hard day's work, when the well-known crash of the death-dealing avalanche met his ear. On snowshoes Hannum did his best to escape, but the first wave pinned him fast with a mass of snow, like a plaster of pares cast, enveloping him to the waist.

"Another roar and a second wave came thundering down the mountain, and the victim held his breath and waited for the golden gates to open; but the wave rolled past, leaving his body to his neck in a vice of ice, earth and snow. With senses nearly gone, Hannum began to struggle for life, and was succeeding when the ground trembled and another earthquake seemed about to gather him in. This time the snow covered his head, fastening the right arm down by his side, and left upward through to the surface.

"Again the boatman pale failed to respond, and with returning consciousness the life struggle commenced anew. By moving the arm extended upward, an air shaft on a small scale was opened, and the arm released. The right arm was also soon freed, and with both, the half-frozen man worked with desperation, making the snow, packed as hard as earth, into balls and {pushed them out through the} air shaft. After four hours of such labor and with bruised and bleeding fingers the man released himself. His partners measured the excavation necessary to obtain the snowshoes and found it seven feet."

Another Avalanche (Special Telegram)

“Wheeler, Jan. 25 — An avalanche has just rushed down from the mountains and covered the Denver and South Park track for half a mile, and filled up Ten Mile Creek. The avalanche has extended to the Denver and Rio Grande track, which is covered for a distance of four hundred feet. Superintendent George W. Cook is on his way to the latter place with his snowplows and sixty men. The Denver and Rio Grande will be clear by night.”

Another Aspen Snow Slide

Denver, January 25. An Aspen special to the News says: “a snow slide of considerable dimensions passed over the Jessie Mine on Aspen Mountain, at noon today demolishing the machinery and mining buildings. Fortunately, no lives were lost. The whereabouts of sixteen coal miners who left Crested Butte for Aspen, eight days ago, is unknown. It is feared they met their death in Maroon Pass over which route they were to come.”

More Victims of Snow Slides

Denver, January 25. A Gunnison special to the News says: “Two snow slides occurred yesterday morning. One was in Poverty Gulch – eight miles north of Crested Butte. It carried away a cabin near the Excelsior Mine and caught four men. John Grimes dug himself out after three hours and went to Pittsburg for help. The three dead were William Alexander, John St. John and an old man named Goss.

“The second slide ran down White House Mountain in Crystal Basin and carried away the cabin occupied by Robert Corey and a man named Collins killing both of them.”

[Concerning the Excelsior Mine accident, Vandebusch 1980, p. 279 citing *Gunnison Daily Review – Press* for January 30, 1886 says: the Goss mans first name was John and that an empty bunkhouse was also destroyed. The three buried men were calling for help but Grimes couldn’t free them. They were dead when the rescue party dug them out.]

138. *Leadville Herald Democrat*, Tuesday, January 26, 1886

The Local Legend

Buried Alive

"The thrilling and painful experience of Dennis Smith, a track walker for the Denver and Rio Grande Railroad, while buried in a snow slide, on Fremont Pass for five hours, on Sunday, was obtained from Mr. Frank Brooks, the Western Union lineman, by a reporter of this paper. Mr. Brooks rescued Dennis Smith from his untimely grave just soon enough to save his life, as the man was very much exhausted with his efforts to get out and was about to die from a fainting spell.

"Mr. Brooks statement was as follows. He said:

'We had been up 'The Blue', about two miles west of Kokomo, and I had repaired a wire there, and was returning when the snow-plow stuck in an avalanche near the Curved Bridge on Fremont Pass. We had the pay-car with us and two section gangs, one from Birdseye Station and the other from Fremont Pass section house. The men got out to shovel the snow out of the track so as we could proceed, and I put on my snowshoes so as to reconnoiter along the line, in order to find out where the wires needed repairing. The snow slide was very deep in some places, and I could see that it had done considerable damage.

"In looking about for wires I saw a strange looking object moving on the top of the snow about 160 feet below me, at what was the foot of the precipice before the avalanche came down. I could not tell what the object was at first. It appeared to me like the feet and head of a little dog or guinea pig that was lying on its back. The head and feet kept moving, and I did not feel as if I could let any living creature perish in that way so I hastened to the spot.

"The snow was somewhat soft and I had some trouble in getting down the side of the avalanche. I finally got there, however, and was horror-stricken to find that instead of being a guinea pig or a little dog's feet, it was the fingers of a man who was buried in the snow above his head. He had twisted and bucked in his untimely grave until he had made a hole large enough to turn around in, but the soft snow kept falling in upon him, and it was this that he was trying to throw out and brush away with the hand I saw moving. He had a good deal of trouble to keep from being smothered, because the side of the avalanche was very steep, and the snow kept eddying and drifting down upon him as the wind drove it down the precipice.

"I came as near his tomb as I dared, and told him I would get the men to come and dig him out. He answered with a low moan that I could not understand. I then made my way laboriously and with great difficulty, even with snow shoes, up the steep side of the huge snow slide to the track which the section men were digging pits to find. I considered the matter on my way up and saw that no man could get to Smith's tomb and get back again without snowshoes. When I inquired and found out that there was not another pair of snowshoes on the train I saw that I had my hands full of business. I got a shovel, however, and hastened back to the dying man's grave.

"After going just below the tomb I commenced to cut a path through the snow towards him, and packed the snow as hard as I could with the shovel so as to form a pathway for him to walk out on. I finally succeeded in digging down to his feet, when he fell on the pathway I had just finished in a dead faint. After he came to the main trouble was to get him up the hill to the train. This was no easy job, but I succeeded after a time in helping him to the cars, where he soon warmed up and revived.

"Dennis Smith's experience while buried alive was, indeed, a terrible one. He says he was walking along the track near the Curved Bridge, on Fremont Pass, and found it necessary in many places to shovel the snow from the track before he could inspect it. While he was in the act of clearing the track in the manner described he heard a booming, roaring and cracking as if it was thundering from the four points of the compass at once, and the heavens were about to explode and discharge its contents over the face of the earth. In another moment he looked up to see a mountain of snow on Moriarty Peak swing around, topple and tear down the precipice upon him as only an avalanche can.

"It took this mountain of snow only three or four seconds to travel the five thousand feet between the top of the peak and the awe-stricken railroader, and a half second more to carry him down with it over the precipice several hundred feet below. There was enough snow to fill up the precipice, and as Smith shot over the abyss on the crest of the snow slide he found his life saved only to know that he was buried beneath the avalanche. After being buried alive for about five hours and suffering, as he says, the tortures of the damned, he was rescued by Mr. Brooks as above stated."

139. *Leadville Herald Democrat*, Wednesday, January 27, 1886

A Double Slide

"Passengers arriving from Aspen last night report a most violent day on the {Independence} Pass, the steaming and sweating animals not coming

into the avenue until after 10 o'clock. The sun had had its effect on the snows, and as they were loosened below, they swept down the mountains like a moving universe, snapping huge trees and dislodging boulders that had stood there for ages. Fortunately they were below the road over which the sleighs dashed."...

140. *Leadville Herald Democrat*, Thursday, January 28, 1886

"...A very large snow slide came down in Eagle Canon below Red Cliff yesterday covering the Denver and Rio Grande tracks, on the Eagle River Branch to a depth of fifteen to twenty feet for a long distance. It also dammed the Eagle River for three hours, the river being entirely dry below the slide. This caused the river to rise rapidly from the obstructions, and in thirty minutes was one to two feet over the railway tracks in the canon. The pressure of the water finally became so great that a channel was made under the slide, and the river receded rapidly to its natural course."...

141. *Leadville Herald Democrat*, Tuesday, February 2, 1886

A Fearful Fate

An Awful Avalanche (Special Telegram)

"Kokomo, Feb. 1 — A gentleman just arrived here from Wheeler, near which place the High Line passenger trains are blockaded, and reports that this morning about 10 o'clock a frightful slide occurred, burying three of the railroad crew under a mountain of snow. The large force of men employed on the road, under the direction of Superintendent Toubey, were immediately set to work to recover the bodies. They were soon taken out, but life was extinct in all of them. The gentleman did not learn the names of the unfortunate victims, but they are all strangers to these parts."

At Least Three Men Caught (Special Telegram)

"Breckenridge, Colo., Feb. 1 — A fatal snow slide took place yesterday morning on the High Line, in which are buried three men at least, and as much time has elapsed since they were entombed, there is no hope felt for their recovery alive. The name of one man is known as McWilliams, while

the names of two of the unfortunates cannot be learned. The slide was very extensive and came with great force, so that it is unknown just where to look for the men who are held in the cold embrace.”...

142. *Leadville Herald Democrat*, Tuesday, February 2, 1886

Barricade on the Blue

A Day on the Blue

“The upper Arkansas valley presented a wild and weird spectacle on Sunday last. From the outer limits of Leadville to the summit of Fremont Pass, mountain and valley were covered with snow to the depth of five feet...Two feet of fresh snow had fallen on Saturday night, and as if this were not enough to discourage all efforts to reopen the line, immense bodies of snow from the higher elevations had here and there slid down into the cuts, burying the track under masses ten to twenty feet deep, the fearful velocity of the slides packing six feet of the snow into the space of one...

“The run to Birdseye was made without incident, the new snow yielding but little resistance to the power of four locomotives behind the mammoth plow that reared its proud crest above the headlight. But their triumph was of short duration,...{suddenly} they came to a standstill in a mass of snow that towered above the stacks, and upon the surface of which one could walk to the top of the plow!...In an instant a hundred or more shovels were at work, doing that which the power of steam and the mechanism of invention were powerless to accomplish...The track was cleared, with shovels, of snow varying in depth from five to twenty feet, packed in some instances as hard as granite, and in some of the narrow cuts it became necessary to throw it upon a bench made in the sides of the drifts, from which it was again lifted by other shovelers to the surface. By 2 o'clock the snow plow and flanger had reached the summit, the working force having been scattered along the line for a distance of six or seven miles...

“As the trains slowly wound their way up the steep incline, all eyes were attracted to a spot in the valley below where a huge mass of snow had rolled down the mountain side, with a noise as of thunder, carrying with it a mass of rocks and trees, and filling the track over which the trains had just passed with a mass of debris twenty feet deep. This avalanche, had it occurred ten minutes before, would have buried a hundred men or more beneath it, and destroyed a hundred thousand dollars worth of property! ‘The Lord is with us!’ was echoed through the train...

“Deeper snow was never before seen in the Ten Mile district.”...

143. *Leadville Herald Democrat*, Thursday, February 11, 1886

An Awful Tomb

"Arthur Salisbury, one of the industrious compositors of this office, whose digits are perpetually grinding at the dreams and realities of the reporter, received a letter yesterday from his father, containing a graphic and thrilling portrayal of the awful avalanche on Maroon pass, in which he and a number of others were imprisoned.

"The venerable gentleman introduces his description of the horrors that were endured by stating that for twenty-six days they were held in a small cabin at the foot of the range.

'On the evening of the fourth day after leaving Aspen,' [January 23, 1886] he continues, 'and while on our way to the Buttes, we met the stage. The driver reported a slide on the range that rendered it impossible to ascend the grade. We reached timberline, where we encountered a basin, upon each side of which the mountains towered.

'Far away in the latitudes we saw indistinctly defined a jack train, consisting of some thirty burros or more. They were making a desperate effort to cut their way through the almost impenetrable bed of snow, and moved forward almost imperceptibly. Moving along in file the train described a black line over a measureless crest of white snow. The scene was a weird one, and presently the animals were unable to move further. The blanket of night began to descend, and the perilous retreat was begun.

'At this time a blinding snowstorm was prevailing, and the soft snow had obscured the trail. Upon his knees one of the punchers strove to keep the road grade, while the burros followed, the snow holding fast to them.

'While this was going on and while the infuriated elements grew worse, a horse and burro was precipitated over the side of the mountain and vanished in the snow drifts.

'We then returned to our camp and went into headquarters, from which it was doubtful if we {would} ever emerged alive. On the following morning, while the snow was being twisted in all sorts of shapes, we started out if possible to rescue the remaining jacks that were buried in the snow.

'We found only one and pulled him out by the tail. We then pushed on over the trackless expanse in an effort to find the horse. The task was a perilous one and the owner who is fearless in his nature finally called a halt. He said it was idiotic to proceed further in the jaws of death, and we returned with the single jack to our cabin.'

"The writer continues to describe the difficulties that multiplied each hour and the agony that increased as the snow fell, until the cabin in which they were imprisoned was obscured. Their predicament was a desperate one, and Mr. Salisbury says they had determined to resort to giant powder rather than endure the horrors of a lingering death.

"For twenty-six days they were confined in this ice box, and when relief came they reached the light of day with a ready made prayer for those who had been carried into eternity by the death-dealing snow slide upon their lips. The victims of the fatal Jeanette could not have endured more horrors for a corresponding time, and while they were confined in the cabin men and teams were being swept into the grave upon all sides" [135].

[We cannot reconcile the dates with the twenty-six day confinement period. According to account 135 the men left Aspen on Tuesday, January 19. Twenty-six days from then would be February 14, yet this account is dated February 11.]

144. *Leadville Herald Democrat*, Sunday, February 28, 1886

The Homestake Horror

Give the Money to the Child

"The Homestake horror [130] is still fresh in the minds of our citizens and it is not even necessary to mention the names of the ten miners who were crushed and smothered to death in the slide, which came tearing down the old mountain a little more than a year ago....

"During the week before the obsequies public meetings were held and committees appointed to solicit subscriptions to defray the funeral expenses....After the burial, another meeting of the committee was called. On motion \$400 was sent to the widows of the married men among the victims; the necessary expenses that had been incurred were liquidated, and the treasurer of the fund...had remaining on hand a trifle over \$850. On motion this was appropriated toward erecting a suitable monument over the graves of the deceased. This committee has so far not agreed upon the style of marble or granite to be used, and the money is lying idle in the banks.

"The cause for this lengthy prelude is this: A little girl — a daughter of one of the victims of the Homestake snow slide — lives at Denver with no other relative to support her than an aged grandmother, who is not blessed with a quantity of this world's goods. Would it not be much better to take this money in the bank and use it in educating this child than to spend it in erecting a slab to the memory of some worthy and honest miners, but who by their lives did nothing that should cause their names to be handed down

to posterity, and who only by their tragic death caused the general public to become familiar with their names?" [I30 and I30A].

145. *Leadville Herald Democrat*, Wednesday, April 21, 1886

The Snowbound Trains

A War with the Elements

"Superintendent George W. Cook, of the Denver and Rio Grande Railroad, is fighting the snow again with all his forces. The heavy fall of the beautiful on Fremont's Pass Monday night stuck three trains on the Blue River Branch, and on Tuesday morning Mayor Cook started out with the big snow plow, the flangers, nearly a hundred snow birds and the commissary car, with the intention of clearing off the huge avalanche that had swept down from Snowslide Peak, near Chalk Ranch."...

Swept Over a Precipice

"Mr. J. C. Carson, proprietor of the Aspen and Glenwood Springs Stage Line, received a telegram from Aspen on Tuesday morning at 9 o'clock, that a snow slide had swept the stage from the road at a point above timber line, on the other side of the range, about twenty miles from Aspen and thirty-three miles from Leadville [Independence Pass]."...

147. *Leadville Herald Democrat*, Friday, April 23, 1886

Latest from the Aspen Stage Accident

Superintendent Cook Still Cutting the Avalanche

Two Snow Slides Near Red Cliff

The Independence Snow Slide

"...A report from an agent of the Aspen–Glenwood Stage Line says: a snow slide covered the pass at a point half a mile below the Z, between

Freighter's Rest and Independence....It came down in such a great volume on Monday that two sleighs were hemmed in at Freighter's Rest, but no one was hurt....

Cutting Through the Avalanches.

"For the past thirty hours Superintendent George W. Cook's outfit, consisting of four engines, the commissary train and superintendent's coach, have been upon Fremont Pass, where fifty men have been trying to cut a roadway through the avalanche for the trains. At 8:30 o'clock last night the snow fighters reached a point within half a mile of Alicante, and had to stop work until daylight.

"They went to work again at daybreak Wednesday morning, and the report from Mr. John Flynn, trainmaster of the Denver and Rio Grande road, at 8:30 this morning, reports that they expected to reach the three trains that are snow-bound in the avalanche some time in the afternoon. He reports that the snow has drifted badly and lies on the track from four to twelve feet deep, and that at 9 o'clock it was still snowing hard....

"There are two large snow slides in the canon west of Red Cliff. One of them is in the Homestake Cut, and is from fifty to sixty feet in length and about fifteen feet deep. The extent of the other avalanche is not known yet....

"Two engines are stuck on the Denver and South Park Branch of the Union Pacific road, a mile west of Fremont's Pass. A force of ninety men in charge of Division Superintendent Touhey is engaged in shoveling them out."

149. *Leadville Herald Democrat*, Friday, April 23, 1886

The Roads to Leadville

Opening the Stage Road over the Range— A Toiling Wayfarer's Account of a Disaster

The Accident at Independence

"The stage that left Aspen Wednesday morning [April 21] did not get into Leadville until 5 a.m. Thursday, and was on the road nearly twenty-four hours. The driver reports that...on Monday evening [April 19], near Independence, a snow slide had come down from the basin on the mountain

between Freighter's Pass and Independence and the driver of the sleigh,... seeing that he could not drive over it, thought it best to leave the sleigh and ride the horses through the avalanche {debris} to the station at the foot of the range, where the coach was waiting {for} them. At the point where they unhitched the four horses from the sleigh the pass was very narrow and precipitous.

"After they had taken the horses out with the intention of leading them, one after the other, through the drift, one of the animals became frightened and unmanageable, and there was nothing for it but to let go the reins and let him plunge over the precipice....

"It appears that the storm was the most severe experienced during the present season. Several feet of new snow fell on the range, and on this side it slide [sic] in a number of places....

"The storm raged with terrible severity. One gentleman related that he had one horse by the tail and another by the bridle and could see neither one of them."

151. *The Colorado Graphic*, Denver, Saturday, January 7, 1888 (p. 5, c. 2)

All Over Colorado

"...Yesterday morning about 8 o'clock as Mr. Fred Rall, better known as 'Dutch Fred' and a colored man in the employ of Aspen Water Company were on their way to cut the ice out of the flume which supplies the city mains with water, a snow slide came down the mountain on Castle Creek and took Rall and rolled him in its folds like a flapjack, buried him many feet in depth. The colored man had a crowbar in his hand, and when he realized his predicament he stuck the bar in the snow and ice and maintained his footing and was saved. On notice the manager of the Water Company sent up a conveyance and brought Rall's body to Tooley's undertaking rooms."...

[From the Snow Slide Disaster file at the Colorado Historic Society Library, Denver. The original article was not seen.]

152. *The Denver Republican*, Saturday, February 27, 1891 (p. 1, c. 1)

CRUSHED BY THE SNOW

Two Women, One Man and a Child Carried to Their Death.

FEARFUL DISASTER ABOVE IRWIN

Avalanche Over a Mile in Extent
Sweeps down From Ruby Peaks

BUILDINGS CRUSHED LIKE EGGS

MRS. ROPELL, Wife of the Superintendent of the Mine,
MRS. CLARK, HER CHILD and CAPTAIN B. F. SMILEY, Engineer,
The Victims of the snow slide — Fred St. Germain Buried
in the Snow, but Recovered Alive After Four Hours
— The Bodies of Mrs. Ropell and Her [sic] Child Found
Last Night and Will Be Brought to Denver today
— Search Continues for the Others.

“CRESTED BUTTE, Colo., Feb. 26 — [Special] — The deadly snow slide has claimed four victims at the Bullion King Mine, above Irwin, nine miles from Crested Butte. The worst snow slide ever heard of in the country came down from the Ruby Peaks about 1 o'clock yesterday afternoon, sweeping over the Bullion King Mine, carrying death and destruction in its wake (Figs. 27, 28, and 29).

Victims of the Slide.

“Mrs. Ropell, the superintendent's wife; Mrs. Clark, the wife of Ed A. Clark, who kept the boarding-house, with her 2-year-old boy, and Captain B.F. Smiley, an engineer, are the unfortunate victims buried in the snow. Fred St. Germain was also buried, and after four hours was dug out alive, badly hurt.



Figure 27. — Avalanche-damaged trees 1-1/4 miles from the summit of Ruby Peak (in the background) above Irwin. This damage occurred not far from the Bullion King Mine where four people were killed by an avalanche on February 26, 1891. This photo was taken in June 1981.

Hunting the Bodies.

"Every man in Irwin was notified and has been working hard and faithful ever since with the vain hope that some of them may be found alive; but now, twenty-four hours after the slide, none of the bodies have been found, and it is extremely doubtful if any would be alive at this time. The telephone wire was down between here and Irwin and no word could be sent....

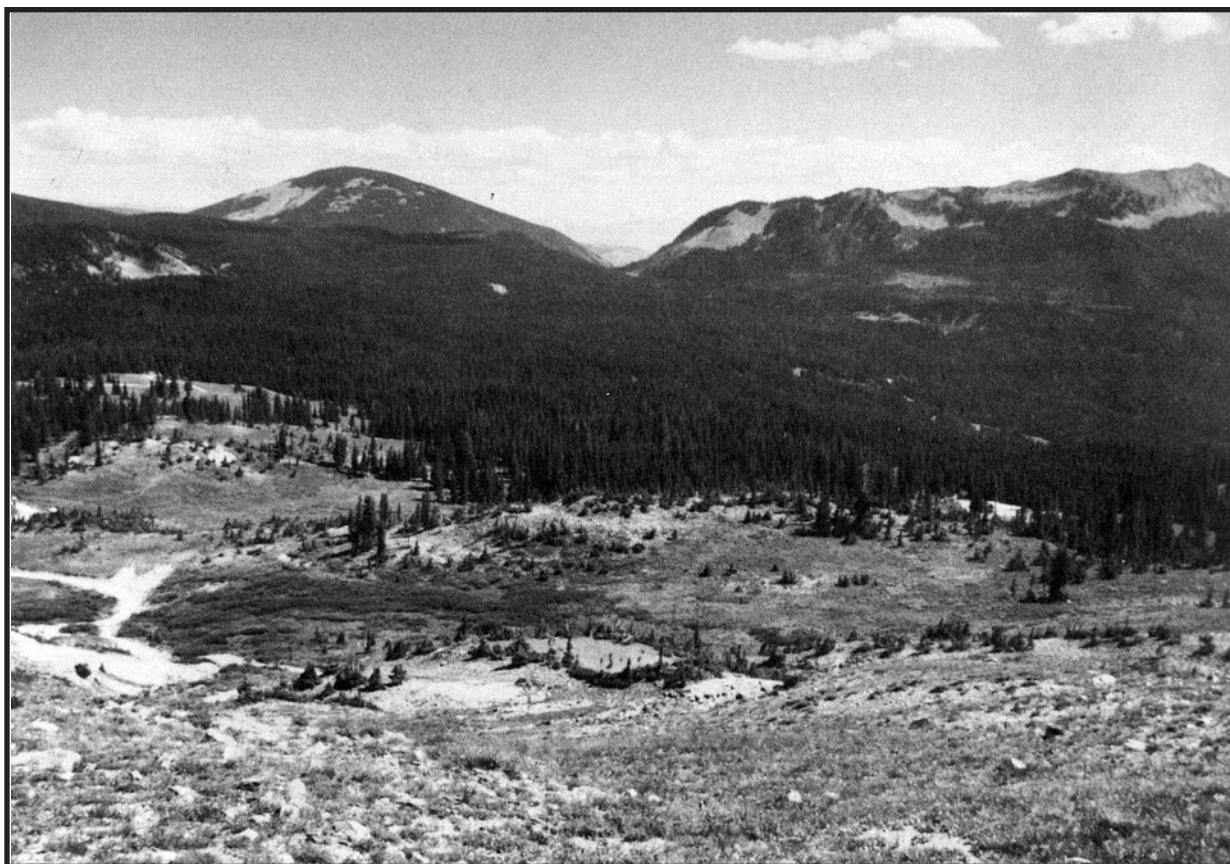


Figure 28. — Looking down the Ruby Peak avalanche path toward the Ruby Chief and Bullion King Mines. The Ruby Chief Mine is located just left of the road along the left side of the picture. The Bullion King property is adjacent to the cleared area (light colored spot at the edge of the trees) near the right margin of the picture. Figure 27 was taken from the mine, on the small ridge just above the road, in the middle distance near the left margin of this photo. There is strong evidence of avalanche activity at that spot and along the opening in the trees that extends another 600 feet to the right. This photo was taken in August 1981.

Crushed Like Eggshells.

“The slide started from Ruby Peaks, a mile and a half away, and gathered snow as it traveled, and when it reached Mr. Ropell’s house it struck with such force that the structure was crushed like an eggshell and scattered hundreds of feet down the mountain. The same happened with the big boarding house. The shaft house was a little out of the track and was but little damaged. The miners were all in the shaft house, having just finished dinner. Mr. Ropell had also just gone from his house to the shaft house. Had the slide been ten minutes sooner there would not have been one left to tell the tale....

Later

"News has just been received that Mrs. Ropell's body has been found. Life was crushed out in the snow. The remains will be brought here to night and shipped to Denver to-morrow or next day. The baby was also found and search is still kept up for the others."

[Wolle (1967, p. 211) says four people were killed at the Bullion King Mine near Irwin in 1911 by a snow slide. It is not clear if this is another accident or, what is more likely, just a mistake in dates.]

[Wallace (1960, p. 71) citing the *Gunnison Tribune* for February 28, 1891 says the child's name was Clark not Ropell as given in the above headline.]

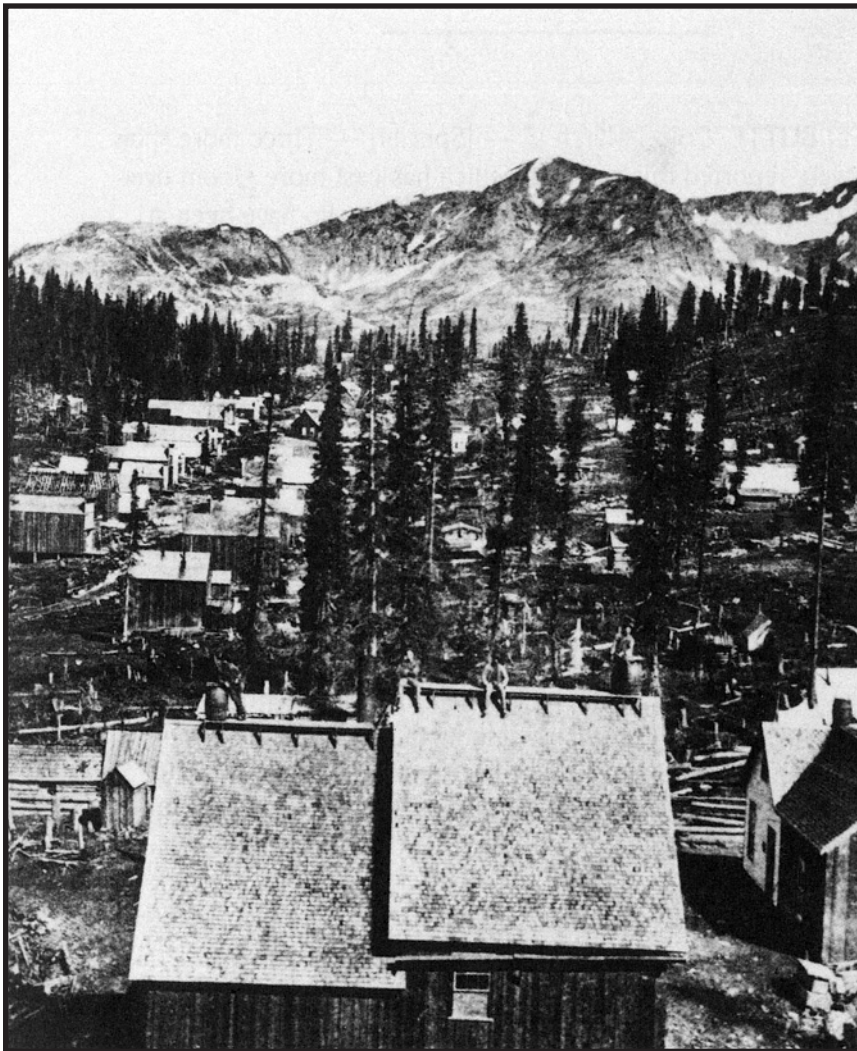


Figure 29. — Irwin with Ruby Peak (12,644 feet elevation) in the background. The avalanche that destroyed the Bullion King Mine in February 1891 probably started just to the right of the summit of Ruby Peak. The building in the foreground was built in 1880. The barrels on the roof were to catch rainwater which could be dumped on the roof in case of fire, which was a serious threat to all the old mining towns (Borneman 1975) (Denver Public Library, Western History Department Collection).

153. *The Denver Republican*, Saturday, March 14, 1891 (p. 1, c. 3)

THREE MINERS KILLED

Carried to Their Death by a Monster Snow Slide Near
Crested Butte.

NO TRACE OF THE MISSING MEN

The Cabin Found Crushed in by the Avalanche, which was Half a Mile
Wide and Filled the Basin to the Depth of One Hundred Feet—
The Men Probably Caught while Endeavoring to Leave the Place
—No Hope of Finding the Bodies until Spring.

“CRESTED BUTTE, Colo., March 13 — [Special] — Three more snow slide victims were reported this morning, which has cast more gloom over our town. M.G. Creller, Pat Murphy and Jack Griffen, who have been at work on the Jacob Straeder Mine, are buried beneath the snow and we do not know how long they have been dead or where to go to hunt their bodies. The slide is over half a mile wide, and it would seem that the whole mountain has come down, filling the basin with snow probably 100 feet deep.

A Dangerous Place.

“The place has been considered very dangerous. So much so that since the storm no one has dared to venture up there until yesterday, when S.C. Robinson, Scott McCullough and Scott Humason went up to see if their fellow-miners were safe. They found no signs of a cabin and the tunnel entrance entirely covered. By tunneling through the snow for thirty feet they came to the cabin, which was mashed in by the snow. The blankets were all tied up and no snow-shoes could be found and it is the general supposition that the poor fellows had become alarmed and started to leave, being caught in their attempt to escape.

No Trace of the Men.

“An entrance to the tunnel and into the mine was made, but no sign of living or dead could be found....

The Straeder Mine.

"The Jacob Straeder Mine...is situated high up on the western slope of Baxter Basin or Poverty Gulch, in close proximity to the Augusta, Excelsior and other valuable mines...[The bodies were not recovered]."

[See account 166X for other avalanches at the Augusta Mine.]

153X. *Early Days on the Eagle* (Knight and Hammock 1965, p. 15)

Author H. Fulford of Red Cliff was killed by a snow slide on New Years Day 1892 on West Lake Creek near New York Mountain. His body was never found. Knight and Hammock visited the site and thought it a likely place for an avalanche. Eberhart 1974, p. 169 and 183, and Wolle 1949, p. 258 also mention this accident briefly. [No newspaper account was found.]

154. *Leadville Herald Democrat*, Saturday, February 11, 1893

THE WHITE DEATH

Two Men Are Buried Beneath an Avalanche Not Far From Leadville.

The Crew of a Rotary on the South Park Meet with a Terrible Fate

Colorado Calamities.

Fatal Snow Slide on the South Park.

"Frisco, Colo., Feb. 10 — A snow slide struck a Union Pacific snowplow and two engines at this place at 8 o'clock this morning, and instantly killed Engineer Lynch and Fireman Smith, and seriously injured Engineers Boynton and McGreevey and Brakeman Hawkins. A mountain of snow covered the unfortunate men, and it took several hours to dig out the dead and injured.

Details Of the Disaster.

"Frisco, Feb. 10 — [Special] — The terrible accident which occurred near here at 9:15 o'clock this morning has caused intense excitement. The accident occurred about half a mile west of Frisco, and not far from Dickey, about thirty-one miles from Leadville....The rotary [plow and engine 263] had been ordered out in the morning to keep the track clear, and were standing on the track steaming up....Suddenly, the men realized that an avalanche was upon them. An effort was made to escape from the impending danger...but it was too late....

"When those who escaped alive were able to realize what had occurred, an awful sight met their gaze. The rotary had been knocked off the track and was a total wreck. Engine 263 was knocked off the side, and is covered with snow, while beneath a mass of snow and rock 150 feet long and ten feet deep were the bodies of Lynch, the engineer, and J.B. Smith, the fireman of the rotary. Roan, fireman for engine 263, had his nose broken, head bruised, but not seriously, while William Boynton, engineer of engine 263, is badly sprained and has a bruised ankle....

"Between Crested Butte and Ruby [sometimes called Ruby-Irwin] another slide occurred, and two Italian laborers are said to be covered in it. The passenger train from Monarch to Salida due at 3:45 p.m. yesterday, has not yet arrived and its location is not known. The snow is very deep on this road and the train is undoubtedly blockaded.

"Aspen reports heavy drifting snows and trains delayed. In fact, most of the mountain roads are busy fighting the snow."

155. *Georgetown Courier*, Saturday, February 27, 1897

Snow Slides

"The heavy fall of snow last week caused an unusual number of snow slides and a number of lives were lost.

"A number of slides occurred near Aspen, in one of which Charles Sweeney lost his life. He was engaged in wheeling rock from the Baine Tunnel when the snow slide came down and caught him. He was found 50 feet down the mountain under eight feet of snow. The body was standing upright. His back had been broke...

"The Rio Grande road was blockaded for several days at a number of places. One snow slide near Glenwood Springs was over 400 feet long, 250 feet wide and over 40 feet deep. Another was 1500 feet long and about 50 feet deep...

"Half a dozen distinct snow slides covered the railroad between Red Cliff and Tennessee Pass, ranging in length from less than 100 feet to a quarter of a mile. One covered the track for a quarter of a mile with from 2 to 15 feet of snow, boulders, dirt, and timber..."

"A snow slide near Pitkin carried away the cabin of Martin Mentley, killing him and injuring several others."...

156. *Summit County Journal*, Saturday, January 28, 1899

Caught in a Snow Slide

"Word was received in this city yesterday of the death of John Knodel, a miner, who was caught in a snow slide near Kokomo last Friday and instantly killed. The victim made frantic efforts to escape, but the mass of snow soon overtook him. His body was recovered yesterday and will be shipped to Denver today."...

157. *Georgetown Courier*, Saturday, February 4, 1899

Storm Casualties

"The cabin of William Rudolph at Apex, Gilpin County, was carried away by a snow slide last Sunday, and Mrs. Rudolph and two children were crushed to death. Another child escaped with injuries. Mr. Rudolph witnessed the destruction of his home from a distance and gathered a force of men who soon uncovered the cabin.

[This account is tallied in Tables 3 and 5. Another account is in the *Rocky Mountain News*, Tuesday, January 31, 1899 (p. 1, c. 1).]

"A large snow slide near Kokomo on Sunday destroyed the buildings and machinery on the Selma Mine. Another slide buried the mouth of the Wichita Tunnel under 100 feet of snow.

"Several slides have occurred at Red Cliff. A party of men engaged in opening a road through the snow were overtaken and buried by an avalanche, but no one was injured and they extracted themselves.

"Two freight trains were abandoned on the South Park road, and it is supposed they were buried out of sight....

"Two thousand men are shoveling snow on the roads at Leadville. No trains can get through and coal famine is imminent.

"Two boys with a string of seventeen horses, en route from Independence to Aspen for provisions, were overtaken by a snow slide. The boys escaped with one horse, the others being carried away by the snow and killed.

"A passenger train plunged into a snow slide between Basalt and Aspen and it took a force of fifty men to dig it out.

"At Breckenridge the snow is over eight feet deep on the level.

"A [Rio Grande] passenger train ran full tilt into a snow slide nine miles from Glenwood Springs Wednesday night. The tender, baggage, and mail car telescoped, and two men were injured. A wrecking train was engaged Thursday in clearing the road near the wreck, when it was struck and buried under a slide with forty men, three of whom were killed, four injured, and the remainder dug out alive by a gang sent to their rescue [I57B]. One of the workmen was thrown into the air by the slide and landed in the Eagle [Colorado] River, from which he escaped. [According to account I57B three men were thrown into the river by the avalanche. All swam ashore uninjured.]"

[This large storm at the end of January 1899 also collapsed one of the snowsheds on the Colorado Midland Railroad between Leadville and Hagerman Tunnel, trapping a cattle train; blocked the Rio Grande narrow gauge over Marshall pass; caused some snow problems on Tennessee Pass; and put slides and drifts across the Colorado Midland Tracks in the Frying Pan Canyon east of Basalt (Cafky 1965, p. 88).]

[For a more complete account of this severe storm which hit the eastern plains of Colorado as well as all the mountainous areas see *Rocky Mountain News*, February 2, 1899.]

157A. *Rocky Mountain Daily News*, Friday, February 3, 1899

INSTANTLY KILLED IN A SNOW SLIDE

William Manning Swept to Death at Twin Lakes— Passengers Emerge from the Blockade

Special to the *News*.

"LEADVILLE, Colo., Feb. 2 — William Manning was instantly killed in his cabin at the foot of Mount Elbert [actually it was at the foot of Parry Peak, 3 miles southeast of Mount Elbert] on Wednesday afternoon by a snow slide. His remains were brought to Leadville this afternoon by

Constable J.T. Low and O.V. Booco and delivered to Coroner Nelson. The slide which caused the death of Manning came near wiping out the entire town of Twin Lakes, but fortunately stopped on the edge of the village without doing other damage.

"Manning was a cook employed by Mr. Booco at his prospect on Mount Elbert, two miles from Twin Lakes and in plain view of the town. A few days ago the owner of the property and all his employees except Manning left the mine building and went to town in order to escape the threatening snow slide. Manning refused to go, saying he did not see any danger and that he would prefer to remain at the cabin than make the two mile walk down through the deep snow.

"The people of Twin Lakes on Wednesday afternoon heard the rumbling of the snow slide and saw it come down the hill and strike the cabin. The moving slide was fully two miles in length and over three miles in width and carried everything before it (Fig. 39). The Boose cabins were no more than houses of cards before such a mass of snow, timbers and rock. As soon as the danger was over a rescue party left the town and went up the hill to dig out the imprisoned Manning. It was hours before they reached the body and then it was found that he had been instantly killed by the slide. [See also 128 and 182.]

"The friends of John Erickson are very much alarmed about him. On Sunday morning he left the home of his sister Mrs. Erickson at 130 South Toledo Avenue with a rifle. He has not been seen since that, and it is very much feared that he has fallen down some abandoned shaft or become buried in a snowdrift....

"By the arrival in this city this morning of twenty-five passengers it was found that the Colorado Midland had had since last Friday night a passenger train slidebound near Busk, nine miles west of this city. This has been repeatedly denied by the railroad officials at this end, but the delayed passengers are themselves the best evidence that for nearly a week a westbound train had been hemmed in by snowbanks on either side....

"The snow slide that blocked the road and prevented the train going past was encountered four miles up Hagerman Hill. After trying to get through it was decided to run the train back to Leadville. They had gone but a short distance beyond Busk on the return trip before a slide in that direction was discovered, making it impossible for the train to proceed either way."...

157B. *Rocky Mountain Daily News*, Friday, February 3, 1899

FORTY MEN BURIED UNDER A SLIDE

Wrecking Train Swept into the River at Shoshone
and Three Men Killed—Many may have Perished at Other Points

“A snow slide at Shoshone, nine miles from Glenwood
Springs, swept a Rio Grande wrecking train into the river.
Three lives were lost....”

Killed:

JOHN McMAHON, roadmaster, Glenwood Springs.

J. DEMPSEY, section man, Spruce Creek, Colo.

J. MULVAHILL, section man, Red Cliff.

Injured:

Charles Heskitt, engineer, Grand Junction; head and back
injured.

T. H. Carr, fireman, Grand Junction; head injured.

R. B. Steele, engineer, Grand Junction; head hurt.

A. Diver, brakeman, Grand Junction; back hurt.

G. H. Berry, car-repairer, Minturn; head hurt.

B. Bernard, section man, Gypsum; internally injured.

All Denver and Rio Grande employees.

Special to the *News*.

“GLENWOOD SPRINGS, Colo., Feb. 2 — Today, shortly after noon, a snow slide, dealing death in its path, came down the mountain side near Shoshone Station, on the Denver and Rio Grande Railroad, and within less than a dozen feet from the wreck of the passenger train (No. 1) and crushed out three lives.

“The slide was of enormous dimensions, being 400 feet long and running from seven to ten feet in depth. A large number of men were at Shoshone clearing the track on which the wrecking train was endeavoring to remove the mail and baggage cars wrecked last evening.

"In less time than it takes to relate it the snow, rocks, timber and trees were upon them, covering about forty of the forty-eight men engaged at work...

Men In Charge Of McMahon.

"The gang of men imprisoned by the slide were under the direction of John McMahon, the roadmaster of the railroad on this division. On the track was the engine and wrecking cars. The engine was in charge of Engineer Heskitt and his fireman, A. W. Shade. The mass of snow was hurled with enormous force against the engine, throwing it from the track and overturning it, burying Heskitt and his fireman. The wrecking car was picked up as if it was constructed of paper, thrown from the track to the bank of the Grand River [Colorado River], and most completely destroyed.

"Heskitt and Shade were soon released from their imprisonment, the former without much injury except a few scratches, and the latter with his hip and leg badly burned. In the caboose of the wrecking train was Engineer Steele of the Rio Grande road, who was injured by his hands coming in contact with the stove. All of those injured were promptly relieved by Drs. Dean and Crook.

Digging Out the Men.

"...The body of McMahon was reached later. The dead section men are John Dempsey and John Mulvahill.

"The bodies of these men were brought to Glenwood and taken to the morgue. The local agent of the railroad, Mr. E.L. Gamble, had an exceedingly narrow escape from being buried in the debris, being engulfed to his face and was pulled out of his predicament by two of those who were in his immediate vicinity...

[Heskitt's, fireman was given as T.H. Carr in the headlines but as A.W. Shade in the article. Other discrepancies between the headlines and the article as to names and types of injuries could not be resolved.]

Brothers' Narrow Escape.

"Perhaps the most remarkable escape from instant death of any that occurred in this dreadful disaster was that of two Italian laborers, Ralph Cupelli and Louis Cupelli, brothers, from 30 to 35 years of age....At the time of the slide they were engaged with many others in clearing the track, and were about fifty feet from the river bank, which at this point is quite narrow and deep from the closing in of the canon, and the water rushes along with the velocity of a torrent. They failed to notice that anything wrong was occurring until the great body of snow, pressed to the solidity of an ice floe, interspersed with logs, trees, brush and huge boulders picked up in its track down the mountain side, caught them unaware and carried them over the intervening space and hurled them into the middle of the river.

"With the exception of being badly frightened, neither received the slightest injury, and were enabled to swim ashore and succeeded in getting aboard the caboose of the train, which was about starting for Glenwood for assistance....A third person was thrown into the river with the Cupelli's but his name was unknown to them. He escaped in the same manner, but was unable to reach the train [going to Glenwood]....

"The slide of today was undoubtedly occasioned by the horrendous snowstorm of last night and this morning. It was the heaviest experienced here since the winter of 1862, the fall here being fully sixteen inches on the level. The temperature was very mild, no wind blowing, and the snow being wet and heavy and packing solidly as it fell."

157X. *Denver Evening Post*, Tuesday, February 21, 1899 (p. 7)

"A snow slide at Shoshone blocked the westbound Rio Grande night train from Denver. This is the same place where the February 2 slide had run [157B]. For a distance of 700 to 800 feet the snow bank is forty feet tall on the lower side of the track and the sides of the cars scrape both walls as the train goes through the cut in the avalanche debris."



Figure 30. — The town of Tomichi as it appeared in the 1880's. The Magna Charta Mine was to the right of the buildings shown here. The avalanches that hit the mine in 1884 [122] and the town and the mine buildings in 1899, [158] ran down this shoulder of Granite Mountain. (Photo from Crofutt, 1885, P. 228)

158. *Rocky Mountain Daily News*, Saturday, March 4, 1899 (p. 2, c. 5)

SWEPT TO THEIR DEATH

Frightful Destruction by A Giant Snow Slide at Tomichi.

Boarding House and Mine Buildings Demolished
by the Avalanche.

Miners of White Pine and North Star Hurry to the
Rescue, but Recover Only the Bodies of Victims
—Valuable Machinery Destroyed.

Special to the *News*.

"SARGENT, Colo., March 3 — About 9 o'clock yesterday morning a snow slide came down off Granite Mountain at Tomichi, a mining town fourteen miles north of here and about two miles from White Pine, burying M. C. Smith, Mrs. Atta Stout and Mr. and Mrs. Sweezy and their two children.

"A messenger on snowshoes started immediately for White Pine. As soon as news was received at White Pine every available man in town started for the scene of the slide.

"At 4 o'clock yesterday evening M.C. Smith and one of the Sweezy children were taken out alive. They are only slightly bruised and will recover. The rescuing party also found the dead bodies of Mrs. Sweezy and Mrs. Atta Stout. Mr. Sweezy and the other child had not been rescued at the last report from the rescuing party at 9 o'clock this morning.

"The house, a two-story building, in which M.C. Smith and Mrs. Atta Stout were living, is located about 100 feet up the side of the mountain on the opposite side of the canon from which the slide came down, and was completely demolished.

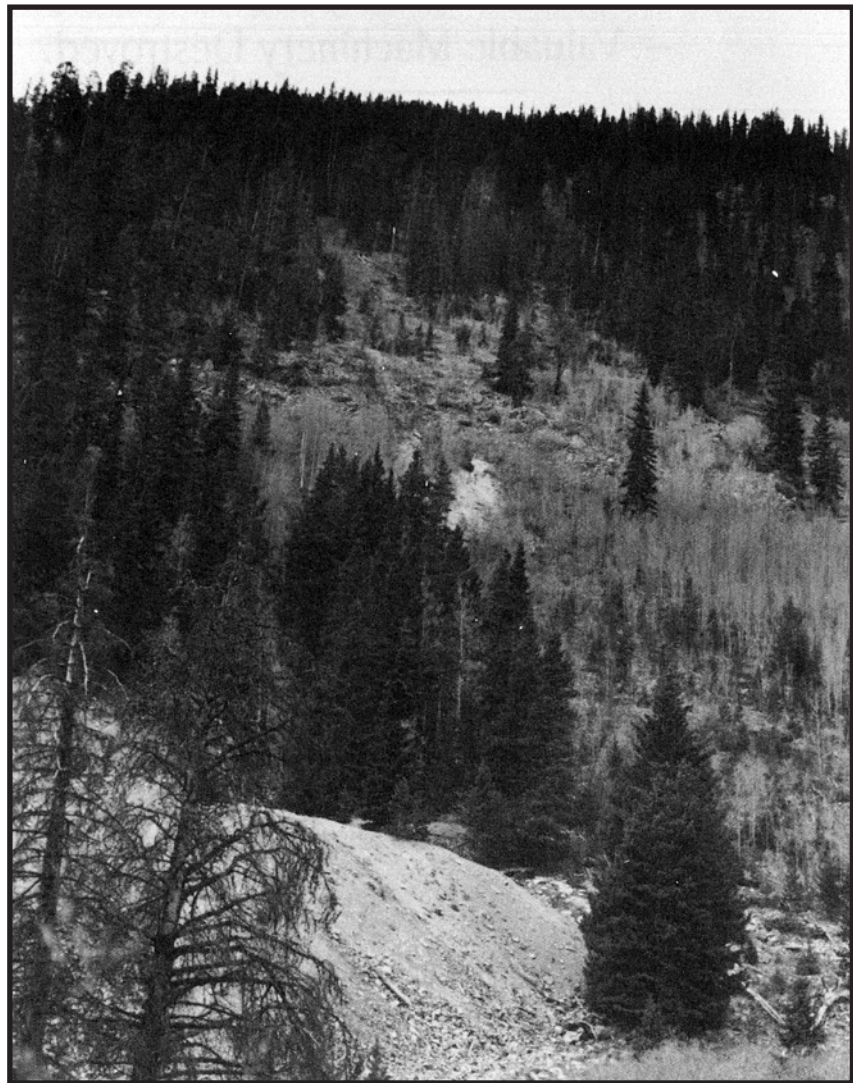
"It is estimated that the snow slide is over 200 feet deep in the canon. The Sweezy child that is still in the slide is supposed to be in the deepest part of the slide. M.C. Smith was eating breakfast when the slide struck the house, and he was crushed down over the table and remained in that position until taken out. He attracted the rescuing party to him by knocking on the table with his hands. Only for his doing this it is claimed he would not have been found alive."

[Florin (1971, p. 72-74) says this slide also hit the Magna Charta Mine buildings and a number of cabins. He lists the dead as the mother of M. C. Smith, Mrs. Sweezy, Mr. Sweezy, and a Sweezy boy. Perry Sweezy, 8 years old, and M.C. Young were rescued alive. The Magna Charta Mine never reopened after this accident.]

[Vandenbusche (1980, p. 404) reports Mr. Sweezy and his 12-year-old son were carried 200 yards by the avalanche and buried. Their bodies were recovered in the spring. In this account Mrs. Stout's first name is given as Alta. Another account in the *Gunnison News*, Friday, March 3, 1899 (p. 1, c. 1), also gives Mrs. Stout's name as Alta. See also 122 and 123.]

[Another contemporary account of this accident appeared in the *Gunnison Tribune*, March 10, 1899.]

Figure 31. — Avalanche path on the southeast flank of Granite Mountain and the dump of the Magna Charta Mine near the old mining town of Tomichi as they appeared in June 1981. The avalanches that hit the Magna Charta Mine buildings as reported in accounts 122 and 158 are thought to have come down this path.



158A. *Gunnison News*, Friday, March 10, 1899 (p. 3, c. 3)

"Mike Smith, one of the rescued parties of the Tomichi snow slide of last week, is in town today. Mike and the eight-year-old son of Mr. Sweezy were the only two that escaped alive. The boy was uninjured but Mike is somewhat crippled up. The bodies of Mrs. Stout and Mrs. Sweezy have been recovered but Mr. Sweezy and his fourteen-year-old son yet remain under the snow."

158X. *Denver Evening Post*, Friday, March 10, 1899

"A snow slide at Winfield, fourteen miles from Granite, swept over many homes. It completely wrecked John Payne's home. The six year old Payne boy was killed. The father, mother and two other children were injured. [See also 170.]

158Y. *Denver Evening Post*, Saturday, March 25, 1899 (p. 2)

"A snow slide blocked the railroad tracks at Shoshone. The cut in the avalanche debris from previous slides is filled for half a mile and part of the track has been carried away. This is the fourth large avalanche that has run at this spot since January [157B and 157X]. Marshall Pass is open after being blocked for thirty hours."

159. *Summit County Journal*, Saturday, December 23, 1899

A Narrow Escape

"On Wednesday, the 13th inst., Henry Recen, of Frisco, attempted to climb the side of a mountain in Ten Mile Canon. When near the crest, a large snow-slide, about 200 feet wide, started furiously down the mountain, gathering Mr. Recen in its mission of destruction, and, after rolling and tumbling him to the valley, left him under two feet of hard snow. After the lapse of about half an hour, by wriggling and pawing, he managed to work one arm to the surface, and through the hole thus made he inhaled fresh air to strengthen him for a final struggle for life. After several heroic efforts he reached the surface and saved himself from an icy grave, only slightly injured. He narrates a thrilling story of his eventful experience, and says that, had he been buried one foot deeper, his strength would have given out ere he could have extricated himself." [See 193 for the account of an accident involving Henry's brother, Rob Recen.]

159X. *Denver, South Park & Pacific* (Poor 1976, p. 367)

"February 5, 1900 two trains going up Ten Mile Canyon were stopped by snow below Kokomo. The trains started to back down toward Dickey. About one half mile above Curtin, the passenger cars on the "lead" train ran about forty feet up on the snow of an avalanche. The coaches stayed upright but were ten feet above the rails. It took ten days to get the train free of the snow."

160. *Summit County Journal*, Saturday, February 17, 1900

COLORADO NOTES

"Ernest Wendland was killed in a snow slide near Leadville on the 7th."

160X. *Ghost Towns of Colorado Rockies*, Brown 1968, p. 96

"February 1900. The noon train was caught in a snow slide in Slate Creek Canyon four miles below Crested Butte. Seven cars were reduced to matchsticks."

161. *Summit County Journal*, Saturday, March 3, 1900

"A dispatch from Aspen says: News was received here Tuesday night that Harry Wyse, Ed. Robinson and Tom McDermitt, miners, working at the Enterprise group, in the Taylor River country, were buried in a snow slide two or three days ago, and their bodies were dug out yesterday by friends who had missed them. The remains are being brought over the range to Aspen. The scene of the accident is some twenty-five or thirty miles from this place, and there is no telegraphic communication with that place. All three of the men were old-timers here and were unmarried. In the same section and at about the same time James Bickford was caught in a snow slide and killed."

162. *Summit County Journal*, Saturday, April 7, 1900

Snow Slide

"From Tuesday evening till Thursday morning a heavy snow fell without intermission, causing several snow slides in the Ten Mile Canon. One of these slides, at Uneva Lake, is said to be three hundred feet wide and from

ten to fifteen feet deep. This of course delayed railroad traffic over the Colorado & Southern in that district. Not since Tuesday has there been a train through between Dickey and Leadville, on that line. The storm did not interfere with the operation of trains between Dillon and Denver. It is reported that the trains will pass through today or tomorrow. The Rio Grande between Dillon and Leadville did not suffer delay."

163. *Summit County Journal*, Saturday, April 21, 1900

COLORADO NOTES

"Word was received at Leadville late Wednesday night that a snow slide had occurred in Iowa Gulch, near the Ready Cash Mine. A number of buildings were carried away and, it is believed that one or two men have been buried in the slide, although nothing definite could be learned in regard to the matter. As soon as word was received a rescuing party left for the scene."

163A. *Summit County Journal*, Saturday, April 28, 1900

COLORADO NOTES

"Sam Kibler, a blacksmith working in the Ready Cash Mine, near Leadville, nearly lost his life in a snow slide last week. After being buried eighteen hours he was rescued, and none too soon to save his life."

164. *Summit County Journal*, Saturday, May 4, 1901

"Game Warden Harris recently received a letter from W. C. Gove, of Creede, stating that seven mountain sheep were recently killed by a snow slide near Amethyst, Colorado. The heads are said to be intact and will be preserved by the state."

165. *Rocky Mountain News*, Sunday, February 2, 1902

Death in Avalanche of Snow

I. G. [James G.] Fish of Montezuma Killed by Snow Slide
on Boulder Peak—His Companion Carried Unhurt
on Crest of Avalanche Down the Mountain

Special to the *News*.

"Dillon, Colo., Feb. 1 — I. G. [James G.] Fish, a mining man whose residence is not known here, was killed at Boulder Peak, twelve miles north of here, by a snow slide this morning at 8:30 o'clock.

"Harry Spotts, a boy of 15 years, accompanied him from Dillon. They left yesterday morning and Spotts had a miraculous escape from death in the slide.

"Fish's body has not yet been recovered, but ranch men and miners who live in that vicinity are making every effort towards that end. Young Spotts brought the news of the disaster to town tonight.

"Fish came to Dillon Thursday from Montezuma, where he had been working for the past fifteen days on the Bullion Mine. He was on his way to examine the Ida Alice, on Boulder Creek, which is owned by Joseph Harrigan and Mrs. Spotts, who were negotiating with Fish for the purchase of an interest.

"The accident occurred when Fish and Spotts were digging a trail up the mountain to the mine. Fish had been warned by James H. Ryan not to undertake the trip. Young Spotts was carried on top of the avalanche a distance of several hundred feet without injury. Fish was buried in the snow....The slide was about 500 feet wide and the body of Fish is buried in not less than fifty feet of snow and debris.

165A. *Rocky Mountain News*, Wednesday, February 5, 1902

From Icy Grave

Body of James [I. G.] Fish Dug From Snow Slide on Boulder Peak

Special to the *News*.

"Dillon, Colo. Feb. 5 — The body of James G. [I. G.] Fish, the victim of the snow slide on Boulder peak last Saturday morning was brought to Dillon yesterday....It was necessary to drag Fish's body for two miles over deep snow gorges before the rescuing party could place it on a sled....

[Other accounts of this accident appear in *Summit County Journal* for April 8 and 15, 1902.]

165X. *Denver Post*, Friday, April 3, 1903

Snow Slide Wrecks Train, Injuring 3

"Buena Vista, Colorado, April 3. Denver and Rio Grande Passenger Train No 1 was wrecked by running into a snow slide in Brown's Canon between Buena Vista and Salida last evening. Three members of the train crew were injured, one perhaps fatally. None of the passengers were injured. As a result of the wreck and the blocking of the track by numerous snow slides seven eastbound Rio Grande passenger trains are being held here.

"The Colorado and Southern between Buena Vista and the Alpine Tunnel is filled with slides and the outlook is gloomy.

During the past fort-eight hours two feet of snow fell on the level; in the hills, the precipitation was fully twice that. The wind is drifting the snow badly and every railroad cut is being filled. Snow slides are threatening in all directions."

165Y. *Denver Post*, Monday, February 15, 1904

SWEPT TO DEATH IN SNOW SLIDE

D. D. Moak, well Known Mining man Killed Near Elko Companion had Narrow Escape

"Crested butte, Colorado, February 15. "D. D. Moak, age about 50 years and unmarried, was killed in a snow slide last Thursday [February 11] at the Hard Cash Mine near Elko eighteen miles north of Crested Butte. His companion narrowly escaped death in the avalanche. The body was brought here yesterday afternoon after arduous labor in getting over the mountains safely...

"For twenty years Mr. Moak has mined in this vicinity and he is said to have been possessed of considerable wealth composed of property in Pueblo and mining claims in the Gothic district."

[Elko was in a beautiful park next to Elko Lake (about 1/3 mile west of Schofield Pass) Vandenbusche 1980, p. 252 and at the foot of Galena Mountain. Wolle, 1949, p. 204.]

[The location of the Hard Cash Mine is not known to us. There are two avalanche paths, however, that come off summit 12,307 half a mile southeast of Galena Mountain and run out into Elko Park just west of Elko Lake.]

166. *Leadville Herald Democrat* Friday, February 19, 1904

CAUGHT IN AVALANCHE

Four Loggers on Cattle Creek, Near Aspen, Meet an Awful Death

"Aspen, Feb. 19 — Four men lost their lives in a snow slide near here yesterday but their fate was not known until this afternoon. The dead: Jack Ellis, John Brown, Frank Manning, [and] William Hampton. They were all employed at Osgood's logging camp on Cattle Creek, about four miles south of Aspen....

"The snowfall here has been much below the average and this is the first slide of the season. The slide was {??} feet wide and twenty-two feet deep."

166A. *Denver Post*, Friday, February 19, 1904

UNDER DEEP SNOW

Bodies of Aspen Snow Slide Victims not yet Found

Four Men Lost Their Lives

Rescue Party of 110 Men Left for Castle Creek This Morning to Dig for Remains

"Aspen, Colo., Feb. 19 "One hundred and ten men left Aspen this morning for Osgood's logging camp on Castle Creek (The Leadville Herald Democrat article 166 called this Cattle Creek), five miles south of Aspen, where four log choppers were swept to death in a snow slide yesterday morning.

"The dead men are: William Hampton, John Ellis, John Brown and Frank Manning.

"The slide is from a mile and a quarter to a mile and a half long, thirty feet wide for the entire length and from ten to twenty-five feet deep."

166B. *Denver Post*, Saturday, February 20, 1904 (p. 2)

"Aspen, Colo., Feb. 20 "The body of William Hampton of Aspen, the last of the four victims of Thursdays snow slide up Castle Creek, was found beneath twenty-five feet of snow near the source of the slide at noon today."

[Mears 1979, p. 47, Plate 1 shows numerous large avalanche paths in this part of Castle Creek. The newspaper articles do not give sufficient detail to allow a positive identification, however, Mear's path number seven is over a mile long and has a narrow, confined track.]

166X. *Denver Post*, Wednesday, February 24, 1904

SIX MINERS MEET AWFUL WHITE DEATH

Men from Augusta Mine, Nine Miles from Crested Butte, Caught in Terrible Snow Slide and Killed

"Crested Butte, Colorado, February 24. "Six Miners were swept to death yesterday [February 23] in a snow slide near the Augusta Mine, nine miles northwest of Crested Butte. They are: Peter McQuade, Joseph Ferreri, Peter Sterle, Joseph Slogar, Michael Vidmar and Tony Stenicha.

"The first four named were single men and the last two were married and leave families...only one body has so far been recovered...

"Word of the disaster was brought to Crested Butte this morning by Ira Sigmon and Joseph Voss, who left Augusta Mine last evening.

"Searching Parties...will leave at noon for the scene of the slide.

"The six men carried to their death in the snow and three others had resigned their position at the Augusta Mine. They were on their way to Crested Butte. The slide...was quite wide and very deep...it is improbable that the bodies will soon be recovered.

"Sigmon and Voss...said that yesterday [February 23] was a terrible day for snow slides with many large ones running in all directions, carrying everything before them."

[Wolle 1949, p. 209 said two feet of fresh snow had just fallen and that the three men who were not killed had survived by laying on their snowshoes and riding the crest of the avalanche down the mountain.]

166Y. *Denver, South Park and Pacific* (Poor 1976, p. 380)

"March 14, 1905 a rotary snowplow with three engines and a small train broke down in eighteen feet of snow one quarter of mile east of the Alpine Tunnel. The cars were backed down to St. Elmo and abandoned there.

"March 16, 1905 one half mile from the east end of the Alpine Tunnel and two and one half miles west of Hancock a snow slide, 300 feet long and eighteen feet deep, covered the tracks.

"The last of March 1905 marked the worst series of snow slides in the history of the Colorado Southern Railroad. Trains were blocked by snow for eighteen days at the Alpine Tunnel.



Figure 32. — The Augusta Mine on the left flank of Poverty Gulch as seen from the floor of the gulch. The mine is the light colored spot that appears on the near edge of the bench in the large bowl between Cascade Mountain (left) and Mineral Point (right). The mine is actually located back against the headwall of the basin which is about 0.3 mile from the near edge of the bench. This photo was taken in August 1981.



Figure 33. — The Augusta Mine from the near edge of the bench mentioned in Figure 32. Although the floor of the bench is relatively flat, the slopes above the road leading to the mine are steep and dangerous. This photo was taken in August 1981.

167. *Summit County Journal*, Saturday, January 20, 1906

SNOW SLIDE IN TEN MILE CANON

East Bound Train on South Park Road is Ditched – Miraculous Escape of Train Crew and Passengers

"Again the South Park Branch of the C & S system is in luck. It still holds the belt as being the only American railroad of any length, which, during an uninterrupted service of twenty years, has never killed a passenger. This proves that travel on mountain railroads is less hazardous than on prairie lines.

"Wednesday's Denver-bound train left Leadville as usual, at 9 a. m. Before reaching the summit of Fremont Pass (Climax), it was stalled in a snow drift, and a three hours delay occurred.

"On nearing Uneva Lake Station, in Ten Mile Canon, where the side of the mountain is cut off to make a bed for the track, leaving a steep bank on the upper side, a small slide of snow struck the train and shoved the cars off the track.

"Besides the engine, the train consisted of one combination baggage and passenger car, one combination mail and express car, and one passenger coach. In the latter there were thirteen passengers and the brakeman. The conductor, Tony Schmidt, happened to be temporarily riding in the express car.

"After toppling over, the coach, with its human freight, slid down the mountain for about seventy-five feet. The next car with mail and express, took a 50-foot slide, while the second combination car merely cleared the track. The engine did not leave the track, though the rear trucks of the tender were derailed.

"The volume and impact of the snow were not great, else the entire train and all on board would have been buried or killed. Not a person was seriously injured, though sixteen people traveled with the sliding cars over large boulders and jagged rocks, with red hot stoves turned upside down and the fire spilled out, down the side of the mountain for from fifty to seventy-five feet. Nothing but the wand of good luck which has ever waved over the operations of the South Park, saved some one from meeting serious, if not fatal, injuries."...

168. *Rocky Mountain News*, Wednesday, March 14, 1906

AVALANCHE HITS A FREIGHT TRAIN

Snow Slides are Running Almost Every Hour and
Denver & Rio Grande Branch Blockaded
in Mountains Near Carbondale.

Part of Company Store Torn Away by Descending
Snow, But Employee Remarkably Escapes Death
– Traffic Paralyzed.

Special to the *News*.

"CARBONDALE, Colo., March 13 — Latest advice from Coal Basin says that the slides are still running at the rate of about one an hour, and that the snow is still falling. Coal Basin is in a depression in the Ragged Range, and the mountains are very precipitous. The telegraph wires are down and it is feared that more damage from other slides has occurred. The heavy fall of snow alarmed many of the miners in that section and eighteen of them started out in a coach attached to the freight train that was wrecked four miles from Redstone by being struck by an avalanche.

"One of the passengers says that the coach was knocked completely over....There were twenty passengers in the coach, including a woman and her little baby....The engine of this train was derailed and turned partly around, but did not leave the roadbed. The whole front part of the train was covered with snow....

"All the passengers walked to Redstone last night and came to Carbondale this afternoon.

"The slide that came down at the mine in Coal Basin last night at 10:30 was fully 600 feet wide and came down the mountainside with an awful roar and the velocity of a canon ball. It struck the Colorado Supply Company's store, a two-story frame structure, and swept away part of the bottom part of the store, scattering its contents down the mountainside. The store is built on piles. The slide went under the store, leaving the side next to the bank intact....The slide then struck the fanhouse and pipeline of the mine and five cars of loaded coal were swept away with the slide."...

169. *Summit County Journal*, Saturday, March 17, 1906

SNOW DELAYS C. & S. TRAINS

"The past few days have been extremely mild in this section of the geography. It commenced snowing Wednesday night and continued without interruption till yesterday morning, giving us at least two feet of the beautiful. The snowfall was general throughout the length and breadth of Summit County.

"Several snow slides occurred in the Ten Mile Canon and at the head of the Arkansas on Wednesday and Thursday. On Thursday the stations west of Dickey were not served with mail. Train 71, from Denver, turned at Dillon, and returned as 72. Train 81 was annulled at Denver. Yesterday's Train 71 left here nearly on time, but it will be considerably delayed before reaching Leadville. It was presumed that the road between Dickey and Leadville would be open for traffic some time last night, allowing 72 to make its run to Denver, even though very late."

170. *Leadville Herald Democrat*, Saturday, March 24, 1906

FEARFUL OF SNOW SLIDES

Winfield Safe but Huge Masses of Snow Hang Threateningly Over.

"Buena Vista, March 23 — At Winfield, four miles up Clear Creek Canon, from Vicksburg, the scene of Wednesday's slide, a serious condition exists. North and west the mountains tower above the little camp nearly perpendicular. Snow many feet deep covers them and at their crest a comb of snow and ice hangs ready to start on its death-dealing mission at any moment. The lack of telephone or telegraph lines makes it impossible to reach them for news and much apprehension is felt for their safety.

"A relief party that went from Granite to the Vicksburg snow slide yesterday has returned. The searchers were unable to find the body of Harry Wisenborn. They went back today to renew the search. It will probably not be known until the coming summer how many perished as five men are missing." [See also I58X]

171. *Leadville Herald Democrat*, Sunday, April 1, 1906

SNOW BOUND ON ALPINE

C. & S. Finally Breaks Blockade, After Terrible Siege on the Pass

"Denver, March 31 — A special to the News from Gunnison says:

"The Colorado and Southern road was opened today between Gunnison and Alpine Pass and Gunnison mail came in for the first time. A rotary and seven engines came into Gunnison today after having been snowbound on Alpine pass during which time the engineers were compelled to remain in their cabs, having no other place to sleep.

"On March 14 a rotary with three engines and a small train left Como, to cut their way through the drifts which were piled high on either side of the pass completely blocking the track. One by one the cars were backed down and abandoned at St. Elmo. A short distance east of Alpine Tunnel the rotary broke down in eighteen feet of snow.

"When word reached Gunnison that the train had been abandoned to its fate in the snow, four more engines carrying five cars of coal were started to the relief of the train, but the relief train also became stalled on a sidetrack west of the tunnel. The five cars of coal were used to make the journey and no effort was made to bring in the delayed trains until today when the road was finally cleared. Provisions were carried to the trainmen by parties who made regular trips each day over the frozen mountains.

"Superintendent {word missing} of the Colorado and Southern, declared today that the siege of snow slides and blockades through which the train crews have passed was the worst in the entire history of the road."

172. *The Salida Mail*, Tuesday, February 5, 1907

MANY LIVES LOST IN SNOW SLIDE
AT MONARCH LAST NIGHT

Bodies Of Seven Have Been Recovered:
FRED R. NASON, WIFE AND TWO CHILDREN,
H. L. McCABE, JACK EMERSON AND
STEVEN SKINNER,
Several Bodies Believed To Remain.

"Monarch mining camp was visited by an awful calamity last night at 9 o'clock, when an avalanche came down without warning and carried death to nearly a dozen people. So great is the excitement that it is impossible to gather reports which are absolutely authentic, but it is known surely that seven bodies have been recovered. These are Fred R. Nason, wife and two children, H. L. McCabe, Jack Emerson and Steve Skinner.

"A telephone call from John Farrell, superintendent for the Vega Company, at 11 o'clock this morning, says that five bodies have been taken out and that two more will probably account for all the dead, which would make the number seven.

"A relief train started over the Monarch Branch from Salida at 1 o'clock this morning...the train was able to proceed only to Garfield, on account of snow, and from here the {relief} party was obliged to walk up through heavy drifts of wet snow....

"There was a thaw and heavy snowfall on Friday, Saturday and Sunday, and experienced mountaineers expected slides to run, but the situation of Monarch is such that it was not thought to be in danger. At 9 o'clock the avalanche struck that part of the camp containing two saloons and boarding house, carrying them and their inmates away and burying them under many feet of snow and debris. Work of rescue began at once, and of the seventeen people known to have been in the destroyer's path several were rescued alive....

"The slide started above and to the north of the Fairplay Mine and came down over the April Fool Group. It missed the Fairplay Mine and Quarry by only 100 feet (Fig. 34).

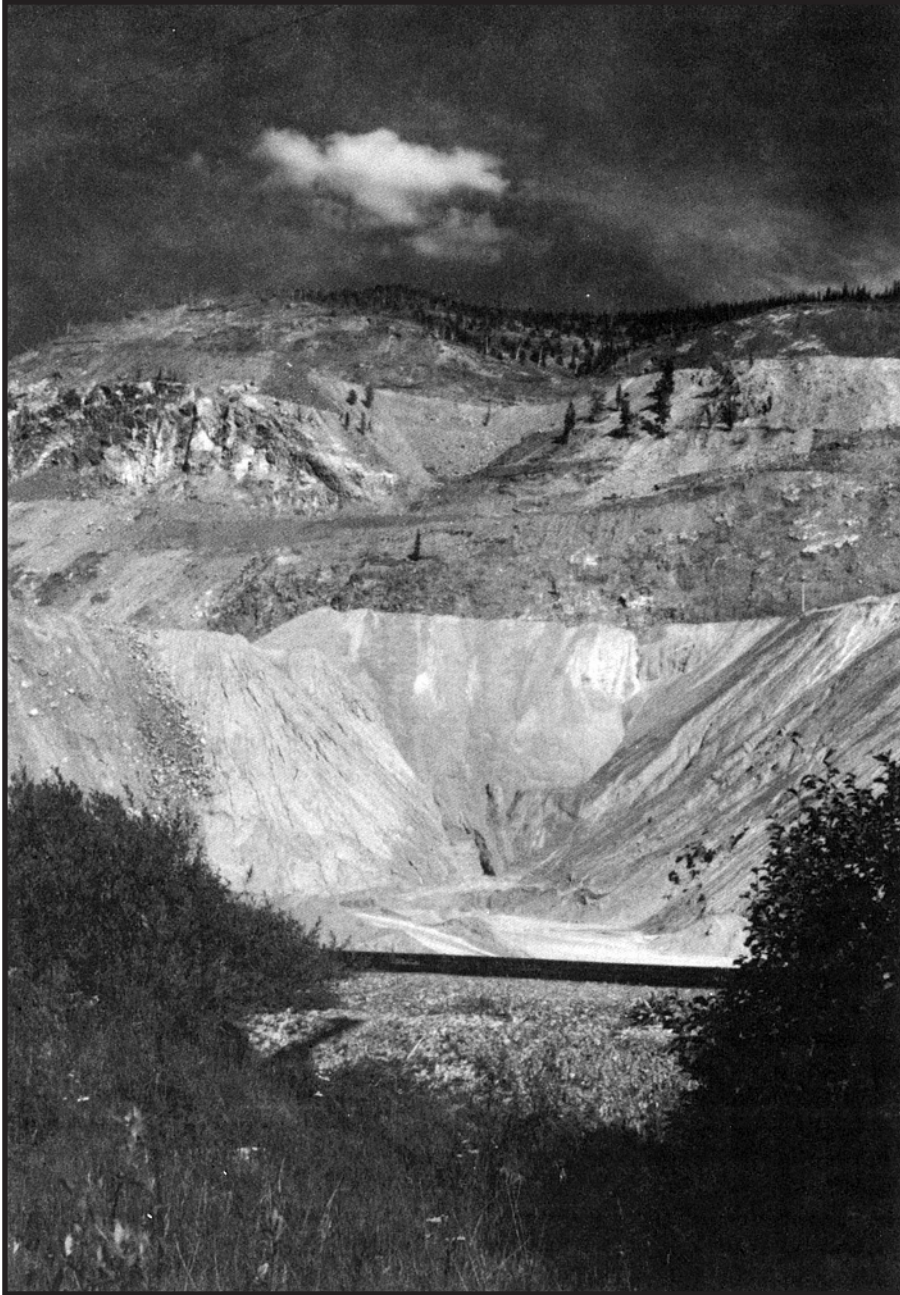


Figure 34. — Snowslide Gulch at Monarch, August 4, 1981. The avalanche that came into Monarch on February 4, 1907, ran down this path. Since then, heavy quarrying has drastically altered the path. The town was located along the railroad in the foreground.

"It has been sixteen years since Monarch has been damaged by slides and the fears which are always present in seasons of heavy snow had been lulled to sleep by the long season of inactivity of the terror of the mountains and the blow fell as a terrible surprise to inhabitants."

172A. *The Rocky Mountain News*, Wednesday, February 6, 1907

BODIES OF SIX DEAD REMOVED; ONE MISSING

Details of Snow Slide at Monarch Only Add to Horror of
Catastrophe Which Destroyed Camp.

SALOON KEEPER FOUND WITH KEG ON HIS CHEST

Rescuers Struggle Bravely with Drifts and
Take out 22 People Alive.

Special to the *News*.

"Salida, Colo., Feb. 5 — Details of the big snow slide at Monarch only add to the horror of the catastrophe. An engine and one coach came in at 6 o'clock tonight with five bodies and it is known that at least one more is still under the snow.

The revised list of the known dead is as follows:

MR. AND MRS. FRED NASON.

JACK EMERSON, son of Superintendent Emerson
of the Madonna Mine.

CHARLES GILLETTE, a miner.

STEVE SKINNER, a saloonkeeper.

JAMES BOYLE of Denver, a miner.

"The body of Nason has not been recovered and some believe that he may be alive. Altogether, twenty-two people were taken out of the snow.

The following persons were rescued alive, several being unconscious:

The six children of Mr. and Mrs. Fred Nason.

Mr. and Mrs. Fred Schrader and four children.

James Smith.

James Lucky [Lecky] and son, William.

John Griffith.

Jesse Smallwood.

The last two were reported dead, but were revived and will recover.

"The slide started at 9:15 last night and made a noise like the roar of cannon....The slide, as it now lies, is 500 feet long, 300 feet wide and fifty feet deep and came 1,000 feet down the mountain.

"The two-story log house, with a saloon on one side, belonging to Steve Skinner, and the boarding and rooming house on the other, conducted by Fred Nason, was completely demolished and carried across the street. There was not even a whole piece of furniture found, even a piano being reduced to kindling. So close did the slide approach the row of houses on the opposite side of the street that logs and rocks were driven through the doors of the Blatchford Hotel (Fig. 35).

"The body of Mrs. Nason was the first discovered and was fearfully bruised and mutilated. The second person taken out was James Smith, who is still alive, but will die, a rib having punctured the lung.

"William Lecky [Lucky] and father, James Lecky, were the next rescued, the latter having been unconscious six hours. When found his feet were firmly pinioned beneath heavy timbers. Five of the Nason children were hurled through the second-story windows and covered with flying snow. They were quickly dug out. The baby of the family, a bright 4-year-old boy, was found uninjured this morning after being buried fourteen hours. He was tucked away under a section of the roof, snugly rolled up in a feather bed.



Figure 35. — Avalanche damage caused by the February 4, 1907, avalanche at Monarch. The flat-roofed building is the Blatchford Hotel mentioned in account 172A (John Ophus Collection, Salida).

"Steve Skinner, owner of the saloon, was found on the floor of his place of business with a keg of beer on his chest. His head was driven through the floor and his skull crushed.

"The rescuers found a white hand protruding from the snow and hurriedly dug out the oldest son of Fred Schrader, who was unconscious and would have suffocated in a short time. The home of Schrader, containing his wife and four children, was completely demolished and the occupants buried, but none was seriously injured, having been carried on the crest of the slide."...

172B. *The Salida Record*, Friday, February 8, 1907

SIX DEAD IN SLIDE

Great Avalanche of Snow Descends on Monarch Monday Bringing with it Death and Destruction.

"The most terrible catastrophe that ever befell Chaffee County occurred in Monarch last Monday night [February 4] when a great snow slide crashed down Monarch hill into the little town, engulfing two houses with their 29 occupants, carrying death and destruction in its path. The slide came at 9:15 and as soon as the population recovered from their paralysis medical aid for the injured was summoned from Salida.

"The slide came down a gulch east of the Madonna Mine and started from a height of about a thousand feet, of course gaining speed at every foot and gathering up all trees and boulders in its path....

The correct list of the dead is as follows:

Mr. and Mrs. Fred Nason.

Jack Emerson, son of Superintendent Emerson of the Madonna Mine.

Steve Skinner, proprietor saloon.

Joe [Joseph] Boyle, of Leadville.

Harry Gillett, of Denver, nephew of Mrs. J. D. Whitehurst, of Salida, and son of Frank Gillett, formerly of Salida.

James Smith, badly injured and will die.

Those who were taken out of the snow, some injured and many unconscious from suffocation, were:

Florence, Margaret, Geneveve, Edna, Lillian and Edward Nason, ages respectively, 19, 15, 11, 8, 6 and 4 years.

Fred Schrader, wife and four children.

James Lecky and 16-year-old son William.

Mr. Griffith, Mr. Cooper and James Smallwood.

Carl Perfect, of Buena Vista....

"In most cases death resulted from suffocation and a number of those now living were so far gone as to be unconscious. Among this number was Miss Florence, the oldest daughter of Mr. and Mrs. Nason. She said that although somewhat injured, her greatest inconvenience was breathing, and her struggles for air were shortly stilled by blissful unconsciousness, and she knew no more until revived by the fresh air. She was under the snow four hours. The younger children were up stairs and thus were covered but a few feet, and were quickly rescued.

"The most miraculous escape was that of baby Edward, who lay under the snow, snugly tucked in bed, for 14 hours when finally dug out. A section of the roof had fallen over him in such a way that snow and rock could not reach him, but was in such a small space that he was overlooked for a long time. He was happy and laughing when taken out, and happily is too young to realize the awful calamity that had taken his natural protectors from him. The rescuing of this babe was a scene that caused many strong men to break down who had withstood the stern duties of taking out dead comrades.

"On the floor of the saloon was found the body of the proprietor, Steve Skinner. It was evident that his death was instantaneous. A full keg of beer was found on his chest, which had evidently been hurled against his head, crushing it through the floor. Brains scattered about furnished mute testimony of sudden death....

"One peculiar instance is related by H. L. McCabe. He says that just before the slide came his dog came to the bed in which he was sleeping and pulled the covers from him, but before he had more than time to wonder at the dog's strange action, the crash came. Did the animal know that a calamity was impending, and try to warn his master?...

"The relief train, that left Salida at 1 o'clock Tuesday morning finally reached Garfield and could go no farther....The new snow was from four to six feet deep in spite of the fact that the road had been kept open. There was a blinding snowstorm raging at the time and the {relief} party had not proceeded far until they realized they had attempted a herculean task....The

slide was finally reached, the party having been on the road between the tank, a mile below Garfield, and Monarch over three hours....

"This is the first slide that has cost life in this vicinity. It is not uncommon for small slides to occur. Indeed, only two days before one occurred at the Madonna Mine, taking out about a 150 feet of the tramway, and another the same day which blocked up the entrance of one of the tunnels (Fig. 36). A force of men was imprisoned here until released from the outside. There have been times in the years gone by when the little camp was completely snowed under, and the residents passed from house to house through snow tunnels, but even then no slides occurred of much magnitude. Old residents have always felt secure from the dreadful terror because they believed the hillsides were not steep enough on either side of the camp to precipitate a slide.

"The slide started just east of the April Fool group of mines near the top of the hill and {ran} across the Paymaster, Ben Bolt, Little Giant, Stem Winder, Cromwell, Camp Bird, Cornelius and Iron Ram. At the foot of the hill the workings of the Fairplay, now operated as a lime quarry (Fig. 41) for the Arkansas Valley { } company, using a valuable plant of machinery, was missed only a few feet. The Rio Grande track, which lies along the base of the hill, is covered to a depth of 50 feet"... (See also [I73A]).

[Other accounts of this accident appear in *Summit County Journal* for February 9 and the *Idaho Springs Mining Gazette* for February 7 where Nason was spelled Mason.]

173. *The Salida Record*, Friday, February 8, 1907

SNOW DEMON CLAIMS ANOTHER VICTIM

Second Slide in the Monarch District Takes
the Buildings of the Eclipse Mine, Instantly
Killing F. Y. Harris, the Superintendent,
who was in the Boarding House.

"A second snow slide crashed down Monarch Mountain Wednesday night and while larger than the first only claimed one victim. F. Y. Harris was instantly killed and Harry Amy, who was in the Eclipse boarding house with him, was caught but managed to extricate himself. The slide was

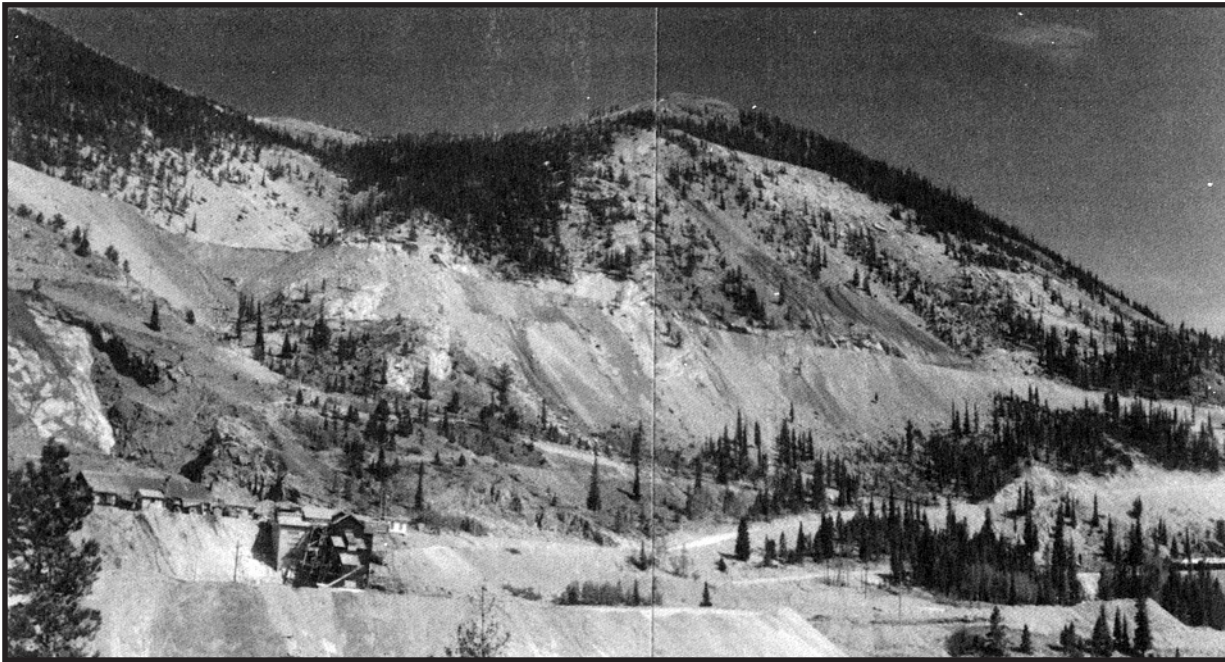


Figure 36. — The Eclipse avalanche path, mine dumps, and roads at Monarch as they appeared in June 1981. The February 6, 1907, avalanche is thought to have released in the saddle of the skyline ridge. The low building in the lower right corner is the Madonna Mine. The large cuts and fills and the huge tailing piles are the result of recent quarry activity. They were not present in 1907.

about a mile above the one of Monday night, but much higher up the hill and destroyed the buildings of the Eclipse Mine (Figs. 36 and 37). No one except the two men were in the building, but the force of five men who had been helping in the rescue work at the slide below were just returning to the mine and if the slide had been delayed five minutes, would have been caught.

“Harry Amy says that he and the superintendent, Mr. Harris, were sitting by the fire talking when they heard the slide coming about 5:30 p.m. Hr. Harris rushed to the door to see what it was and was caught and crushed beyond recognition. He (Amy) retained his seat by the stove and was covered up in the wreckage but was not seriously hurt, digging himself out in a few minutes. It took the rescue party about four hours to recover Harris’ body.”...

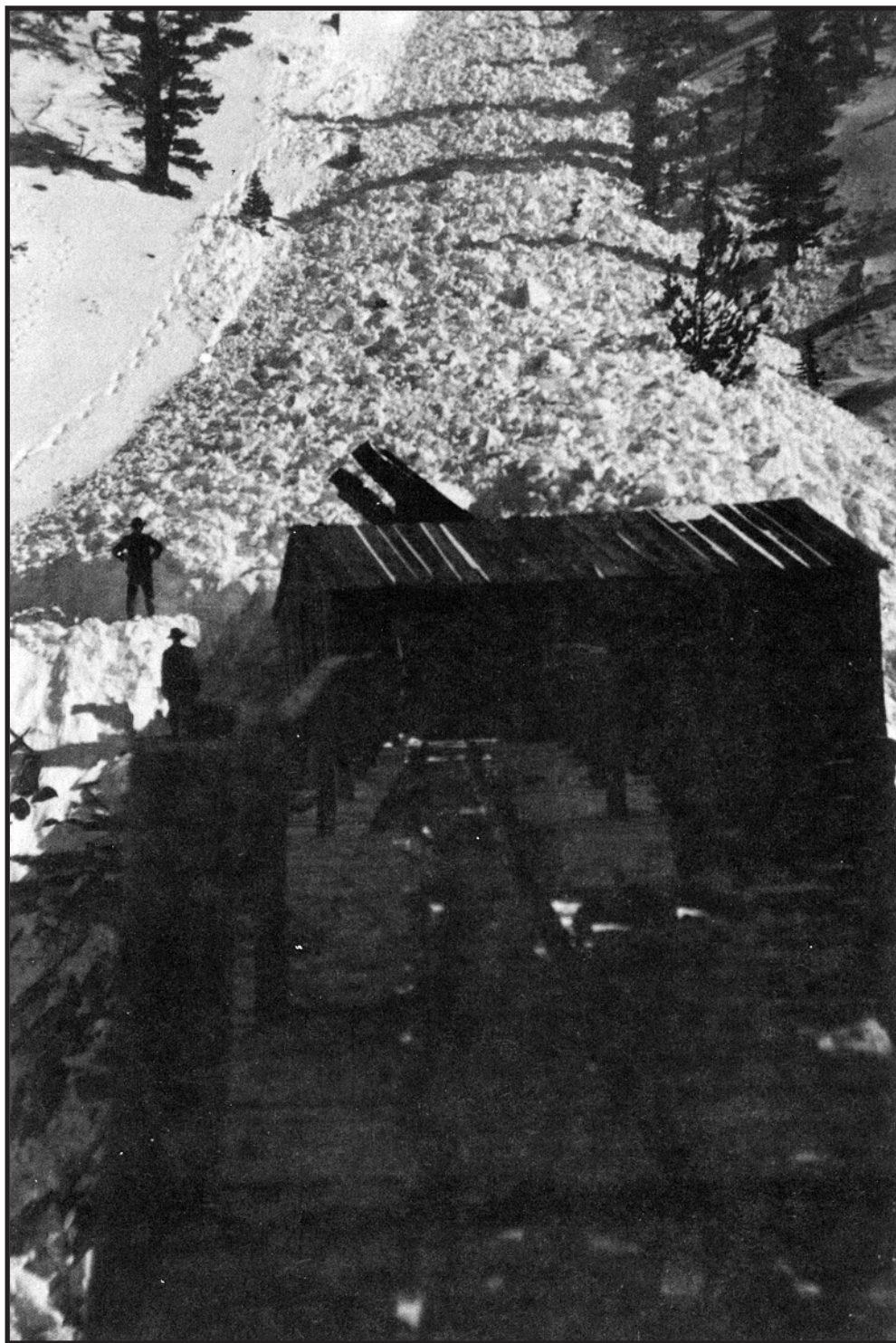


Figure 37. — This is thought to be debris from the February 6, 1907 avalanche at Monarch that hit the boarding house of the Eclipse Mine, killing F. Y. Harris. The building pictured here has been identified as the Number 4 Tunnel of the Eclipse Mine by Mr. George McKeen, a former resident of Monarch (John Ophus Collection, Salida).

173A. *The Salida Mail*, Thursday, February 8, 1907 (p. 1)

GREAT DISASTER AT MONARCH

Not Content With the Tribute of Six Lives on Monday
The Relentless Avalanche Claims Another Victim
in a Slide Which Runs on Wednesday
Within a Mile of the Scene of the Other,
and Before Rescue is Completed.

"FRED L. NASON, age 45 years, death from fractured skull.

"Mrs. FLORENCE NASON, age 45, death from suffocation. The remains of Mr. and Mrs. Nason will be shipped tonight to their old home at Hammond, Indiana.

"S. J. EMERSON, age 19 years, 4 months, death from suffocation, home in Leadville where the body has been taken for burial.

"JOSEPH BOYLE, age 20 years, 3 months, remains taken to Leadville for interment by his brother.

"STEVE SKINNER, age 59 years, fractured skull, remains sent to Burlington, Iowa.

"HARRY GILLETTE, age 20 years, 4 months, remains sent to Denver to his mother, Mrs. Frank Gillette.

"FRANCIS YORK HARRIS, age 29 years, {?} months, met death in the slide at the Eclipse Mine on Wednesday, remains taken home to Florence for burial.

"Monarch, one of the thriftiest little mining camps in this section of the state, is to-day almost deserted and the few who yet remain since the deviating snow slide of Monday night are constantly confronted with the wrecked homes and knowledge of death's icy hand having claimed several of the best known and most highly respected citizens, and of the serious injuries sustained by at least eight or ten others....

"This slide was on the opposite side of the mountain and was observed from Monarch. There were four men, who heard and saw the monster approaching. One ran toward the tunnel and was caught within a few feet of safety, buried under tons of snow. This was Frank Y. Harris. His body was

brought down to Salida yesterday and prepared for burial at Florence where he leaves a wife and two children. The other victims of the accident were rescued alive and unhurt....

"On the score of persons within the wrecked buildings of the [February 4 avalanche] several received severe injuries, but only one of these who was rescued alive was dangerously injured. This is James Smith, who was caught between timbers and his ribs crushed in so that his lungs were punctured. It was at first believed he could not live, but now he has a fair chance for recovery....A pathetic incident was the discovery of the little 3 year old Nason child after eleven hours under twelve feet of snow. It was lying on a feather bed unharmed. A portion of the roof had fallen to protect the child, which smiled when picked up by rescuers. This discovery put heart into the workers in their search, which finally resulted in the {recovery} of the body of Fred Nason" [I72 and I72A]....

174. *Rocky Mountain News*, Wednesday, February 6, 1907 (p. 10)

NINE SNOW SLIDES BLOCKADE ROADS NEAR COMO

Heavy Storms Tie Up Trains and Plows Prove to be Without Effect.

Special to the *News*.

"BRECKENRIDGE, Colo., Feb. 5 — The South Park Branch of the Colorado & Southern Railroad is practically snowbound from Como out. The Gunnison, or Alpine Tunnel, Branch is blocked with snow, and it is understood that no attempts will be made to open it until the main line to Leadville is open again.

"The passenger train which left Denver this morning got stuck in a snowbank on the east slope of Boreas Pass, between snowsheds Nos. 9 and 10, and was forced to return to Como for the night. The rotary snowplow is still at work on the big snow slide near the King Solomon tunnel near Mile Post 120 on the C & S Railroad in Ten Mile Canon. Telephone messages state that it will take the plow all day tomorrow to get through the slide, with a good prospect of encountering other slides before reaching Kokomo.

"The Ten Mile Canon is noted for its numerous snow slides. Word has been received here that there are nine slides from 40 to 200 feet or more in width between Climax Station and the water tank, three miles west of Leadville."...



Figure 38. — Colorado and Southern rotary snowplow 99201 at Baker Tank on Boreas Pass near Breckenridge in 1936 (R. H. Kindig Collection, Denver).

175. *Rocky Mountain News*, Saturday, February 9, 1907

LOCAL PROSPECTOR CAUGHT IN SLIDE AND KILLED

L. B. Monson, Manager of Clipper Mine
Near Alma, Buried in Avalanche.

HAD SAMPLES IN HAND

Had a Wife, Brother and Other Relatives
Living in This City.

Special to the *News*.

"ALMA, Colo., Feb. 8 — A fatal snow slide occurred on Mosquito Range, between Alma and Leadville, to the right of the old stage road above the North Fork of Mosquito Creek, yesterday afternoon. L. B. Monson, manager of the Clipper Mine nearby, had started from his cabin for the forks

of the road with ore samples, which he intended sending to Alma for assay tests, and was caught by the slide and suffocated before help could reach him.

"Witnesses of the slide discovered Monson's body an hour later, life being extinct....

"The snowfall for the week has been several feet, and teamsters say there is nothing to hold it, owing principally to the warm weather of the last few days, and more slides are feared."

176. *Rocky Mountain News*, Tuesday, February 12, 1907

AVALANCHE CRUSHES CABIN LIKE A SHELL

Snow Slide from Mosquito Mountain at Alma Buries Mine House and Sleeping Night Shift Has Narrow Escape.

Special to the *News*.

"ALMA, Colo., Feb. 11 — A second snow slide occurred in the Mosquito district yesterday. This slide came down nearly 400 feet wide and covered the cabin at the Butte Mine to a depth of twenty-five feet, crushing the building like an eggshell. Luckily there was no one in the cabin at the time. The night shift was asleep in the bunkhouse, 100 feet distant. Edward Warner had been sharpening steel in the blacksmith part of the cabin five minutes before and had taken an ax and started up the hill for wood. He saw the slide coming and got behind a tree. He was buried by the avalanche, but was able to pull himself out by the aid of the tree.

"The slide covered the mouth of the tunnel for a distance of thirty feet, and the day shift had to be shoveled out. Other slides in the vicinity are feared, as the mountains are heavily capped with snow."

176X. *Denver, South Park and Pacific* (Poor 1976, p. 367)

"William Cairns, a long time employee of the South Park Railroad, recounts that on February 8, 1909 a rotary snowplow and three engines going from Como west through the Alpine Tunnel encountered snow slide debris just below the Palisades but was able to get through it. After rounding Sherrod Curve and passing the Woodstock Spur the plow was

stopped by a mound of avalanche debris 500 feet long and forty feet deep at the center. Seven engine crews and two train crews worked seven days and nights to clear the tracks. This was in the same place as the avalanche that demolished the Woodstock Station March 10, 1884 and killed thirteen people" [126].

177. *Leadville Herald Democrat*, Wednesday, February 10, 1909

Blockaded With Snow

Worst Storm in Years Demoralizes Traffic in State

Slide at Shoshone

"Denver, Feb. 9 — The storm which has raged throughout the state for the past twenty-four hours is regarded as one of the worst ever experienced in Colorado. Never before have the railroads of the state been so blockaded by snow and slides. The passes through the mountains are nearly all blocked and traffic over the Denver and Rio Grande and Colorado Midland is almost suspended. Poncha, Cumbres, and Marshall passes were blocked with snow and Tennessee Pass was kept open with difficulty.

"Marshall Pass has not been closed before in many years. Thirteen snow slides are reported between Durango and Silverton [In the San Juan Mountains of Southwestern Colorado] and the Colorado and Northern Georgetown loop line is closed.

"Rio Grande eastbound train No. 6 which is many hours late and which narrowly missed a rock slide at the Utah line two days ago, is again blocked at Shoshone, the slide at Shoshone descending but two minutes before the arrival of the train.

"Glenwood Springs reports two slides, one of which struck a stage but injured none of the passengers.

"Lake City has been without a train for two days and is running out of fuel. No trains are expected there for three days.

"Breckenridge is cut off from railroad communication and the thermometer has not risen above {illegible} degrees below zero all day."

178. *Leadville Herald Democrat*, Wednesday, February 24, 1909

Present Winter Worst in Years

Joe Brett Says Snow on Eagle River is Heaviest
Since 1884, but Fishing will be Good

"The Eagle River country has experienced the hardest winter this year since 1884, says Joe Brett owner of the popular fishing resort known as 'The Frenchman's' a few miles west of the divide....

"The snow around his place just now is about five feet on the level. Much more than this has fallen, but in the natural behavior of the elements, much has faded away. The average depth right now is five feet, and in the drifted places it is as deep as twenty feet, in the unprotected portions, where the wind has a clean sweep, there is little or no snow."...

178X. *The Gunnison Country* (Vandenbusche 1980, p. 279-282)

"An avalanche in February 1909 hit the Augusta Mine buildings, part of the tram, and the mill, which was thought to be safe from avalanches. This was the end of the Augusta and other mines in the Poverty Gulch."

[We did not find any other reference to this avalanche in the newspapers or books we checked.]

179. *Summit County Journal*, Saturday, February 4, 1911

BIG SNOW SLIDE NEAR MONARCH

"Salida — The first snow slide of the season in this section occurred at Monarch, 20 miles west of Salida, injuring one man, George Barnes who had the novel experience of riding down a hill 2000 feet at lightning speed. One hundred and fifty feet of the Madonna tramway was taken out and it will be necessary to close down the number one level of the mine until the tram can be repaired. It was on this hill that a big slide ran two years ago practically wiping out the little town of Monarch and snuffing out the lives of more than a dozen persons."

[This number of fatalities does not correspond to the more detailed accounts [172, 172A, 172B, and 173A] given at the time of the previous accident, which listed six-dead and one seriously injured.]

- 179X. *Marble, Colorado: City of Stone* (Vandenbusche and Myers 1970, p. 57 and 71)

"March 7, 1912 David Davis was hit by a snow slide in Quarry Town just west of the Yule Quarry south of Marble. He was carried over a cliff, dropped 120 feet and buried. His body was recovered March 15, 1912."

180. *Summit County Journal*, Saturday, March 9, 1912

BIG SNOW SLIDE BLOCKS TRAINS

"On Wednesday a bulletin at the post office gave notice that there would be no train and no mail on account of a big snow-slide in the Ten Mile Canon above Curtain Station close to Uneva (Fig. 43). Shovelers and the rotary snowplow tackled the slide on Thursday. Postmaster Mrs. Maude Evans McLean called up Chief Clerk Blackwell of the railway mail service and arranged to have the mail forwarded to the snow-slide on the first train and further arranged with the Chamber of Commerce to stand the expense of sending a sworn mail carrier to the snow-slide to transport the accumulated mail to Breckenridge in a four-horse sleigh. Our efficient Postmaster (the official title is 'postmaster,' not postmistress, dear reader,) has had the experience of former snow-blockade winters and knows how to get quick action for delayed mail when Uncle Sam doesn't have to go down in his jeans. The slide was cleared Thursday evening and the accumulated mail was all brought in on Friday's regular train."

181. *The Crystal River Pictorial* (McCoy and Collman 1973, p. 148-149)

"On March 20, 1912, an avalanche from Mount Wood turned over a railroad engine and flattened the Marble Finishing Mill at Marble, Colo. The avalanche hit during the change of shifts between the day and night crews so only one person was in the mill. No one was killed.

"Miss Sylvia Smith, editor of the local newspaper, wrote an article saying the poor placement of the mill could have resulted in the death of hundreds of the 300 workers who occupied the mill most of the time. The mill management and town people become irritated with Miss Smith and forced her to leave town. She sued and received \$10,345 damages."

[Vandenbusche (1980, p. 240) says the avalanche came down the steep mountain south of the marble mill, shot across the Crystal River and smashed into the mill. Vandenbusche and Myers 1970, p. 72 said the slide came down Mill Mountain. Neither Mount Wood nor Mill Mountain are shown on the 1960 U.S.G.S. 7.5 minute quad sheet for Marble. The slide probably ran down the north slope of the unnamed summit marked 10,842.]

181X. *The Gunnison Country* (Vandenbusche 1980, p. 219)

"In March [no day given] 1912 an avalanche tore over the head house of the [Bulkley bituminous coal] mine [on the north flank of Whetstone Mountain 2 miles south of Crested Butte] and ran down the tramway line where 10 men were working. Six were carried 500 feet down the mountain and buried. The avalanche continued another 500 feet down the mountain turning over a loaded railroad coal car. All the men were dug out but Frank Orazem died that night from injuries."

182. *Summit County Journal*, Saturday, January 22, 1916

Nephew of Mrs. Roby Killed in Slide.

"A snow slide, the accumulation of heavy storms Monday and Tuesday, and one of the nine which crashed down the mountains in the same district, hurtled through the surface buildings of the Gordon-Tiger Mine near Twin Lakes Wednesday and demolished all before it, killing Fredrick Suttler of Leadville and John R. Remine, of Twin Lakes, a nephew of Mrs. Minnie Roby of Breckenridge (Fig. 39).

"While other men employed by the company were engaged inside the tunnel, the avalanche swept down the mountain, ripped through the shop in which Remine and Suttler were employed and carried them to the bottom of an incline, smothering them to death under a mass of snow and timber." [See I28, I57, and I57A for accounts of other avalanches on this path.]

182X. Vandenbusche and Myers, 1970 (p. 95-96)

"Three mammoth avalanches accompanied a month-long series of severe snowstorms that ended on January 26, 1916 at Marble, Colorado. These avalanches were stopped by a fifty-foot tall wall built of huge marble blocks on the north bank of Crystal River to protect the processing mill." [For more information on this avalanche retention wall see the "Early Avalanche Control" section of this report.]

183. *Summit County Journal*, Saturday, January 29, 1916

COLORADO STATE NEWS

"Two persons were swept to death in a snow slide at Leadville."

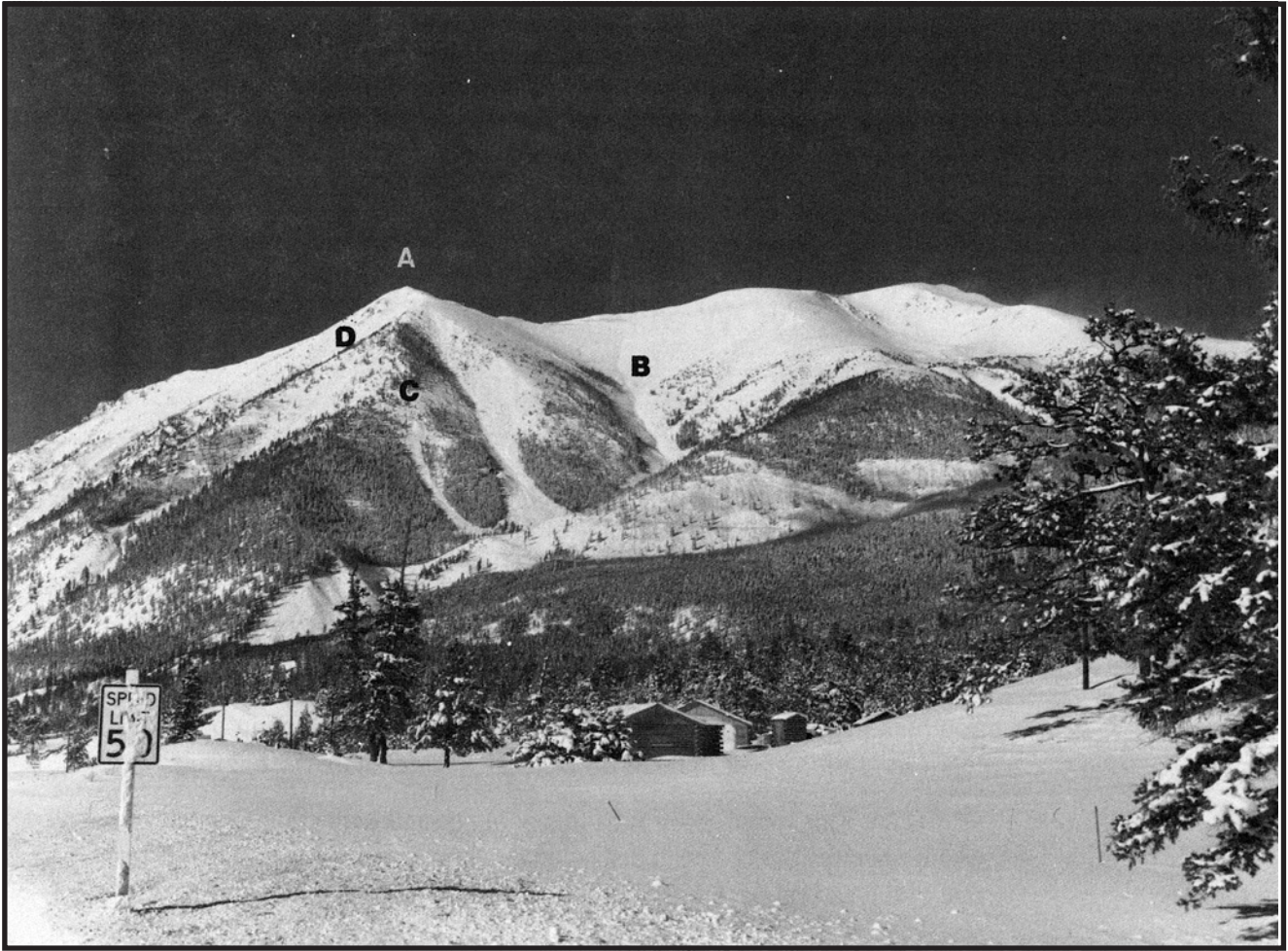


Figure 39. — Parry Peak (A) - Gordon Gulch (B) (Twin Lakes) avalanche paths. Gordon Mine is at (C) and Pomroy Gulch at (D). Slides from this area ran to the valley floor in 1884 [128], 1899 [157X], and 1962 [Page 1]. A smaller avalanche on January 19, 1916 [182] probably did not reach the valley. The January 21, 1962 avalanche killed seven people. The 1884 avalanche took no lives, the 1899 event killed one man and the 1916 avalanche killed two men. This photo by Hans Frutiger was taken January 23, 1962.

184. *Idaho Springs Mining Gazette*, Friday, February 11, 1916

Snow Slide Forty Feet Deep

"Grand Junction — Baxter Pass on the Uintah Railroad, fifty miles northwest of this city, is the scene of the bitterest fight against a monster snow blockade that the Uintah has been called upon to wage in 14 years. A snow slide forty feet deep is piled up on the track for a distance of 2,700

feet. This is not the worst feature, as the track over Baxter Pass averages 7½ % for six miles, making a climb of 2,400 feet in that distance and the steepness of the grade makes snow bucking a perilous occupation.”
[This is outside the study area but is included to show extent of the snow conditions.]

185. *Summit County Journal*, Saturday, February 12, 1916

SNOW SLIDE CRASHES INTO C. & S. TRAIN

Coaches Hurled from Track and Buried in Snow; Only One Passenger Injured.

“A snow slide between Leadville and Birdseye struck Colorado and Southern passenger {train} No. 70 Tuesday night and crashed into the two rear cars, turning over the passenger coach and derailling the baggage car.

“O. A. King, manager of the Pingrey Mines and Reduction Company, which operates the Leadville district mill, whose hand was cut, was the only one of the several passengers who was injured.”...

185X. *The Gunnison Country* (Vandenbusche 1980, p. 117)

“On March 2, 1916 near Chipeta Falls in the Black Canyon of the Gunnison River, an avalanche hit a passenger train and knocked cars into the river. Another avalanche blocked the track behind the train. After 24 hours a wedge plow broke through to the stranded train. A wrecker that was accompanying the plow was swept into the river by another avalanche. C. H. Matthews and Earl Levy were killed in the first accident. Heavy thaws produced seven more avalanches that kept the passenger train and the plow crew stranded for the next 72 hours.”

[Wallace 1960, p. 77 reporting on what appears to be this accident said one of the men killed was a football player; the other was an express clerk.]

186. *Summit County Journal*, Saturday, March 11, 1916

GENERAL

"Two snow slides are reported along railroads in the mountains and, as far as heard from, no lives were lost. One of the slides was near Shoshoni [sic], in the Glenwood Springs district. The other was at Kildare near Leadville."

187. *Idaho Springs Mining Gazette*, Friday, March 2, 1917

Slides Throw Train from Track

"Crested Butte — Two snow slides ran here and struck passing trains on railroads. An extra on the D. & R. G., sent out with a flanger to clear the tracks of accumulated snow, was struck with a slide one-half mile below town, carried from the track and turned over. The train consisted of a day coach, and baggage car, and there was one passenger aboard. He was uninjured. Conductor Twitchell was stunned and bruised, but recovered from his injuries within a few minutes."

188. *Summit County Journal*, Saturday, March 2, 1918

Snow Slides in Ten Mile Canyon

"The storm during the past week brought down the biggest snow slide of the season along Ten Mile Canyon. The rotary was ordered to tie up at Dickey Thursday night, and started out early yesterday morning. After a hard days fight against the snow slide, at night, only a little headway was made. The canyon appears to be one slide after another from a short distance above Frisco to the upper end of the canyon. The slide opposite Uneva Lake was the largest and was about one mile long and from one hundred to two hundred feet deep." [This depth is an obvious exaggeration.]...

189. *Summit County Journal*, Saturday, February 28, 1920

TRAPPED IN A SNOW SLIDE,
IS BURIED LIVES.

Archie Hogue Of Wheeler Has Miraculous
Escape From Mass Of Falling
Snow Logs And Rocks

"Archie Hogue miraculously escaped death near Wheeler last Tuesday when he was buried in a snow slide with deep masses of rolling rocks and logs that swept down upon him from a gulch near Wheeler. Hogue extricated himself from his covering of snow after an hour's work and crawled to his home nearby....

"The snow slide covered a distance of three-quarters of a mile, and had covered a distance of half a mile before reaching Hogue....Hogue's horse was completely buried. A collar worn by the horse was found at the bottom of the slide. Some of the logs, which came down with the snow, were said to have been two feet thick and forty feet in length."

189X. *The Gunnison Country* (Vandenbusche, 1980, p. 327)

"February 1920 [no day given]. Teamster Ed Adrian, his sixteen year old son, Bruce and Steve Suslikov were en route to the Doctor Mine from Bogan's Camp on Spring Creek to pick up a load of ore....At Snowslide Bridge they came to a fresh slide they could not cross. As they were turning around, they were hit by another slide. Bruce Adrian and Steve Suslikov were killed immediately. Ed Adrian was covered by the slide. He was next to one of his horses whose ears and head were above the snow. With the air thus provided, he was able to dig himself out after three hours."

190. *Summit County Journal*, Saturday, March 6, 1920

RAILROAD TRAFFIC IS BLOCKED NEAR HERE BY THREE SNOW SLIDES

Trains Stop Running For Two Days Between Leadville And Breckenridge; East Tracks Remain Open

"This morning the train from Leadville ran into a 'Curtain' [Curtain was a station on the railroad] snow slide at Frisco and is blockaded from further progress. This place has been giving trouble from slides nearly every year. A rotary was sent from Como this morning to Frisco. There is reported to be less snow over Boreas Pass, and trains are expected to run on time or nearly on time from that direction.

"Three snow slides between Leadville and Breckenridge during the early portion of the week shut Summit County off from western traffic over the C. & S. Railroad for two days, Monday and Tuesday....

"On Monday evening C. & S. passenger train narrowly escaped disaster as it plowed into the principal snow slide just this side of the Three-mile Tank near Leadville. Engineer Miller brought the train to a stop after the engine had bored its way into the snow that covered the tracks to a depth over the top of the cab.... Workmen worked for five hours to allow the passengers to continue, shoveling the tracks for the one hundred and fifty feet, which were buried beneath the slide. The snow was piled high on the tracks and threw the front wheels of the engine from the track as it plowed into the slide....

"Two large slides in the same section of the road were reported on Tuesday in addition to the slide that had first held up the train. The largest slide was later reported to be three hundred feet in length and the tracks were buried beneath from ten to thirty feet of snow. A smaller slide buried forty feet of the track under ten feet of snow....

"This is the first serious slide encountered this winter on the Breckenridge Branch of the C. & S., and occurred at a point where similar slides have blocked traffic in past years."...

191. *Georgetown Courier*, Monday, June 5, 1920

"The bodies of ten elk were discovered on a mountainside in Middle Park that had been killed by a snow slide."

192. *Summit County Journal*, Saturday, February 11, 1922

SNOW SLIDE BLOCKS TRAIN SERVICE

"Passenger and train service from Leadville was annulled yesterday owing to a large snow slide near Curtain. It is stated that the slide is about 60 feet long and 8 to 10 feet deep and will require the service of the rotary plow, which was expected to leave Como at 4 o'clock this morning.

"This is the first slide of the season. Every spring several of these snow slides cause considerable delay in the train service, and prove very expensive to the railway company."...

193. *Summit County Journal*, Saturday, February 18, 1922

BOB RECEN OF KOKOMO INJURED IN SNOW SLIDE

"Bob Recen, of Kokomo, was featured in the headlines of the Herald Democrat of Leadville the past week. We print herewith articles taken from the Saturday last paper and also for the following day....

"Bob Recen, well known Kokomo mining man who was caught in a heavy run of snow near his mine Friday, was not badly injured,...but a horse on which he was riding when the slide engulfed him was killed. Recen was almost completely buried in the snow but managed to keep one hand above the snow and rescuers were thus enabled to extricate him a few minutes after the accident occurred."

[See 159 for the account of an accident to Bob's brother, Henry Recen.]

193X. *Rails That Climb* (Bollinger, 1979, p. 203)

"February 18, 1922 on the west side of Corona [a railroad station at Rollins Pass – 7 miles east of Fraser] an avalanche hit a locomotive and stopped it. Another locomotive tried to pull it out but couldn't. A second avalanche hit the first locomotive knocking it off the track and rolling it 700 feet down the hillside. Several men were killed. Some of the bodies were found by probing with cross cut saws. Saw teeth caught in the

clothing as saws were pulled up. Two men were inside the water tank on the tender [adding snow to the water supply] when the avalanche hit. After the locomotive came to rest, they climbed out essentially uninjured. The locomotive was later pulled up a temporary ramp and put back on the track. The ramps could still be seen years after the accident."

[An account in the *Denver Post* for Saturday, February 20, 1922 lists the dead as Paul Paulson, William Monganis, George Monganis, and George Karnabas. A. S. Cane and Thomas Conway, who were in the tender, were injured. The accident happened during a raging blizzard that produced more than two feet of snow in less than twelve hours. The location of the accident is given as Mile Post 70 ¼ – one and a half miles west of Loop [a station along the railroad]. Railroad officials said this was the first serious slide that had occurred at this point on the road.]

194. *Summit County Journal*, Saturday, February 25, 1922

TRAINS BLOCKED AGAIN ON MONDAY

"With the usual storm over Sunday and no trains running, according to the recent order adopted by the railroad company, people along this end of the South Park Branch of the C. & S. enjoyed the pleasure of again going without train service this week.

"No. 71, starting out from Leadville Monday morning, was unable to get beyond Mile Post 124, near Wheeler, having encountered a slide at that point said to have been 200 feet long and upwards of ten feet deep. That evening a second slide occurred at Curtain."...

195. *Summit County Journal*, Saturday, December 16, 1922

WORST STORM IN YEARS

HITS BRECKENRIDGE

"One of the worst snowstorms in many years hit Breckenridge this week starting in on Tuesday, and showing little signs of any abatement this morning. No official measurement is taken of the snowfall, but several who have occasion to watch closely estimate that the actual fall of snow during the past few days will exceed four feet....

"On Thursday No. 71 from Leadville encountered several snow slides between Kokomo and Frisco, and arrived several hours late. The freight train from Leadville closely followed the passenger, and also had much trouble in getting through. The Denver train on that day was tied up and

annulled at Dillon as two more slides came in near Curtain, one on the east side and the other west of that station....

"The worst snow storm for many years stopped at noon on Saturday. About three feet of snow fell here while at Halfway on the east slope toward South Park only six inches of snow fell, at Boreas the snow was about four feet deep."...

Rotary Arrives Sunday

"On Saturday the rotary did not leave Como, as a severe storm was blowing in the part {Park} and on Boreas Pass, and the railroad company felt that it would be time wasted to plow out the road and have it fill in behind the train. The rotary left Como early Sunday morning, and arrived here about 1:30. They stated that they encountered more snow on the pass than any previous winter in years for this part of December."...

196. *Summit County Journal*, Saturday, March 24, 1923

Seven Snow Slides on West End above Curtin Blocks Service from Leadville and No Efforts are made to Open Boreas.

Three Trains in Two Weeks is Effort of C. & S.

"Breckenridge and Summit County is (sic) experiencing the worst tie up since the winter of the big snow [1898-1899]. The storm beginning two weeks ago tomorrow, has almost been constant, illustrating what is meant by March weather. The train service has almost been annihilated. Three trains in two weeks is our record. The first was the passenger from Leadville one week ago last Monday, which took all day to reach Breckenridge. The second train was on Wednesday of last week when the passenger followed the rotary to Breckenridge and the last was Monday of this week when the rotary again opened up the road so that the passenger train with marooned passengers were able to reach Dillon.

"The rotary started out Wednesday morning and reached Solitude [Appendix B] without a great deal of difficulty. Here they encountered the first of seven slides ranging in length from five hundred feet to a couple of thousand feet, and in depth of from fifteen to fifty feet. It is said that the big slides have covered all the telegraph poles, and when dug out shows that the snow is twice as high as these poles. In places the drifts are three times as deep as the height of the rotary. The mass is mainly ice and rock and many trees....

"From all accounts it will be impossible for the rotary to get through these slides for at least ten days or more.

"The shortage of provisions at the present time consists of butter, eggs, flour, sugar, and meat. Every other article is also nearing the point of exhaustion, and serious results would probably follow a ten-day tie up on top of the two weeks we have already suffered."

197. *Summit County Journal*, Saturday, May 8, 1926

LARGEST SNOW SLIDE OF THE SEASON IN TEN MILE CANON

"Early Monday morning of this week the largest snow slide, the looked for and expected 'Big Tim,' or 'Big Mike,' as it is usually referred to came down the side of the mountain in Ten Mile Canon near Uneva Spur a short ways above the town of Frisco.

"The slide, as estimated by those who visited the scene from here, say that it was more than 40 feet deep and 200 or more feet long.

"The slide buried the C. & S. tracks under 40 feet of snow. The rotary snowplow was brought over from Como and put to work with a large crew of men with shovels.

"The transfer of baggage, passengers and mail are being made at the slide daily, the train from Denver going back in the evening."

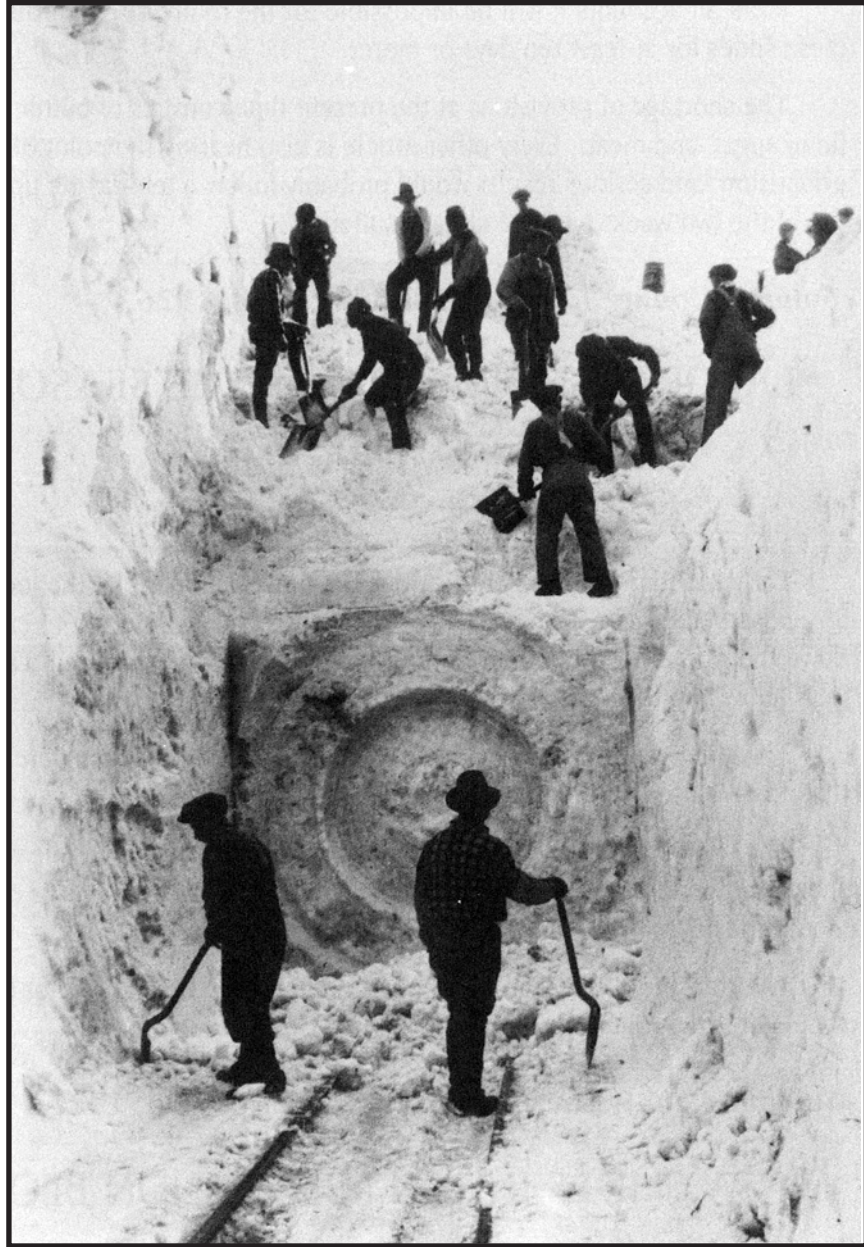
198. *Summit County Journal*, Saturday, February 26, 1927

SNOW SLIDES IN TEN MILE CANON BLOCK C. & S. TRAFFIC FOR WEEK

Climax Molybdenum Shut Off by Slides on Both Sides of Camp

"Train service on the Colorado & Southern Railroad was tied up in the Ten Mile Canon since last Saturday when three snow slides of large dimensions buried the tracks near Curtin, 25 miles west of Breckenridge, to the depth of from three to fifteen feet.

Figure 40. — Imprint of rotary snowplow blade in avalanche debris at the Uneva Lake Avalanche near Curtin in Ten Mile Canyon in 1936. When debris was deeper than the rotary blades, men had to shovel the snow down so the plow could handle it. Trees and rocks in the snow severely damaged the rapidly spinning blades (R. H. Kindig Collection, Denver).



"Large boulders and trees, swept down the mountainside by the force of the slides, made the rotary plow useless, so that work of digging out the track had to be done by hand (Fig. 40). The first slide encountered, about fifty feet wide, was plowed through by the eastbound train which left Leadville at 8:20 Saturday morning and due to arrive in Breckenridge at 11:30. Two other slides, however were encountered, one 150 feet wide and the other 300 feet across. The depth of the snow in these varied from three to fifteen feet, so that it was necessary to send out for help. A locomotive was sent out from Leadville with a crew of shovelers and a locomotive left Como with a crew of shovelers who worked until late into the night clearing the track.

"Slides occur every winter in the Ten Mile Canon, this year is proving worse than for many winters."...

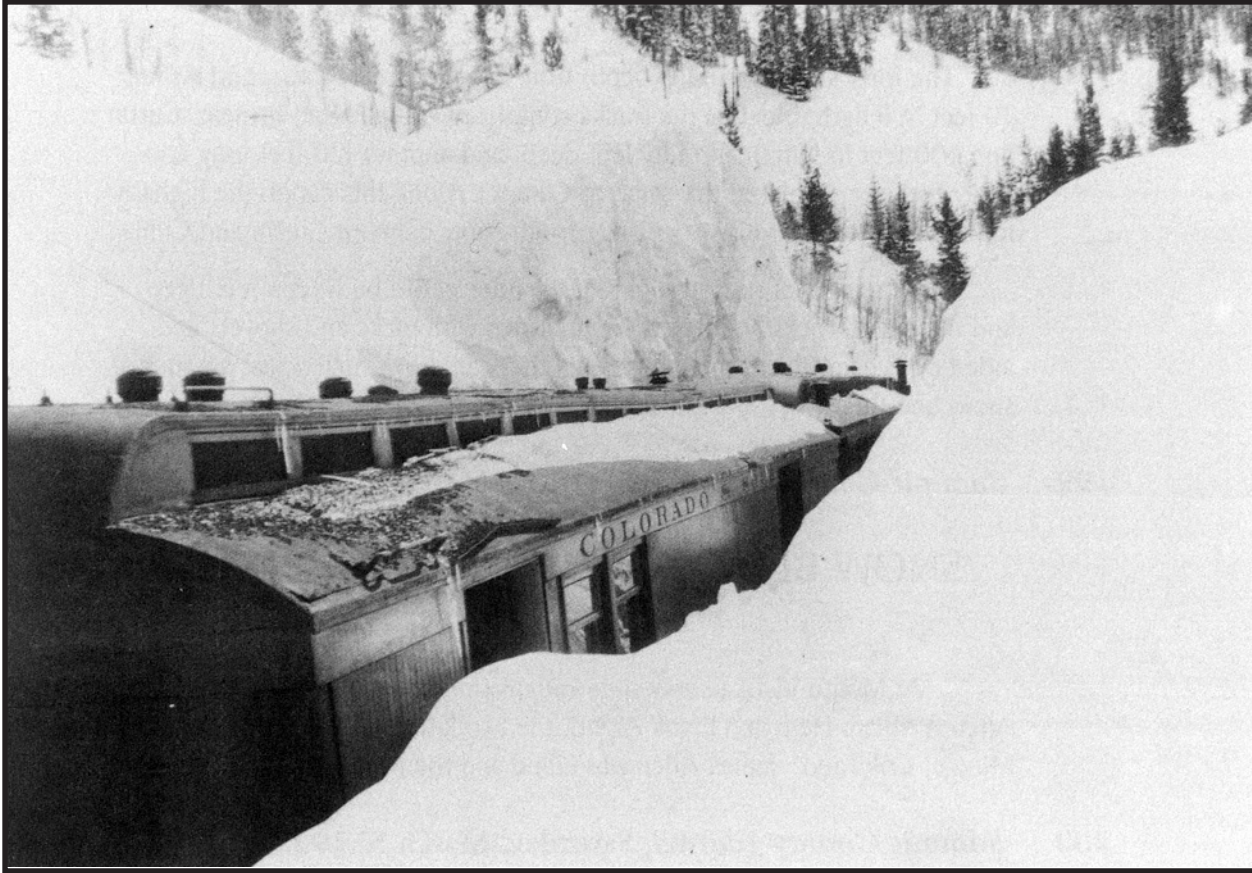


Figure 4I. — A Colorado and Southern passenger train moving through the cut in avalanche debris at the Uneva Lake Avalanche near Curtin in Ten Mile Canyon in 1936 (R. H. Kindig Collection, Denver).

Climax Camp Cut Off.

"Tuesday a snow slide of several hundred feet in length occurred on the C. & S. tracks two miles west of Climax, which blocked the tracks on the Leadville end of the line.

"The snow slide occurring at the other side of Climax shut off about 200 persons, including men, women and children, from the outside world. In the past week there have been upwards to, and possibly more if all the smaller slides that have done no damage were counted, forty slides in the Ten Mile Canon that have piled up and covered the C. & S. tracks, between Breckenridge and Leadville. The most troublesome part being at Uneva Lake and Curtin, where the canon is very narrow...(Fig. 4I).

Snow Storm at Breckenridge.

"Starting a week ago the storm began and continued intermittently ever since, it was strong and drifted the snow on several days and nights. Two feet of snow has fallen since the inception of the storm....

Forty Snow Slides In Ten Mile Canon.

"The forty slides varied in depth from five to ten feet each, and average 20 feet in length, blocked the tracks completely — while at, or near, Curtin one 400 feet in length and fifty feet deep, and another 120 feet long and thirty feet deep isolated the camp at Climax. Along this canon the highway road is said to be about six feet deep with snow between Curtin and Climax.

"The rotary is of no use when these slides get to be fifteen feet deep and filled with rocks and trees. Men, armed with picks and shovels and aided by dynamite, are the only agents that can move such a vast amount of snow, and their work must necessarily go slowly."...

199. *Summit County Journal*, Saturday, March 5, 1927

SNOW BLOCKADES BEING CLEARED UP

"...At Monte Vista a snow slide caught three mining prospectors, James Allen, William Hein and Frank Arand, the two latter men were residents of Mirage, Colorado. James Allen was killed and the other men injured."...

200. *Summit County Journal*, Saturday, March 5, 1927

Snow Slide Friday Delays Train To Leadville

"The Colorado & Southern trains on the Denver, Breckenridge and Leadville line resumed regular schedule on last Saturday after a week tie-up on account of the snow slides in the Ten Mile Canon. Yesterday, Friday, another snow slide road {rode} down the mountain side, near Uneva Lake, and covered the C & S tracks over a hundred feet in length and about 25 feet deep, so it was reported."...

201. *Summit County Journal*, Saturday, April 23, 1927

'BIG MIKE' SLIDE ARRIVED IN TEN MILE ON MONDAY

"The expected, in snow slides, happened on Monday of this week in the Ten Mile Canon, blocking the Colorado & Southern Railroad for the week



Figure 42. — “Big Mike” Avalanche path and the site of the Curtin or Uneva Lake station on the High Line Branch of the Colorado and Southern Railroad in Ten Mile Canyon above Frisco. Foundations of the buildings at Curtin are in the square opening in the trees (lower left corner). The railroad was just below the lower edge of this picture which was taken in June 1981.

with the slide covering an estimated length of 200 feet and said to be 30 feet deep.

“The slide that came was known as ‘Big Mike,’ which is near the Uneva Lake (Fig. 42). Some years it is larger than others and with the districts through the canon where these slides happen regularly they are watched for and uneasiness experienced by railroad men until they come down

"An account given by the Leadville Herald Democrat of the slide is as follows:

'...The train was running an hour late; otherwise, it would have passed the slide before it came down. As it reached Curtin, the engineer became aware of the slide roaring down the mountainside directly in the path of the train. The brakes were set, and since the speed of the train in the canon is not great, the engineer was able to stop the engine and throw it into reverse in time to avoid the slide although it missed the locomotive only by a few yards.

'Two men who were walking along the track a short distance ahead of the train were forced to run at top speed to avoid being buried, according to word received here by telephone from one of the passengers.

'Inasmuch as the rotary plow is out of commission, it will probably be about a week before the tracks are cleared.'...

"A number of other slides have occurred this year, tying up train service on the road on several occasions, the most serious of which near Curtin, caused the mine camp of Climax on the Continental Divide, fourteen miles east of here, to be isolated for several days, since other slides, between Leadville and the camp, prevented access from this side also."...

202. *Summit County Journal*, Saturday, March 9, 1928

BIG SNOW SLIDES CUT TRAIN SERVICE

Heavy Snowfall Causes Snow Slides in Ten Mile Canon Blocking Trains Between Here and Leadville. Road is Expected to be Cleared by Saturday.

"The heavy fall of snow last week tied up local train service to Leadville. The roadbed in the Ten Mile Canon was covered with snow slides that are customary during the spring of the year. It was expected that the light snow this winter would not cause any trouble, but on Saturday and Sunday of last week, there fell about 18 inches of snow in the lower valleys, and probably more in the high hills. This snow was wet and heavy, and caused all the well-known slides in the Ten Mile Canon to come at once.

"A total of 1140 feet of track was covered by the slides. The depth ranged as high as forty feet, according to word from those engaged in digging out the debris....Much of the work of clearing these slides must be done by hand because of the trees and rock and other debris that is always carried down the side hill.

"According to reports, there were four distinct slides all within one mile of Curtain [Curtin]. One east of Curtain [Curtin] was 400 feet long, and ranged in depth from ten to twenty-five feet. Another, a quarter of a mile east from Mile Post No. 123 (Figs. 43 and 44), is 600 feet long, and has a maximum depth of thirty-five feet. A third slide is reported to have been eighty feet long and fifteen feet deep, while the fourth at Mile Post No. 124 is sixty feet long and fifteen feet deep.

"The slide according to E. L. Seikman of the Public Service Co., at Leadville, was the cause of the interruption in power service last Saturday evening, when the lights after blinking a few moments went out completely....According to the report to the Public Service office from their patrolmen, the slides were caused by a fall of twenty-six inches of snow within forty-eight hours in the Ten Mile region. The slide just above Uneva Lake, known as the Monroe Slide, is said to have blocked the river, causing the water to run over the new Ten Mile highway at that point. [Clawson 1986, p. 50 says the Monroe Mine was opposite Officers Gulch. This mine does not appear on modern maps.]"...

203. *Summit County Journal*, Friday, March 29, 1929

SNOW SLIDES IN TEN MILE STOPS TRAINS

Climax and Frisco Isolated by Big Slides

"Several snow slides in Ten Mile Canon during the past week have blockaded trains from Leadville and isolated towns between Dillon and Leadville....

"Climax, which had been without mail of any kind since last Friday, sent a man to Leadville on skis to bring in some first class mail. Frisco and other towns along the route are completely isolated."...

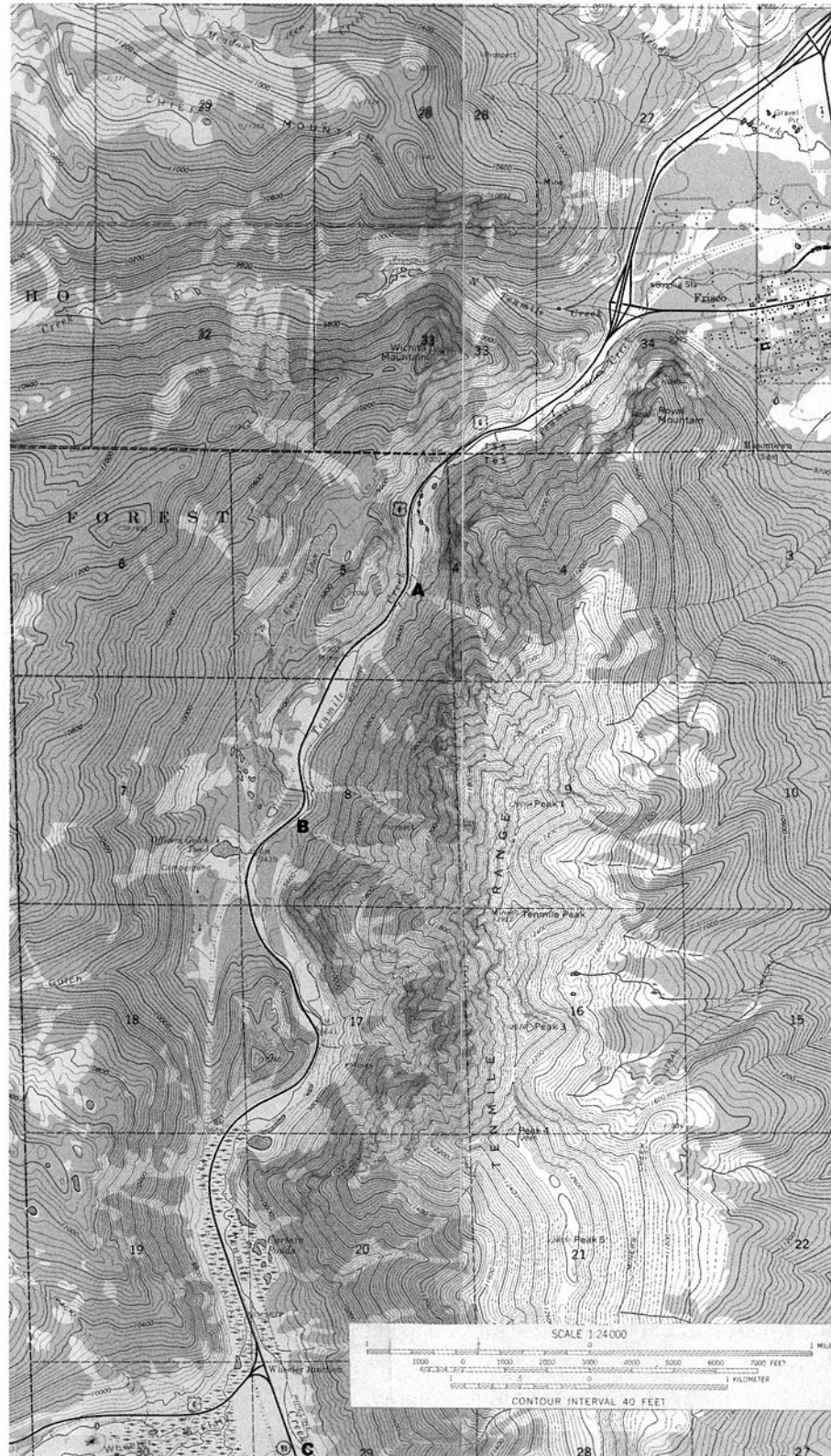


Figure 43. — Topographic map of Ten Mile Canyon showing approximate location of Curtin (A) at Railroad Mile Post 122 (also called Uneva or Uneva Lake), Railroad Mile Post 123 (B), and Wheeler which is about 2200 feet south of (C).



Figure 44. — Looking south up Ten Mile Canyon from the top of the highway cutbank, near Highway Mile Post 199. The old Colorado and Southern Railroad grade (left of the stream) is now a paved bicycle path. Mile Post 122 on the Colorado and Southern Railroad and Curtin (Uneva Lake) were just left of the lower left corner of this picture. Railroad Mile Post 123 was close to the place where the two lanes of Interstate 70 curve to the right (June, 1981).

204. *Summit County Journal*, Friday, April 11, 1930

BIG MIKE MAKES ITS ANNUAL TRIP; BLOCKS TRAINS

"'Big Mike,' as the big snow slide in the Ten Mile Canon is called, made its annual trip down the mountainside last Sunday afternoon covering the tracks of the Colorado & Southern Railroad with snow....

"The tracks were reported covered with snow to a depth of 35 feet for a distance of 150 feet. This is the same slide, which blocked the trains for a week last spring" (Fig. 42)....

205. *Summit County Journal*, Friday, February 23, 1945

Snow Slide Takes Life of
Allen T. Layman, of Chalk Bluff

"Allen T. Layman, 43, was covered by a snow slide Saturday evening at 6:30 when he and his two youngest sons, Clyde, 15, and M.J., 12, were out skiing in the hills back of their home, at Chalk Bluff....

"The slide covering Mr. Layman knocked the two boys down and almost covered M. J. It then swept on past the Layman home and nearly to the highway...{Searchers} found Mr. Layman's body, which had been carried five hundred feet by the slide, yesterday (Sunday) morning at 11:30."...

— Leadville Herald-Democrat

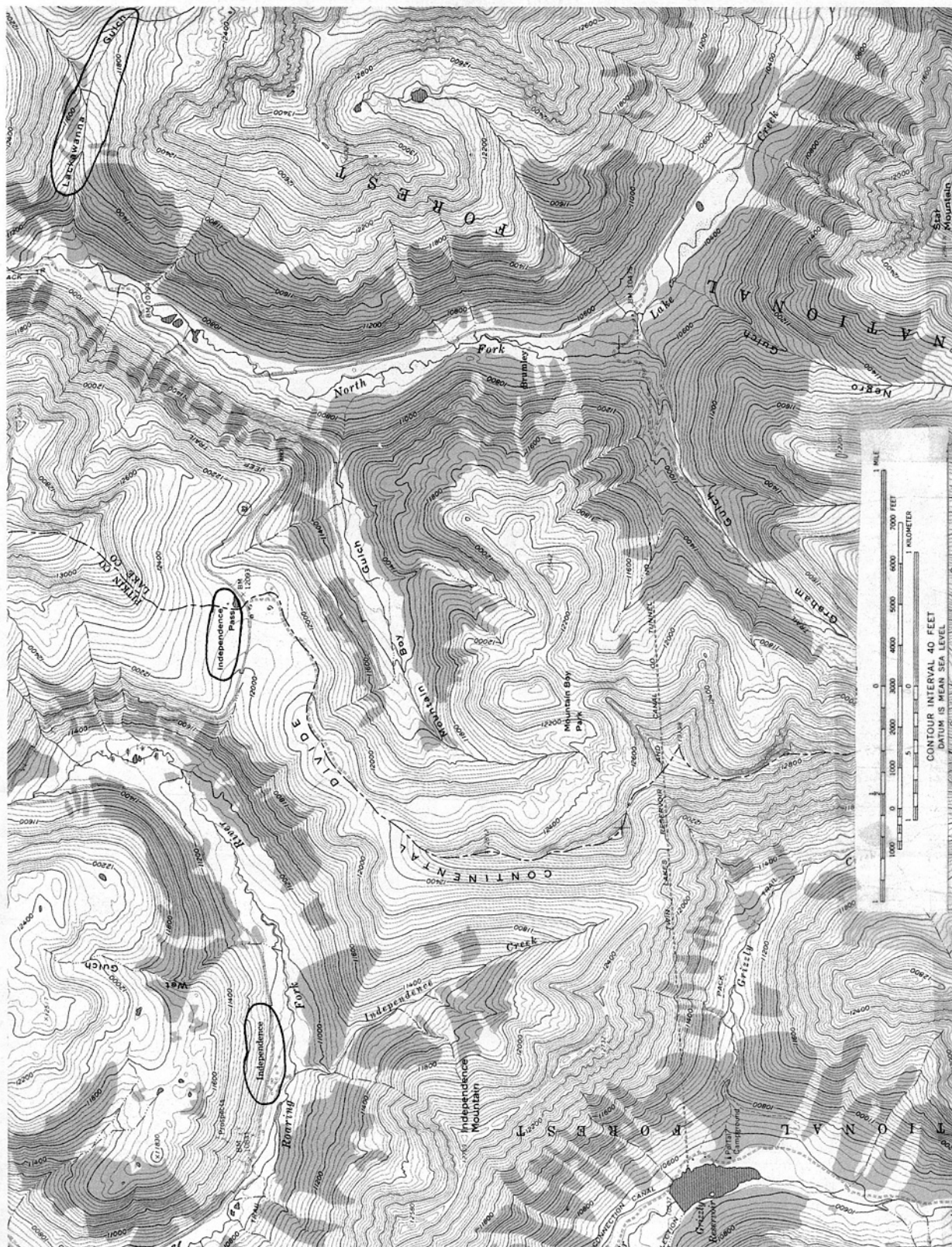


Figure 45. — Part of the Independence Pass, 7-1.2 minute quadrangle (USGS).
Places mentioned in the newspaper accounts are circled.

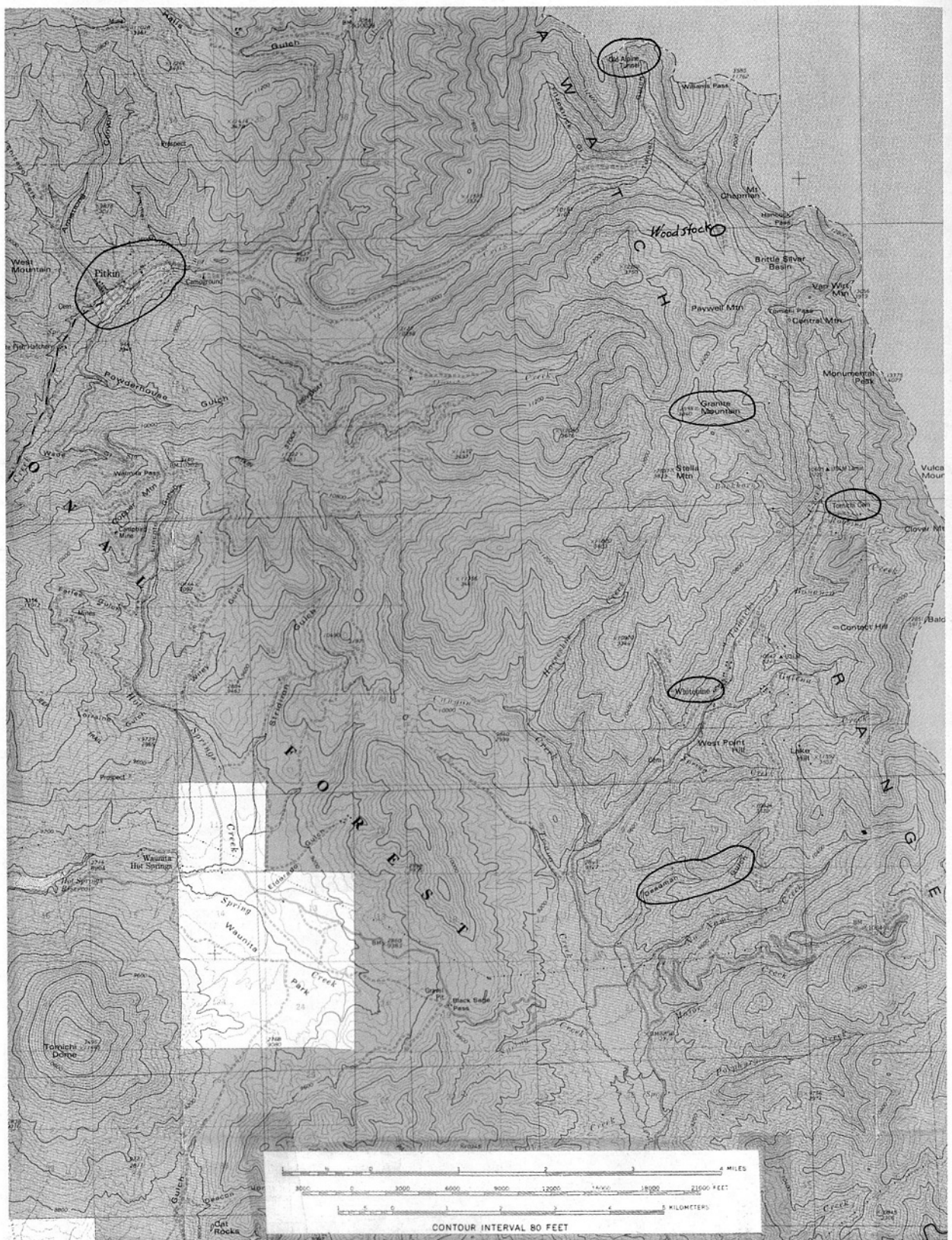


Figure 46. — Part of Sheet 5 of the Gunnison County maps (USGS).
Places mentioned in the newspaper accounts are circled.

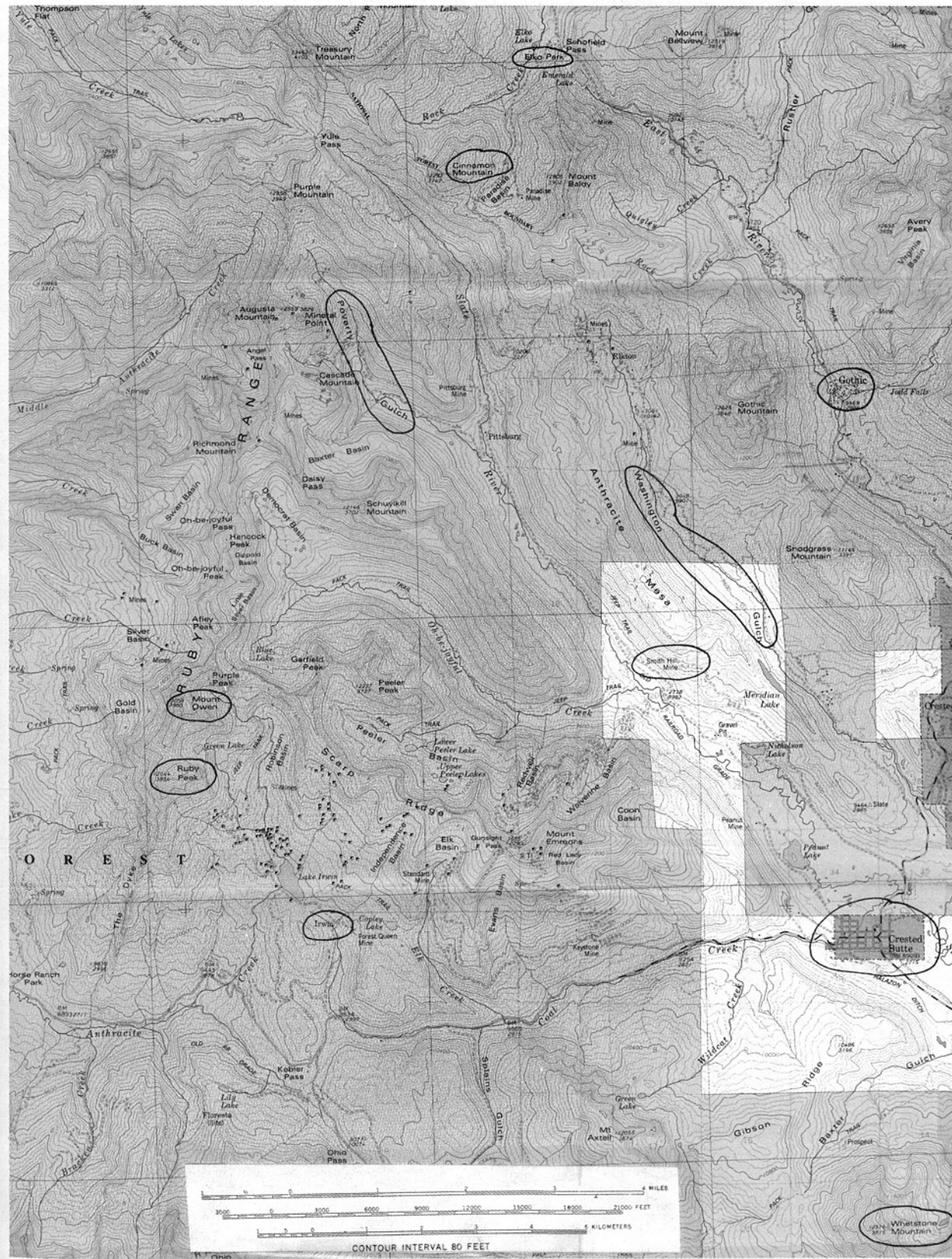


Figure 47. — Part of Sheet 2 of the Gunnison County maps (USGS).
Places mentioned in the newspaper accounts are circled.

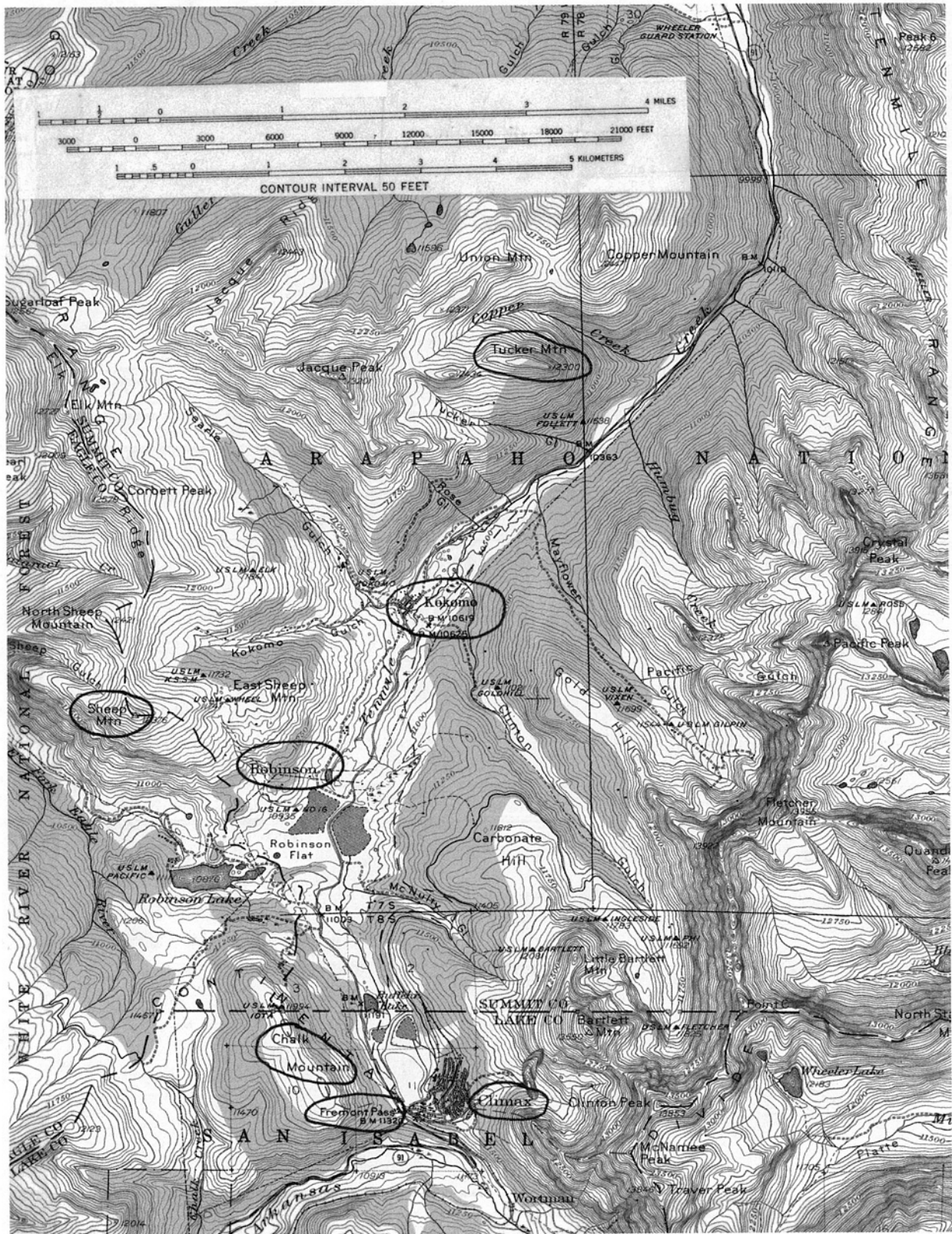


Figure 48. — Part of the Mt. Lincoln, 15-minute quadrangle (USGS). Places mentioned in the newspaper accounts are circled. [Fig. 49 fits below this one.]

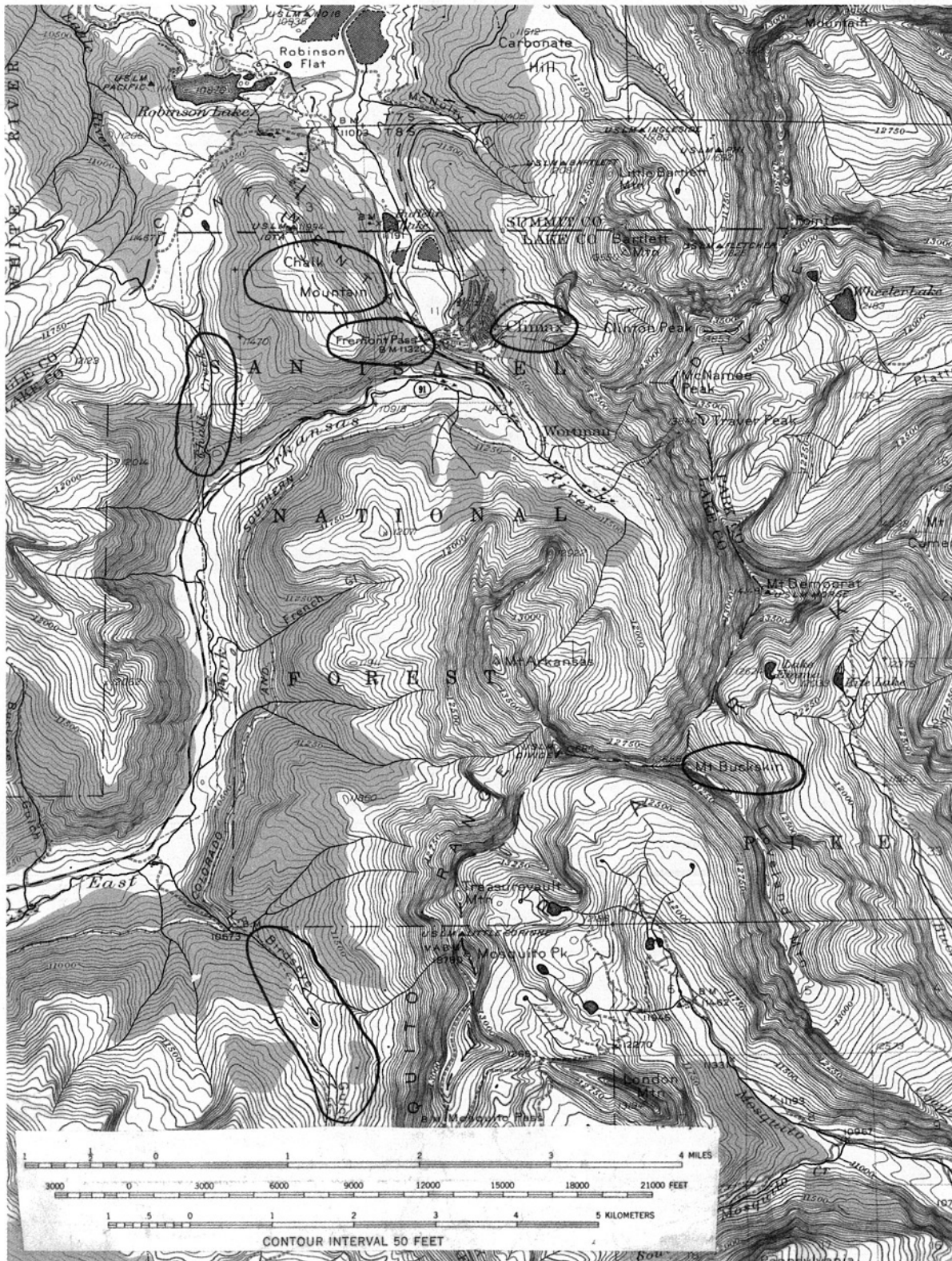


Figure 49. — Part of the Mt. Lincoln, 15-minute quadrangle (USGS). Places mentioned in the newspaper accounts are circled. [Fig. 48 fits above this one.]

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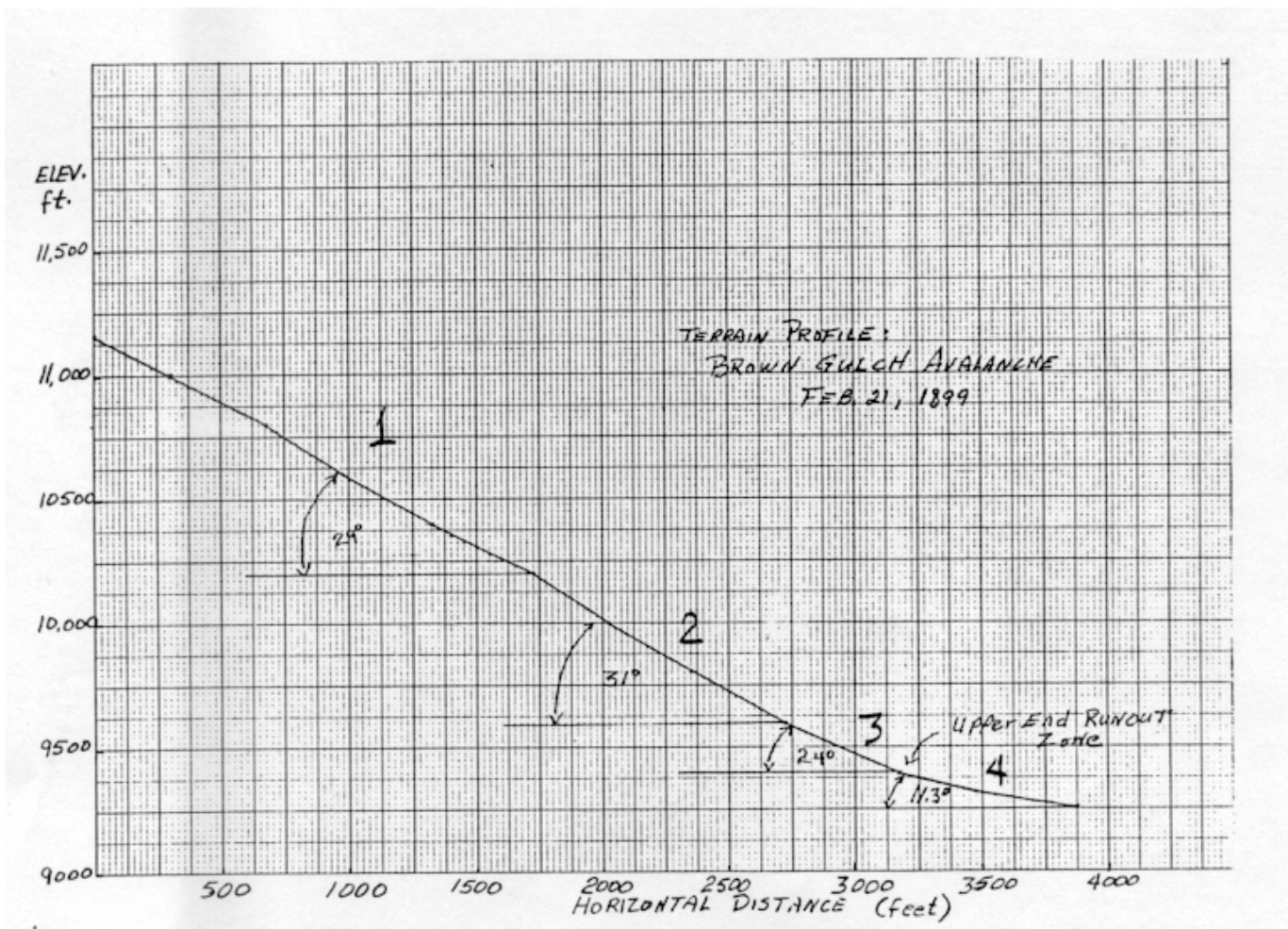
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APPENDIX A

Determination of friction coefficients for the avalanche that ran down Brown Gulch near Silver Plume, Colorado, on February 21, 1899 [36].



Calculations

[See Leaf and Martinelli (1977) for details of this technique.]

BROWN GULCH AVALANCHE OF FEBRUARY 23, 1899.

Assumptions: $\xi = 500$ to 750 m/s^2 ; $h' = 1.5 \text{ m}$; $\mu = 0.12$ to 0.18 in track and $5/v$ in runout zone.

LONGITUDINAL PROFILE

FLOW HEIGHT

Reach	Description	Slope Angle	Reach	h'
1	Upper track	29.0°	1	1.5 m (assumed)
2	Mid track	31.0°	2	1.47 m
3	Lower track	24.0°	3	1.59 m
4	Runout zone	11.3°		

TERMINAL VELOCITY (m/s^2)

$\xi = 500 \text{ m/s}^2$				$\xi = 600 \text{ m/s}^2$			$\xi = 750 \text{ m/s}^2$		
Reach	$\mu=0.12$	$\mu=0.15$	$\mu=0.18$	$\mu=0.12$	$\mu=0.15$	$\mu=0.18$	$\mu=0.12$	$\mu=0.15$	$\mu=0.18$
1	16.88	16.29	15.67	18.49	17.84	17.17	20.67	19.95	19.19
2	17.22	16.62	15.99	18.87	18.20	17.52	21.09	20.36	19.58
3	15.92	15.36	14.78	17.44	16.82	16.20	19.50	18.82	18.10
RUNOUT DISTANCE (meters)	90	78	67	140	119	101	255	213	175

Observed runout distance was to the banks of Clear Creek, which is about 700 feet (213 m) from the upper end of the runout zone. Hence, assuming a fracture depth of 1.5 m in the starting zone and a coefficient of kinetic friction, μ , of $5/v$ in the runout zone, the best fitting combination of friction coefficients for the track are $\mu = 0.15$ and $\xi = 750 \text{ m/s}^2$.

APPENDIX B

Stations or spurs, mile posts (from Denver) and elevations on the Colorado Southern "High Line" from Dickey, Colo., up Ten Mile Canyon, over Fremont Pass, and down the Arkansas River to Leadville (Poor 1949, p. 446).

Station	Milepost	Elevation (feet)	Remarks
Dickey	116.47	9,004	Junction of Keystone Branch
Dillon	119.17	8,839	
Nichols Spur	119.67		Keystone Branch
Keystone	123.48	9,153	Keystone Branch
Hathways	118.30		
Frisco	119.88	9,099	
King Solomon Spur	120.10		
Summit Spur	120.30		
Curtin	122.06	9,295	Also called Uneva Lake.
Solitude	126.16	9,737	Denver and Rio Grande used the name Wheeler for a nearby station on their Blue River Branch; may have also been called "Narrows."
Woodside	128.90		
Wilder's Spur	130.50		
Deneen	131.50		
Kokomo Tank	131.97		
Kokomo	132.67	10,616	
Breen's Spur	133.30		
Robinson	134.71	10,860	
Climax	137.46	11,320	Fremont Pass
Worthman's	138.06	11,240	
Alicante	138.96		
French Gulch Spur	142.36		
Linderman	142.90	10,848	
English Gulch Spur	143.16		
Birds Eye	144.86	10,671	
Dyes spur	145.30		
Three Mile Tank	147.56		
Denver and Rio Grande Western railroad crossing	150.40		
Leadville	151.19	10,208	

The Colorado Southern "High Line" was also known as the South Park; the Denver, South Park and Pacific; the Denver and South Park; the Denver Leadville and Gunnison; the South Park Division of the Union Pacific; and the South Park Division of the Colorado and Southern. Its tracks were on the east side of Tenmile Creek and were supposed to be at least 50 feet from the D & RG tracks. The Denver and Rio Grande Western (D & RG) built the first tracks in Tenmile Canon. They were located on the west side of the creek where avalanches were less of a problem. (Clawson 1986, p. 66-67.)

Table 1 — Fatalities, Northern Front Range 1861 – 1951

Winter	Month						Totals
	November	December	January	February	March	April	
1860-61					1		1
1873-74				1			1
1874-75					4		4
1875-76				1			1
1876-77			9				9
1878-79				2			2
1879-80			1				1
1880-81			2			1	3
1882-83				1			1
1883-84						1	1
1896-97				1			1
1898-99			3	16			19
1900-01						4	4
1902-03		1					1
1913-14		1	3				4
1915-16			2		1		3
1920-21						1	1
1936-37				2			2
1943-44					1		1
1944-45				1			1
1947-48			3				3
1948-49						1	1
Totals	0	2	23	25	7	8	65

Table 2 — Fatalities, Central and Northern Mountains 1862 – 1945

Winter	Month						Totals
	November	December	January	February	March	April	
1861-62					1		1
1877-78				1			1
1879-80		1	1				2
1880-81	2		2				4
1882-83		1	10	4			15
1883-84	1			2	22	1	26
1884-85				10	1		11
1885-86			12	3			15
1887-88			1				1
1890-91				4	3		7
1891-92			1				1
1892-93				2			2
1896-97				2			2
1898-99			1	4	5		10
1899-00				1	4		5
1901-02				1			1
1903-04				11			11
1905-06					5		5
1906-07				8			8
1911-12					2		2
1915-16			4		2		6
1919-20				2			2
1921-22				4			4
1926-27					1		1
1944-45				1			1
Totals	3	2	32	60	46	1	144

Table 3 — Chronological Summary of Avalanches in the Northern Front Range

Locations marked with an * appear on the maps (Figs. 16-19, pages 83 through 86).

Account numbers in Tables 3 and 4 are basically in chronological order. An A or B suffix indicates a second or third account concerning the same event. An X, Y, or Z suffix is used to permit the insertion of previously undetected events into the established, chronological numbering scheme with minimum disturbance to it. Numbers out of sequence usually indicate cases where the first, or only, mention of an avalanche was found in a summary article that appeared well after the event. Omitted numbers are usually for accounts that do not mention avalanches or for accounts that have been deleted or reassigned from the original compilation.

No.	Date reported	Location	Fatalities	Damage	Remarks and source
<u>1861</u>					
1.	March 6	Hall Valley/Gulch up North Fork of South Platte River (Fig. 18)	J. T. Shetler		Another man caught in avalanche but was dug out. Shetler's body was not recovered. (<i>Rocky Mountain News</i>)
<u>1874</u>					
2.	February 26	Near Montezuma* (Fig. 17)	Charles Fix		Accident happened February 16. (<i>Colorado Miner</i>)
3.	April 25	Stevens Mine* in Stevens Gulch near McClellan Mountain (Fig. 16)			Charles Roach carried 1,300 feet by an avalanche. Dislocated left hip only injury. Accident happened April 22 (<i>Colorado Miner</i>)
<u>1875</u>					
4	January 16	Kelso Mountain* near Baker Mine, west of Silver Plume (Fig. 16)			R. H. Wood carried 700 feet. Crippled hand only injury. Accident occurred January 10. (<i>Colorado Miner</i>)
5.	March 27	Next gulch below Silver Creek* near Silver Plume, Democrat Mountain* (Fig. 19)	James Fallon [O'Fallon]		Boulders, green trees mixed with snow. Several hundred shovelers. Accident occurred March 24. (<i>Colorado Miner</i>)
6.	April 14	Champion Lode, Geneva Mining District		Bunkhouse crushed	Six men caught by slide on April 4. One was slightly injured. (<i>Greeley Tribune</i>)
7.	April 24	Silver Queen Mine in Willihan Gulch on Sherman Mountain, 2,000 feet above Silver Plume (Fig. 19)	Wm. G. Morgan Chris Jensen Patterson Martin	Cabin	Bodies discovered in late April, but slide thought to have occurred about same time as the Fallon accident (<i>Colorado Miner</i>)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
1876					
8.	February 19	Democrat Mountain* near Silver Plume (Fig. 19)	Charles Ritchie		Accident occurred February 15 and within 1/4 mile of the Fallon accident. (<i>Colorado Miner</i>)
1877					
9.	January 17	Whale Mine* in Hall Valley, Park County (Fig. 18)	James Reed, John Reed, Matthew Reed, Reed child, J. H. Ralph Unidentified woman Two unidentified men	Boarding house swept 1/4 mile down the mountain	Avalanche occurred January 7, bodies not recovered. (<i>Weekly Rocky Mountain News</i>)
10.	January 17	Champion Property at head of Snake River* (Fig. 18)	Peri Claus ["French Pete"]	House crushed	Three other men in the house were not injured. Avalanche occurred January 8. (<i>The Greeley Tribune</i>)
1879					
11.	February 20	Geneva Gulch* [20 miles south of Georgetown] Revenue Mineral Company mine (Figs. 17 and 18)	Nickie Benny [Nicholas Bennie]	Office building, ore house, shed, two small buildings	Slide occurred February 13 and injured another man. 12" x 14" timbers in office were broken into bits not over a foot long. (<i>Georgetown Courier</i>)
12.	February 27	About 1 mile down the gulch from previous slide (Figs. 17 and 18)	12 mules		Slide occurred February 14. Eight other mules and a man were caught but not killed. [See also 39.] (<i>Georgetown Courier</i>)
		Three-fourth mile below boarding house of Revenue Mine (Fig. 17)	Charles Allen 1 mule		Slide occurred February 19. Ten other men caught but not injured.
		Gilman Mine [location unknown]		Boarding house	Slide occurred February 13.
1880					
13.	January 8	Cashier Mine* near Montezuma (Fig. 18)	Mr. Conant		Accident happened January 2 (<i>Georgetown Courier</i>)
		Glacier Mountain 2 miles southwest of Montezuma			Man carried 500 feet by slide but not injured (<i>Georgetown Courier</i>)
1881					
14.	January 20	Willow Gulch between Brown* and Hanna Mountain, Silver Plume (Fig. 19)	Knox Pinckard Lucy Jones	Cabin	Accident occurred January 14. W. M. Pinckard, injured; rescued after 4 hours. Could hear rescuers, but could not make himself heard. Six feet of new snow fell the preceding week. (<i>Georgetown Courier</i>)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
15.	January 20	Between Brownville and Bakerville			Snow crossed Bakerville Road and the creek and went 40 feet up opposite mountain. (<i>Georgetown Courier</i>)
16. and 16A.	January 27	Town of Decatur* [on Peru Creek] (Fig. 17)	3 mules	"Half the town of Decatur." Three cabins destroyed and a frame house overturned	"Many narrow escapes." Noise could be heard 3 miles away. Accident occurred prior to January 21. (<i>Georgetown Courier</i>)
39.	April 10 [Reported February 25, 1899]	Republican Mountain* near Silver Plume (Fig. 19)	1 man		Another man was caught in the avalanche. (<i>Georgetown Courier</i>)
<u>1883</u>					
17.	February 15	Pilot Mine on Collier Mountain* near Montezuma (Fig. 17)	J. M. Taylor		Slide occurred February 2. (<i>Georgetown Courier</i>)
<u>1884</u>					
19.	March 20	Above Moline Mine* in Beeched [Silver Creek] Gulch 3/4 mile from Georgetown (Fig. 19)		Cabin	Avalanche occurred March 15. It ran down Republican Mountain and 50 feet up Democrat Mountain. (<i>Georgetown Courier</i>)
20.	April 17	Grand View Mine, Republican Mountain,* Silver Plume (Fig. 19)	W. M. Wooding		Accident occurred April 10. Small, wet avalanche 8 to 10 feet wide that ran only 200 to 300 feet. (<i>Georgetown Courier</i>)
21.	April 17	Gulch above Bridal Veil Falls on Republican Mountain* Silver Plume (Fig. 19)			Avalanche occurred April 11. No damage. (<i>Georgetown Courier</i>)
22.	May 1	Seven-Thirty Mine*, Silver Plume (Fig. 19)		Buildings of Roe Mine swept away	Avalanche occurred April 25. (<i>Georgetown Courier</i>)
<u>1885</u>					
23.	February 26	Above Bakerville which is 4-1/4 miles west of Silver Plume		Trees	Avalanche ran February 19. Tons of rock and uprooted trees in debris. One man caught but not injured. (<i>Georgetown Courier</i>)
<u>1887</u>					
24.	Jan. 20	McClellan Mountain* near Silver Plume (Fig. 16)			3,000-foot avalanche (<i>Georgetown Courier</i>)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
<u>1890</u>					
25.	March 3	Wisconsin-Central Lode on Kelso Mountain* near Silver Plume (Fig. 16)			Two men caught but got out with just bruises. (<i>Georgetown Courier</i>)
<u>1895</u>					
26.	February 9	Seven-Thirty Mine* above Silver Plume (Fig. 19)			One man caught and bruised. (<i>Georgetown Courier</i>)
<u>1896</u>					
27.	April 4	McClellan Mountain* Baltimore Tunnel near Silver Plume			One man caught but escaped uninjured. (<i>Georgetown Courier</i>)
<u>1897</u>					
28.	February 27	Atlantic Mine on Collier Mountain* near Montezuma (Fig. 17)	William Conway 11 mules		Heavy fall of snow previous week in central part of state. (<i>Georgetown Courier</i>)
29.	February 27	Big Professor Mountain [now called Mount Sniktau]			Debris blocked the wagon road. (<i>Georgetown Courier</i>)
30.	March 6	Pennsylvania Mine* near Decatur* (Fig. 17)			Seven avalanches on south side of gulch near the Pennsylvania Mine; five on the other side above and below Decatur. (<i>Georgetown Courier</i>)
31.	March 27	Republican Mountain* near Silver Plume (Fig. 19)			Two avalanches that stopped short of bottom of mountain. (<i>Georgetown Courier</i>)
<u>1899</u>					
157.	February 4	Apex Gilpin County	Mrs. William Rudolph and two children	Cabin	Another child injured. Accident occurred on January 29. (<i>Georgetown Courier</i>)
32.	February 4	Republican Mountain* (Fig. 19)			First avalanche in Silver Plume area on January 30. Crossed railroad tracks. [Good technical details.] (<i>Georgetown Courier</i>)
33.	February 11	Republican Mountain* near Silver Plume (Fig. 19)			Powder avalanche down Bridal Veil Gulch February 7. (<i>Georgetown Courier</i>)
		Berthoud Pass Road [beyond Spruce Lodge]			Took 36 hours to get a team of horses out of the snow. January 28.
		Argentine Pass* (Fig. 16)			Three avalanches near Pennsylvania Mine blocked road. No damage. February 4.

No.	Date reported	Location	Fatalities	Damage	Remarks and source
34. 34A. 34B.	February 13	Willihan Gulch or Boom Ditch west of Cherokee Gulch* above Silver Plume (Fig. 19)	Domenic Destefane, his wife and two children. Joseph Tondini Peter Tondini John Tondini Gerondo Guenzi G. Bietto Enrico Novaria	Several mine buildings, five cabins	Avalanche occurred Sunday, February 12, and stopped near school house. Three others injured. Mr. Destefane's body was not recovered until April. [This is same gulch where three people were killed in 1875 [7]. Good technical details. See also 72.] (<i>Rocky Mountain News</i>) (<i>Georgetown Courier</i>)
35.	February 18	Republican Mountain,* Bridal Veil Gulch near Silver Plume (Fig. 19)	1 fox		Avalanche occurred February 12. Schools at Silver Plume and Brownsville closed until March 1 due to avalanche danger. Snow 8 feet deep at Yankee.
36.	February 25	Brown Gulch* and south and east slopes of Brown Mountain, Silver Plume (Fig. 19)	Dan Fitzpatrick Ben Nelson John Anderson 2 horses	One occupied cabin, a number of vacant cabins, engine house, ore house, boarding house, blacksmith's shop, two stables, part of office building	Slide occurred February 22. Debris went to Clear Creek. Snow 50 feet deep at mouth of gulch. [Good technical details. See also 72.] (<i>Georgetown Courier</i>)
37.	February 25	Near Empire Pass* (Fig. 19)			An avalanche that could be seen from Georgetown. [No other details.] (<i>Georgetown Courier</i>)
		East Argentine or Horseshoe Basin* (Figs. 16 and 17)	3 Italians		[No other details.]
		Stevens Mine* Stevens Gulch (Fig. 16)	1 deer		
38.	February 25	Republican Mountain* near Silver Plume (Fig. 19)			Large slide off Republican Mountain. No damage. February 17. (<i>Georgetown Courier</i>)
		Daily District [around Urad Mine west of Empire]			Seventeen slides. Some nearly 2 miles long.
40.	March 4	Josephine Mine* West Argentine (Fig. 16)		Ore house	Near Kelso Mountain (<i>Georgetown Courier</i>)
		Republican Mountain* near Silver Plume (Fig. 19)		Moline Tunnel blacksmith shop; damaged tramway, cabin, and another blacksmith shop	Crossed Silver Gulch leaving 50 feet of snow. Shot up Democrat Mountain several hundred feet. Fracture line was 15 feet deep and 1,000 feet long. Avalanche ran more than a mile. [Good technical details.]
41.	March 11	Bridal Veil Gulch above Silver Plume (Fig. 19)			Slow-moving, noisy avalanche March 8. (<i>Georgetown Courier</i>)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
<u>1900</u>					
43.	April 14	Silver Plume and vicinity (Fig. 19)		Roof of Seven-Thirty Mine compressor house	Six avalanches in area April 7. Work suspended at the Seven-thirty Mine. (<i>Georgetown Courier</i>)
44.	April 21	Silver Plume area (Fig. 19)			Eight feet of snow fell in 13 days. Many buildings damaged by snow. (<i>Georgetown Courier</i>)
<u>1901</u>					
45.	April 18	Grassy Mountain near Camp Frances 1 mile south of Ward and 14 miles west and 3 miles north of Boulder	W. J. Hannan F. M. Milner E. B. Fitzgerald W. H. Blair	Two railroad engines carried into the gulch	One other man injured but recovered. (Crossen 1962, p. 127)
<u>1902</u>					
46.	December 13	Upper Williams Fork, Grand County	William T. Smith		Accident happened December 8. Smith was tracking a wounded deer. (<i>Summit County Journal</i>)
<u>1903</u>					
47.	March 28	Bullion Property at Montezuma* (Fig. 17)			On March 23 five men carried over 1/2 mile. They had only slight bruises. (<i>Summit County Journal</i>)
<u>1905</u>					
48.	April 1	Arapahoe Claims, Argentine District		Forty sacks of high grade ore swept away	One man caught in avalanche but rescued by his companion. (<i>Georgetown Courier</i>)
<u>1906</u>					
49.	March 17	Santiago Mine* near Argentine Pass (Fig. 16)		Boarding house	Fifteen people escaped uninjured. Snow 8 to 9 feet deep. Accident happened March 16. (<i>Silver Plume Standard</i>)
<u>1907</u>					
52.	February 16	[Unknown]		A number of telephone poles, several sections of air pipe	Transcontinental Company. (<i>Georgetown Courier</i>)
<u>1909</u>					
53.	January 30	Santiago Mine* (Fig. 16)			No damage. (<i>Georgetown Courier</i>)
		Republican Mountain* (Fig. 19)			No damage.

No.	Date reported	Location	Fatalities	Damage	Remarks and source
53X.	February 10	Georgetown Loop Railroad (Fig. 19)			Railroad was closed by snow. (<i>Leadville Herald Democrat</i>)
1911					
54.	January 26	Santiago Mine* near Argentine Pass (Fig. 16)			No damage. Avalanche ran between Paymaster and Santiago Mines. (<i>Idaho Springs Mining Gazette</i>)
55.	January 28	Near Santiago Mine* (Fig. 16)			No damage. (<i>Georgetown Courier</i>)
1912					
56. and 57.	February 22	Ruby Mountain* west of Argentine Pass (Fig. 17)		Three or four steel towers of Colorado Central power line, two miners' cabins	Slide ran through timber. (<i>Idaho Springs Mining Gazette</i>) (<i>Georgetown Courier</i>)
58.	May 4				E. W. Fairchild retained to keep track of weather conditions, the locations of snow slides, and to measure their width and depth. Report to Montezuma and Western engineers. (<i>Georgetown Courier</i>)
1913					
59.	December 6	Sherman Mountain* near Silver Plume (Fig. 19)		Three houses damaged	Mrs. Benzo and her children were injured in one of the houses. (<i>Georgetown Courier</i>)
		Clear Lake 2-1/2 miles south of Georgetown* (Fig. 19)			Avalanche ran on December 4. One man caught but freed himself after 3 hours. (<i>Georgetown Courier</i>)
		Georgetown* area (Fig. 19)		One house, one chicken house	Avalanche ran on December 5. (<i>Georgetown Courier</i>)
		Close to Cashier Mine near Silver Plume			One man caught and carried to creek. (<i>Georgetown Courier</i>)
60.	December 11	Virginia Canyon near Idaho Springs	22 chickens	Chicken house, home	Rock and snow slide. (<i>Idaho Springs Mining Gazette</i>)
		Grass Valley		Barn	
		Near cemetery [Idaho Springs]		House	
61	December 11	Cashier Mine in Brown Gulch* above Silver Plume (Fig. 19)	1 mule		One man was caught, two others escaped. (<i>Idaho Springs Mining Gazette</i>)
63.	December 13	Empire and vicinity		Three houses	Several small slides. (<i>Georgetown Courier</i>)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
64.	December 13	Republican Mountain* Silver Plume (Fig. 19)			Two slides. One buried the wagon road opposite Loop Bridge under 20 feet of snow. (<i>Georgetown Courier</i>)
		Griffith Mountain* near Silver Plume (Fig. 19)	12 chickens	Two homes, chicken house	Slide occurred the previous week. (<i>Georgetown Courier</i>)
65.	December 13	Commonwealth Mine in East Argentine (Fig. 16)		Cabin	Two people escaped. (<i>Georgetown Courier</i>)
67.	December 20	Collier Mountain* near Montezuma (Fig. 17)	John Johnson	Cabin	(<i>Georgetown Courier</i>)
1914					
69.	January 3	Freeland, 4 miles west of Idaho Springs	John McKenzie		Avalanche occurred January 2. (<i>Georgetown Courier</i>)
		Idaho Springs	Man and wife [names unknown]	Home	Avalanche occurred December 31, 1913. (<i>Georgetown Courier</i>)
70.	March 21	Near Stevens Mine, * Silver Plume (Fig. 16)		Section of power line	(<i>Georgetown Courier</i>)
1916					
71. 71A. 71B.	January 7	A. P. Gulch on Kelso Mountain * near Silver Plume (Fig. 16)	Arthur H. Osborne Edward Collins		Ray Buckley escaped unhurt. Avalanche ran nearly 2,500 feet on January 6. (<i>Idaho Springs Mining Gazette</i>) (<i>Georgetown Courier</i>)
73.	March 11	Shoe Basin Mine,* Ruby Mountain west of Argentine Pass, 5 miles above Montezuma (Fig. 17)	August [Gust] Ostberg	Bunkhouse and barn	Ostberg was rescued alive but died next day. Avalanche ran on March 6. It was half mile long and 500 feet wide. It ran in a new place. (<i>Summit County Journal</i>)
1917					
74.	December 15	Red Mountain near Urad Mine, Berthoud Pass		Mill timbers and coal pile	Avalanche occurred about the time a number of earthquakes were recorded in Denver. (<i>Georgetown Courier</i>)
1920					
75.	May 1	Marshall dump at Colorado Central Mine		Steam shovel	Avalanche occurred April 24. (<i>Georgetown Courier</i>)
76.	May 22	Paymaster Tunnel* in East Argentine (Fig. 17)		Tunnel	(<i>Georgetown Courier</i>)
1921					
77. 78.	April 16 April 23	Griffith Mountain* near Georgetown (Fig. 19)		Home, stable	24-hour snowfall of 52 inches with 3.72 inches of water. Other estimates were 28 lb/ft ² , or about 5.4 inches water. (<i>Georgetown Courier</i>)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
77.	April 16	Sherman Mountain* near	Charles Sebelia		
78.	April 23	Silver Plume (Fig. 19)		Two homes, one was the Benso home mentioned in account 59	Two women and two girls were caught by the avalanche. One account says one woman and her daughter were rescued after 4 hours; another account says after 2 or more hours. (<i>Georgetown Courier</i>)
78. and 79.	April 23	Hanna Mountain 2 miles above Silver Plume			Large slide. No damage. (<i>Georgetown Courier</i>)
		Leavenworth Mountain* (Fig. 19)		Standpipe in pipeline	Three slides.
		Pay Rock Mill [Mine]* (Fig. 19)			Two small slides buried road.
		Silver Plume (Fig. 19)			Setting hen and her nest swept 400 feet. Only two eggs broken. Hen was still on nest when found. (<i>Georgetown Courier</i>)
1926					
80.	April 10	Blue Mountain on Berthoud Pass road		Telephone lines	This was probably what is now called the Dam Slide 3 ½ to 4 miles west of Empire. (<i>Georgetown Courier</i>)
81.	May 29	Santiago Mine* (Fig. 16)		All mine buildings swept away except boarding house	(<i>Georgetown Courier</i>)
82.	June 5	Kelso National Mine		Blacksmith shop	(<i>Georgetown Courier</i>)
1933					
83.	April 29				Record given for heavy snows back to 1876 in the Silver Plume-Georgetown area. (<i>Georgetown Courier</i>)
84.	April 29	Commonwealth Mill (Fig. 16)		Mill	Avalanche debris about 20 feet high below mill. (<i>Georgetown Courier</i>)
		Road between Georgetown and Silver Plume (Fig. 19)			About 20 small slides. (<i>Georgetown Courier</i>)
1936					
85.	April 4				Snow depths given for four "snow scales" in Clear Creek County for March 1936 and 25-year averages. (<i>Georgetown Courier</i>)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
<u>1937</u>					
86. 87.	February 13 May 29	Berthoud Pass Ski Area	Joseph Oppenheimer		Men disappeared February 7. Bodies recovered in late May, 1/2 mile from Berthoud Pass Inn. <i>(Georgetown Courier)</i>
			John S. Oberdorfer		
<u>1939</u>					
88.	March 24	Tower 724 of Shoshone – Denver 100,000-volt power line in Peru Creek* about 4-1/2 miles above Montezuma		One high voltage transmission tower smashed and thrown across Peru Creek	Tariff avalanche hit the tower on February 27. <i>(Summit County Journal)</i>
<u>1943</u>					
89.	March 12	Loveland Pass highway, 3 miles west of Silver Plume			Highway closed several days. Avalanche ran on March 10. <i>(Georgetown Courier)</i>
<u>1944</u>					
90.	March 31	Highway 6, 3 miles east of Loveland Pass [Seven Sisters Avalanches]	Adam Frazer	15-ton bulldozer carried 100 yards	Frazer was a Highway Department employee clearing the road. <i>(Georgetown Courier)</i>
<u>1945</u>					
91.	February 16	Highway 40 east side Berthoud Pass [Stanley Avalanche]	Harold B. Willis	Car	Carried off road in his car. Body recovered 550 feet below road. <i>(Georgetown Courier)</i>
<u>1947</u>					
93.	February 28	Loveland Pass, second switchback, west side			Highway maintenance truck caught. No injuries or damage. <i>(Georgetown Courier)</i>
94.	March 21	Loveland Pass			Two avalanches on the west side of the pass on March 16 blocked the highway for four days. One was 35 feet deep. <i>(Summit County Journal)</i>
<u>1948</u>					
95.	January 30	Rothchild Avalanche between Shoe Basin Mine* and Montezuma* (Fig 17)	Lonnie Burch		Avalanche ran on January 24 after 3 days of stormy weather. Debris was 15 feet deep and 200 feet wide. Burch, Fred Burford, Emmett Brophy, and a dog were hit by the avalanche. Dog freed the head of Burford and Brophy and located Burch's body. The first two freed themselves. <i>(Summit County Journal)</i>

No.	Date reported	Location	Fatalities	Damage	Remarks and source
96.	January 30	Loveland Pass	William Marquis Everette Dierks		Caught in avalanche while skiing near summit of Loveland Pass January 25. Jack T. Elliot, a companion, was also caught but dug himself free and went for help. (<i>Summit County Journal</i>)
97.	March 5	Seven Sisters, U.S. 6 near Loveland Basin Ski Area			Avalanche ran February 28. Car almost swept away but stopped in time. (<i>Georgetown Courier</i>)
98.	March 12	Griffith Mountain* [Alaska Mine] (Fig. 19)			Slides blocked portal. (<i>Georgetown Courier</i>)
99.	March 26	Mt. Parnassus			Small slide. (<i>Georgetown Courier</i>)
<u>1949</u>					
100.	April 5	Rainbow Run at Loveland Basin Ski Area.	Sidney Prather		Three others caught but dug themselves out. Accident happened April 1. (<i>Georgetown Courier</i>)
<u>1951</u>					
102.	February 9	Loveland Pass and Berthoud Pass			Road blocked on both sides of Loveland Pass on February 5 and again on February 7. Berthoud Pass road also closed by avalanches during this time. (<i>Summit County Journal</i>)

Table 4 — Chronological Summary of Avalanches in the Central and Northern Colorado Mountains

Locations marked with an * appear on the maps (Figs. 45-49, pages 203 through 207).

Account numbers in Tables 3 and 4 are basically in chronological order. An A or B suffix indicates a second or third account concerning the same event. An X, Y, or Z suffix is used to permit the insertion of previously undetected events into the established, chronological numbering scheme with minimum disturbance to it. Numbers out of sequence usually indicate cases where the first, or only, mention of an avalanche was found in a summary article that appeared well after the event. Omitted numbers are usually for accounts that do not mention avalanches or for accounts that have been deleted or reassigned from the original compilation.

No.	Date reported	Location	Fatalities	Damage	Remarks and source
<u>1862</u>					
103.	April 10	Cochetope Pass, 25 miles west of Saguache	John Aldrich		Victim was buried under 8 feet of snow, on or about March 18. (<i>Colorado Republican</i>)
104.	April 10	Near Washington Gulch,* 4 or 5 miles north of Crested Butte		Dozen unoccupied cabins	Avalanche occurred January 20. (<i>Colorado Republican</i>)
<u>1878</u>					
105.	February 7	Wheeler Mine, 3 miles above Montgomery	C. H. Colwell	Ore house	Accident happened February 3. (<i>Georgetown Courier</i>)
<u>1879</u>					
106.	December 25	Tucker Mountain* near Kokomo (Fig. 48)	N. C. Bassick		Slide ran December 18. (<i>Georgetown Courier</i>)
<u>1880</u>					
107.	January 15	Great Mountain near Middle Park [location unknown]	Henry Comstock		Slide occurred January 7. (<i>Georgetown Courier</i>)
108.	November 27	Bowen Pass between Jack and Illinois creeks in the southwest corner of the Never Summer Range	Thomas Gray Charles Eaton		Two others injured; one other escaped unhurt. Storm raging for 5 previous days. Avalanche occurred November 22. (<i>Leadville Herald Democrat</i>)
<u>1881</u>					
109.	January 6	Lackawana Gulch, * east side of Independence Pass (Fig. 45)	Frank Pulliam	Cabin destroyed	New snow was chest-deep in places. Accident happened January 2. (<i>Leadville Herald Democrat</i>)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
110. 110A.	January 16 January 18	Alice Logan Mine near Chalk Ranch			One man originally thought to be dead rescued from bottom of snow-filled mine shaft after 49 hours. (<i>Leadville Herald Democrat</i>)
111.	January 20	Horn Silver Mountain, 3 miles east southeast of Red Cliff	Cassius M. Price		
1882					
112. 112A. 112B.	December [?] December 21 December 23	Wolverine or Hidden Treasure Mine, 1 mile south of Bowen Mountain, Rabbit Ears Mountains	J[ules] C. Harmon		Avalanche ran on December 14. Body recovered June 10. (<i>Grand Lake Prospector</i>) (<i>Grand Lake Prospector</i>) (<i>Georgetown Courier</i>)
1883					
115.	January 29	Elk Lode near Irwin* (Fig. 47)	Michael Lawler		Thomas Owens caught but dug himself out. Accident happened January 27. (<i>Gunnison Daily Review-Press</i>)
116.	January 30	Mount Owen* near Irwin* (Fig. 47)	Frank Ranander [Rhineland?]	Buildings of the Durango, Ruby Chief, Howard Extension, and Oakes mines crushed to kindling wood.	Accident happened January 30. Seven men dug out alive. [The avalanche actually came down Ruby Peak, not Mount Owen.] (<i>Gunnison Daily Review Press</i>)
		Cinnamon Mountain,* 5 miles northwest of Gothic (Fig. 47)	J. W. Goodspeed		Avalanche occurred January 26. Body left until melt-out in spring. (<i>Gunnison Daily Review-Press</i>)
117. 117A.	January 31 February 2	Smith-Hill Anthracite Coal Mines,* 3 miles north of Crested Butte (Fig. 47)	Philip Carmin Logan Inman Louis Richards William Moore (?) Chas. Betts J. J. Raymond [Raymond Inman?]	Boarding house	Avalanche ran on January 31. Thirty-six men were in the boarding house. Fifteen were injured; four seriously. Slide was not very large. (<i>Gunnison Daily Review- Press</i>). [<i>Rocky Mountain News</i> , February 2, 1883, lists the fatalities as: Phillip Kermin, Raymond and Logan Inman, Louis Richards, and J. J. Raymond. It said 8 others were seriously injured and 13 “slightly wounded.”]
118.	February 8	On railroad 6 miles below Crested Butte* (Fig. 47)		Railroad engine left under about 20 feet of snow	(<i>Georgetown Courier</i>)
		Sheep Mountain* 2-1/2 miles southwest of Kokomo (Fig. 48)	Jas. Ryan	Team of horses and load of ore	Happened on January 31.
		Near Bonanza 14 miles north of Saguache		Engine house and one engine	Three men were badly injured but escaped after their tent was swept away.

No.	Date reported	Location	Fatalities	Damage	Remarks and source
		Red Peak near Frisco	Fred Plath		Buried under 30 or 40 feet of snow on February 3.
		Saponis Mine near Wolverine Mine, Rabbit Ear[s] Mountain, 1 mile south of Bowen Mountain	Jack Williams E. R. Doty Thos. Booth		Mike Flynn rescued from under 10 feet of snow after 18 hours. Avalanche ran on January 29.
119.	February 5	Tomichi [2 miles north of White Pine] (Fig. 46)		Nine unoccupied miners' cabins	Avalanche ran on February 2. Another avalanche at White Pine ran at about the same time. (<i>Gunnison Daily Review- Press</i>)
120.	November 28	Raj[...] Mine near the Montezuma Mine, near Aspen	Charlie Davis		Another man buried but got out. Avalanche ran on November 26. (<i>Leadville Herald Democrat</i>)
1884					
121.	February 15	On the Queen's Gulch trail between Aspen and Pitkin	John M. Riser James Mason		Avalanches occurred during the preceding week (<i>Daily Rocky Mountain News</i>).
122.	March 10	Magna Charta Mine near Tomichi* (Fig. 46)		Mine buildings	Avalanche came down Granite Mountain. Two men caught but escaped slightly injured. (Florin 1971, p. 72).
123.	March 15	Carey's Camp in Conundrum Gulch south of Aspen	J. M. Thorne J. P. Steeley S. E. Steeley J. F. Take J. E. Morris	Cabin	Dog was later rescued alive after 33 days (Wentworth 1950, p. 155 and Wentworth 1976, p. 121) Date of avalanche is uncertain.)
125.	March 14	Vallejo Mine near Aspen	Mike Higgins Billy O'Brian George Marshall John Megialty	Shaft house	Three to four feet of snow fell in 3 days. Ten feet of snow on mountain. Blizzard raging. Avalanche ran on March 4. (<i>Leadville Herald Democrat</i>)
126.	March 15	Woodstock,* [3.3 miles along the railroad west of the west portal of the Alpine Tunnel] (Fig. 46)	Martin Doyle Andra [Andrew] Doyle Katy Doyle Marielles [Marcella] Doyle Maggie Doyle Christopher Doyle J. S. Brown Joe Gerozo Joseph Royengo Jasper M. Caswell James Tracy George Alexander Michael Shea	Section house, telegraph office, water tank, other buildings	Two women rescued after burials of 2 and 3-1/2 hours. (<i>Salida Weekly Mail</i>) [Another report says the two women were buried for 12 and 15 hours. Avalanche occurred at 6 p.m., March 10. Royengo's body was recovered in mid-July.] (<i>Salida Weekly Mail</i>) [A lawsuit was filed in 1886 by the mother of the six Doyle children, charging Denver, South Park, & Pacific Railroad cut all the timber off the mountain for ties and timber, thus making the avalanche possible [133].]
127.	April 24	Black Canyon	Arthur Bratt	Rio Grande R.R. engine upset	One man injured. (<i>Georgetown Courier</i>)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
128.	May 1	Twin Lakes, 12 miles south southwest of Leadville			Eyewitness account says avalanche roared like thunder. Snow in Promeroy, Gordon, and Francis gulches released. Aspen trees 20-40 feet tall buried by flowing snow; trees 1-1/2 feet in diameter were snapped; others were pulled out by the roots. Air blast blew down trees outside the track. No injuries. Avalanche ran to valley floor a few days prior to May 1. (<i>Georgetown Courier</i>)
1885					
129.	March 28	Pearl Pass near Ashcroft	A. C. Adair		(Wentworth 1950) (<i>Gunnison Review-Press</i>)
129A.	April 1				
130.	April 27	Homestake Mine at head of West Tennessee Creek west of Tennessee Pass	Marton Borden Sylvester Borden Horace W. Matthews Joseph Matthews John Lock John Burns Charles Richards Chris Harvey Robert Campbell John Burnes	Three cabins	Slide thought to have occurred between February 20 and 25. Cabins were under 40 feet of snow. (<i>Denver Tribune- Republican</i>)
1886					
131.	January 19	Deadman's Gulch*, near Pitkin,* 2 miles south of Spring Creek Reservoir	1 horse		Three men and three horses caught. Took the men 4 hours to dig themselves out. (<i>Leadville Herald Democrat</i>)
132.	January 20	Aspen Mine on Aspen Mountain	John Rose	Engine house	Avalanche ran on January 19. (<i>Leadville Herald Democrat</i>)
		Last Chance Mine on Aspen Mountain			One-half hour after Aspen Mine avalanche. Did no damage
		Near Late Acquisition Mine	(Two men reported missing--no further report) 2 mules	Two ore wagons	
134.	January 22	Chalk Ranch at foot of Chalk Mountain* near Fremont Pass (Fig. 49)	1 timber wolf	Telegraph poles broken, railroad track carried 40 to 50 feet	112 shovelers opened 1,500 feet of Denver & Rio Grande Railroad covered by debris. (<i>Leadville Herald Democrat</i>)
135.	January 22	Near Speller's and Couers Chanis' cabin, vicinity of Maroon Pass	Albert Sloper Ira Hall James Hungerford David Pattenhall 6 mules		Twenty-seven avalanches in vicinity of Maroon Pass in past 3 days. (<i>Leadville Herald Democrat</i>)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
		Conundrum Gulch west of Leadville [actually this is south of Aspen]			Two men reported to be caught- at same place as the fatal accident of 2 years ago [123].
		Independence Pass, 15 miles southeast of Aspen (Fig. 45)	6-mule team		Driver rescued alive after a fall of nearly 1,000 feet.
136.	January 24	Near Summit City on Sheep Mountain* (Fig. 48)			Two men and a team of horses caught. One man dug himself out; the other was recovered injured after 1 hour's burial; horses were badly crippled. (<i>Leadville Herald Democrat</i>)
137.	January 26	Near Grizzley Gulch*, 5 miles south of Independence (Fig. 45)			Man caught in three avalanches. The first buried him to the waist; the second to his neck; the third covered him. He dug himself out after 4 hours. (<i>Leadville Herald Democrat</i>)
		Wheeler (Fig. 48)			Denver and South Park track was covered for 1/2 mile and D&RG track for 400 feet. Avalanche debris filled Ten Mile Creek. (<i>Leadville Herald Democrat</i>)
		Excelsior Mine in Poverty Gulch eight miles north of Crested Butte	John Goss William Alexander John St. John	Cabin and bunk house	Avalanche ran on January 24. Fourth man caught but dug himself out and went for help. (<i>Leadville Herald Democrat</i> .) (Vandenbusche 1980, p. 279.)
		Jessie Mine on Aspen Mountain		Machinery and Mining Buildings	Avalanche ran on January 24. (<i>Leadville Herald Democrat</i> .)
		White House Mountain in Crystal Basin	Robert Corey Mr. Collins	Cabin	Avalanche ran on January 24. (<i>Leadville Herald Democrat</i> .)
138.	January 26	Near the curved bridge on Fremont Pass* (Figs. 48 and 49)			Track walker rescued after being buried 5 hours. (<i>Leadville Herald Democrat</i>)
139.	January 27	Below the Independence Pass Road			Huge trees snapped and boulders dislodged. (<i>Leadville Herald Democrat</i>)
140.	January 28	Eagle Canyon below Red Cliff			Covered D&RG tracks 15-20 feet. Dammed Eagle River for 3 hours. (<i>Leadville Herald Democrat</i>)
141.	February 2	Railroad near Wheeler (Fig. 48)	Mr. McWilliams 2 unidentified men		(<i>Leadville Herald Democrat</i>)
142.	February 2	Birdseye* to Fremont Pass* (Fig. 49)			Snow and wind. Several slides burying tracks 10-20 feet deep. "Deeper snow had never been seen in Ten Mile District." (<i>Leadville Herald Democrat</i>)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
143.	February 11	Maroon Pass near Aspen			Party confined in small cabin for 26 days by avalanches. (<i>Leadville Herald Democrat</i>)
145.	April 21	Snowslide Peak near Chalk Ranch			April 18 a huge avalanche blocked the D & RG Railroad west of Fremont Pass. (<i>Leadville Herald Democrat</i>)
		Stage Road between Aspen and Leadville			Reports received that a stage coach had been swept off the road by an avalanche about twenty miles from Aspen.
147.	April 23	Freighter's Rest on Stage Road between Aspen and Leadville			Two stage coaches trapped by an avalanche that ran on April 19. No one hurt. (<i>Leadville Herald Democrat</i>)
		Above Alicante on D & RG Railroad over Fremont Pass*			Three trains snowbound by avalanches. Fifty men shoveling snow. No one hurt.
		Canyon west of Red Cliff			Two large avalanches. One in Homestake cut. Debris fifteen feet deep.
		One mile west of Fremont Pass*			Two Union Pacific Railroad engines stuck. Ninety men shoveling snow.
149.	April 23	Twenty miles from Aspen toward Leadville [above town of Independence*] (Fig. 45)	1 horse	Stage stopped by snow drifts	No one hurt. Storm so severe one man said he "had one horse by the tail and one by the bridle and could see neither of them." (<i>Leadville Herald Democrat</i>)
1888					
151.	January 7	Castle Creek near Aspen	Fred Rall ["Dutch Fred"]		Accident happened January 6 Another man caught but escaped. (<i>Colorado Graphic, Denver</i>)
1891					
152.	February 27	Bullion King Mine above Irwin,* 9 miles from Crested Butte (Fig. 47)	Mrs. Ropell Mrs. Clark Clark child Capt. B. F. Smiley	Home and boarding house "crushed like an eggshell"	Accident happened at 10 o'clock February 26. One man recovered after 4 hours badly hurt but alive. Slide started on Ruby Peak and traveled 1-1/2 miles. (<i>Denver Republican</i>)
153.	March 14	Jacob Straeder Mine on western slope of Poverty Gulch* north of Crested Butte (Fig. 47)	M. G. Creller Pat Murphy Jack Griffen	Cabin	Slide was over 1/2 mile wide. Tunneled 30 feet to locate cabin. Men's bodies were not found. (<i>Denver Republican</i>)
1892					
153X.	January 1	New York Mountain	Arthur H. Fulford		Body never found (Knight & Hammock 1965)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
1893					
154.	February 11	On railroad 1/2 mile west of Frisco [near Dickey]	John Lynch J. R. Smith	Rotary snowplow knocked off track and wrecked.	Three other men injured. Avalanche ran on February 10. (<i>Leadville Herald Democrat</i>)
		Railroad between Crested Butte and Ruby-Irwin (Fig. 47)	Two Italians reported to be covered by avalanche [unconfirmed]		No other data.
1897					
155.	February 27	Bainey Tunnel near Aspen	Charles Sweeney		Avalanche happened the previous week. (<i>Georgetown Courier</i>)
		Near Glenwood Springs			One slide 400 feet long, 250 feet wide, and 40 feet deep. Another was 1,500 feet long and 50 feet deep.
		Between Red Cliff and Tennessee Pass			Half a dozen slides covered railroad.
		Near Pitkin* (Fig. 46)	Martin Mentley	Cabin	Several other people injured.
1899					
156.	January 28	At a mine near Kokomo* (Fig. 48)	John Knodel		Happened on January 20. Also reported in <i>Rocky Mountain News</i> January 22, 1899. (<i>Summit County Journal</i>)
157.	February 4	Selma Mine near Kokomo* (Fig. 48)		Buildings and machinery	(<i>Georgetown Courier</i>) (<i>Rocky Mountain Daily News</i>) (<i>Rocky Mountain Daily News</i>)
157A.	February 3				
157B.	February 3	Near Red Cliff			Several slides. Party of shovelers buried by avalanche. No injuries.
		Near Shoshone, 9 miles east of Glenwood Springs		Railroad mail car, baggage car, tender	Two men badly injured. A D&RG Passenger train ran into avalanche debris on track. February 1.
		Same location near Shoshone	John McMahon J. Dempsey J. Mulvahill		In a work crew of forty or more, three were killed and six or seven were injured. The rest were caught but not injured. Three men were thrown into the river but swam out uninjured.
		Near Leadville			2,000 men shoveling snow to get train rolling.
		Between Independence* and Aspen	16 horses		Two boys and one horse escaped.
		Between Basalt and Aspen			Passenger train plunged into avalanche on February 1. Fifty men needed to dig it out

No.	Date reported	Location	Fatalities	Damage	Remarks and source
		Twin Lakes, 12 miles south southwest of Leadville	William Manning	Cabin	Avalanche ran on February 1 and threatened to destroy the town of Twin Lakes.
		Colorado Midland Railroad near Busk, Colorado			Passenger train blocked by an avalanche for nearly a week.
157X.	February 21	Shoshone			Rio Grande Train blocked by a snowslide that probably ran on February 20. (<i>Denver Evening News</i>)
158.	March 4	Granite Mountain* at Tomichi, 2 miles north of White Pine (Fig. 46)	Mrs. Atta (Alta) Stout	Boarding house and mine buildings at the Magna Charta Mine	Avalanche ran at 9:00 am, March 2. One Sweezy child and M. C. Smith rescued uninjured. Avalanche ran 100 feet up an adverse grade and hit a two-story house. The bodies of Mr. Sweezy and his son were recovered in the spring. (<i>Rocky Mountain News</i>) (<i>Gunnison News</i>)
158A.	March 10		Mrs. Sweezy Mr. Sweezy Sweezy child		
158X.	March 10	Winfield Fourteen miles west of Granite	6 year old Payne boy	Many homes	Father, mother and two other children injured. (<i>Denver Evening Post</i>)
158Y.	March 25	Railroad at Shoshone		Railroad track carried away	The fourth large avalanche at this spot since January.
		Marshall Pass southeast of Monarch Pass			Marshall Pass opened after being blocked for thirty hours. (<i>Denver Evening Post</i>)
159.	December 23	Ten Mile Canyon near Frisco			Henry Recen caught in avalanche but dug himself out. (<i>Summit County Journal</i>)
1900					
159X.	February 5	Half mile above Curtin in Ten Mile Canyon			Train encountered avalanche debris that delayed it for ten days. (Poor 1976, p. 367)
160.	February 17	Near Leadville	Ernest Wendland		Accident was on February 7. (<i>Summit County Journal</i>)
160X.	February	Slate Creek Canyon four miles below Crested Butte		Seven Railroad Cars reduced to matchsticks	No day given. (Brown, 1968)
161.	March 3	Enterprise Group {of mines} in Taylor River area	Henry Wyse Ed Robinson Tom McDermitt		Accident happened on or about March 1. (<i>Summit County Journal</i>)
		About same place	James Bickford		
162.	April 7	Uneva Station in Ten Mile Canyon			Several snowslides. One was 300 feet wide. C&S rail traffic delayed 4 days. (<i>Summit County Journal</i>)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
163.	April 21	Ready Cash Mine in		A "number of	Sam Kibler rescued alive after 18 hours.
163A.	April 28	Iowa Gulch near		buildings" carried	(Summit County Journal) (Summit County
		Leadville		away	Journal)
<u>1901</u>					
164.	May 4	Near Amethyst, 1 or 2	7 mountain sheep		(Summit County Journal)
		miles south of Creede			
<u>1902</u>					
165.	February 2	Boulder Peak, 12 miles	James G. Fish		Slide ran at 8:30 a.m., February 1, another
165A.	February 5	north of Dillon			person carried several hundred feet without
					injury. (Rocky Mountain News)
<u>1903</u>					
165X.	April 3	Brown's Canon		Train wrecked	A Denver & Rio Grande passenger train ran
		between Buena Vista and			into a snowslide. (Denver Post)
		Salida			
<u>1904</u>					
165Y.	February 15	Hard Cash Mine near	D.D. Moak		Avalanche ran on February 11. (Denver
		Elko, just west of			Post)
		Schofield Pass			
166.	February 19	Logging camp on Cattle	Jack Ellis		Avalanche ran on February 18 and was 25
		Creek, 4 miles south of	John Brown		feet deep. Other accounts say camp was on
		Aspen.	Frank Manning		Castle Creek. There is no Cattle Creek in
			William Hampton		the area. "Snowfall much below average--
					first avalanche of the season." (Leadville
					Herald Democrat)
166A.	February 19	Logging Camp			110 men in search party. Three bodies
		on Castle Creek 5 miles			recovered. (Denver Post)
		south of Aspen			
166B.	February 20				Body of William Hampton found beneath
					twenty-five feet of snow. (Denver Post)
166X.	February 23	Near the Augusta Mine	Pete McQuade		Three others caught but escaped. (Denver
		in Poverty Gulch* north	Joseph Ferreri		Post)
		of Crested Butte	Peter Sterle		
			Joseph Slogar		
			Michael Vidmar		
			Tony Stenicha		
<u>1905</u>					
166Y.	March 16	One half mile from the			Avalanche debris covered the railroad for
		east end of the Alpine			300 feet and at a depth of eighteen feet.
		Tunnel			(Poor 1976, p. 380)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
1906					
167.	January 20	Uneva Station on Colorado Southern Railroad in Ten Mile Canyon			Three railroad cars knocked off track on January 17. Fifteen people in the cars. No one seriously hurt. (<i>Summit County Journal</i>)
168.	March 14	On Denver & Rio Grande tracks, 4 miles from Redstone		Train hit; one coach turned over; engine derailed. Company store hit; five loaded cars of coal swept away	Numerous slides. One ran on March 12. No one hurt. (<i>Rocky Mountain News</i>)
169.	March 17	Ten Mile Canyon and headwater of Arkansas River			Several slides interrupt rail traffic. (<i>Summit County Journal</i>)
170.	March 24	Vicksburg, 4 miles down Clear Creek Canyon from Winfield [17 miles northwest of Buena Vista]	Harry Wisenborn, and four other men [missing and presumed dead]		"Perilous conditions exist" at Winfield. (<i>Leadville Herald Democrat</i>)
171.	April 1	Short distance east of Alpine Tunnel* (Fig. 46)			Rotary plow broke down in 18 feet of snow. (<i>Leadville Herald Democrat</i>)
1907					
172.	February 5	Monarch, 1-1/2 miles above Garfield or 3 miles north of Monarch Pass (Fig. 36)			Avalanche ran on February 4. Slide started above and north of Fairplay Mine and came over the April Fool group. (<i>Salida Mail</i>)
172A.	February 6		FATALITY list revised to: Fred Nason Mrs. Nason Charles Gillette James Boyle Steve Skinner Jack Emerson	Boarding house-saloon demolished and carried across street, home demolished	Twenty-two people rescued alive including the six Nason children. (<i>Rocky Mountain News</i>)
172B.	February 8				Slide started from a gulch east of the Madonna Mine and 1,000 feet above the camp. James Smith badly injured and expected to die. Four-year-old Edward Nason rescued uninjured after 14 hours. (<i>Salida Record</i>)
173.	February 8	Eclipse Mine near Monarch, about 1 mile above the February 4 avalanche and on the same ridge	F{rancis} Y{ork} Harris	Buildings of Eclipse Mine destroyed	Avalanche ran night of February 6. (<i>Salida Record</i>)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
173A.	February 8				Avalanche was 3/4 mile south and “on opposite side of the mountain” from the first. James Smith, injured in first slide now given fair chance for survival. The young Nason child rescued after 11 hours. (<i>Salida Mail</i>)
174.	February 6	South Park Branch and Alpine Tunnel Branch of Colorado & Southern Railroad			Rail traffic halted by nine slides between Climax and the 3-Mile Tank near Leadville. (<i>Rocky Mountain News</i>)
175.	February 9	On stage road above North Fork of Mosquito Creek in Mosquito Range near Leadville	L. B. Monson		Accident happened on February 7. (<i>Rocky Mountain News</i>)
176.	February 12	Butte Mine in Mosquito Range between Alma and Leadville		Butte Mine building crushed under 25 feet of snow	Avalanche ran on February 10. Man buried but pulled himself out. (<i>Rocky Mountain News</i>)
<u>1909</u>					
176X.	February 8	Wookstock Avalanche Path on South Park and Pacific Railroad west of the Alpine Tunnel			Avalanche covered tracks for 500 feet and was 40 feet deep. Rotary plow took seven days to clear the tracks. (Poor 1976, p. 367)
177.	February 10	Shoshone, near Glenwood Springs		Stage hit, no one hurt	One of the worst storms ever to hit Colorado. Slides block many railroads in state. (<i>Leadville Herald Democrat</i>)
178.	February 24				Hardest winter since 1884 in Eagle River country. (<i>Leadville Herald Democrat</i>)
178X.	February (no day given)	Augusta Mine in Poverty Gulch		Mine buildings, tram and mill	(Vandenbusche. 1980, p. 279-282)
<u>1911</u>					
179.	February 4	Madonna Mine, near Monarch		150 feet of Madonna Mine tram taken out	George Barnes was carried 2,000 feet down the mountain and injured. (<i>Summit County Journal</i>)
<u>1912</u>					
179X.	March 7	Quarry Town at Yule Quarry south of Marble	David Davis		Body recovered March 15. (Vandenbusche and Myers 1970, p. 59 and 71)
180.	March 9	Ten Mile Canyon above Curtain Station (Fig. 43)			Slide on March 6 blocked rail traffic. (<i>Summit County Journal</i>)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
181.	March 20	Marble, up the Crystal River from Carbondale		Marble finishing mill flattened, railroad engine turned over	Avalanche hit mill between shifts. As many as 300 men could have been in the mill. (McCoy and Collman 1973, p. 148-149) (Vandenbusche 1980, p. 240)
181X.	March	Bulkey Coal Mine on Whetstone Mountain south of Crested Butte	Frank Orazem	Mine buildings and tramway damaged; coal car over turned	No day was given for this accident. Six men carried 500 feet down the mountain. (Vandenbusche 1980, p. 219)
1916					
182.	January 22	Gordon Tiger Mine on Parry Peak near Twin Lakes	Fredrick Suttler John R. Remine	All the surface buildings at Gordon Tiger Mine swept away	Slide ran on January 19. This was one of nine slides in the area. (<i>Summit County Journal</i>)
182X.	January 26	Marble			Three large avalanches stopped by a large stone retention wall in the run-out zone. (Vandenbusche and Myers 1970, p. 90-96)
183.	January 29	Leadville	2 unidentified people		No other details given. (<i>Summit County Journal</i>)
184.	February 11	Baxter Pass, 50 miles northwest of Grand Junction			Snowslide 40 feet deep covered railroad track for 2,700 feet (<i>Idaho Springs Mining Gazette</i>)
185.	February 12	Colorado and Southern Railroad between Leadville and Birdseye Station* (Fig. 49)		Passenger coach of train turned over, baggage car derailed	One passenger slightly injured. (<i>Summit County Journal</i>)
185X.	March 2	Near Chipeta Falls in Black Canyon of Gunnison River	C. W. Matthews Earl Levy	Several railroad cars and a railroad wrecker	Numerous avalanches as the result of thawing weather (Vandenbusche 1980, p. 117).
186.	March 11	Shoshoni [sic] in Glenwood Canyon and Kildare near Leadville		Two slides across railroad tracks	Slides along railroads. No one hurt. (<i>Summit County Journal</i>)
1917					
187.	March 2	One-half mile below Crested Butte (Fig. 47)		Day coach, baggage car, and engine knocked off track and overturned	Two snowslides. No one seriously injured. (<i>Idaho Springs Mining Gazette</i>)
1918					
188.	March 2	Uneva Station in Ten Mile Canyon			Railroad traffic stopped by many slides between Frisco and upper end of Ten Mile Canyon. Largest one was at Uneva. (<i>Summit County Journal</i>)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
<u>1920</u>					
189.	February 28	Near Wheeler	1 horse		One man caught but not seriously injured; dug himself out after one hour. (<i>Summit County Journal</i>)
189X.	February [no day given]	Snowslide Bridge en route to Doctor Mine	Bruce Adrian Steve Suslikov		A third man was caught but dug himself out after three hours. (Vandenbusche 1980, p. 327)
190.	March 6	Colorado Southern Railroad between Dillon and Leadville		Engine's front wheels derailed when train hit snowslide	First serious encounter with avalanche this winter. Many slides down in Ten Mile Canyon. (<i>Summit County Journal</i>)
191.	June 5	Middle Park [exact location not given]	10 elk		(<i>Georgetown Courier</i>)
<u>1922</u>					
192.	February 11	Ten Mile Canyon near Curtain			First slide of the season halts rail traffic. (<i>Summit County Journal</i>)
193.	February 18	Near Kokomo* (Fig. 48)	1 horse		Bob Recen caught and injured. (<i>Summit County Journal</i>)
193X.	February 18	Denver Rio Grande Railroad west of Rollins Pass	Paul Paulson William Monganis George Monganis George Karnabas	Locomotive	Locomotive knocked off track and rolled 700 feet down hillside. Four men killed; two injured. (Bollinger 1979, p. 203-205 and <i>Denver Post</i> February 20, 1922.)
194.	February 25	Mile Post 124 and Curtain on Colorado Southern Railroad, Ten Mile Canyon			Slide at Mile Post 124 was 200 feet long and 10 feet deep. Another slide at Curtain. (<i>Summit County Journal</i>)
195.	December 16	Colorado and Southern Railroad between Kokomo* and Frisco (Fig. 48)			One of worst storms in many years at Breckenridge. Several slides near Curtain. (<i>Summit County Journal</i>)
<u>1923</u>					
196.	March 24	Ten Mile Canyon near Solitude			Storm raging for 13 days. Seven slides near Solitude. Snow debris twice as deep as telegraph poles. (<i>Summit County Journal</i>)
<u>1926</u>					
197.	May 8	Near Uneva Station in Ten Mile Canyon			"Big Mike" ran on May 3. Debris was 40 feet deep and 200 feet long. (<i>Summit County Journal</i>)
<u>1927</u>					
198.	February 26	Ten Mile Canyon near Curtain			Forty slides across Colorado and Southern tracks. Most troublesome are near Curtain, others 2 miles west of Climax. (<i>Summit County Journal</i>)

Historic Avalanches (Martinelli & Leaf)

No.	Date reported	Location	Fatalities	Damage	Remarks and source
199.	March 5	Near Monte Vista (31 miles northwest of Alamosa)	James Allen		Two other men injured. (<i>Summit County Journal</i>)
200.	March 5	Uneva Station Ten Mile Canyon			Slide was 100 feet long and 25 feet deep. It ran March 4. (<i>Summit County Journal</i>)
201.	April 23	Uneva Station Ten Mile Canyon			On April 18 the engineer stopped the train in time to allow "Big Mike" avalanche to run in front of the train. (<i>Summit County Journal</i>)
<u>1928</u>					
202.	March 9	Ten Mile Canyon			Heavy fall of snow caused all the well-known slides to run at once. A total of 1,140 feet of track was covered as deep as 40 feet in places. (<i>Summit County Journal</i>)
<u>1929</u>					
203.	March 29	Ten Mile Canyon			Several slides blocked trains. (<i>Summit County Journal</i>)
<u>1930</u>					
204.	April 11	Ten Mile Canyon			"Big Mike" avalanche was 35 feet deep and 150 feet long. (<i>Summit County Journal</i>)
<u>1945</u>					
205.	February 23	Chalk Bluff [near Climax]	Allen T. Layman		Caught while skiing in his backyard. Avalanche occurred February 17. (<i>Summit County Journal</i>)

Table 5 — Alphabetical Listing of Place Names Mentioned in the Avalanche Accident Accounts of the Northern Front Range

The number of the newspaper accounts and the U.S. Geological Survey topographic maps covering the area are given when known. Many of the places, especially the mines, are not on modern maps.

Places marked with an * appear on the map segments included as Figures 16 to 19, pages 83 through

86.

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Adit-Dew Drop Tunnel [near Camp Frances]	45	Ward
Alaska Mine [on Griffith Mountain* near Georgetown*] (Fig. 19)	98	Georgetown
A.P. Tunnel [the east portal is on the north slope of Kelso Mountain* near the mouth of Sonora Gulch] (Fig. 16)	71, 71A	Greys Peak
Apex on Pine Creek 5 ½ miles northwest of Central City	157	Central City
Arapahoe Claims - Argentine District [exact location unknown]	48	Greys Peak and/or Montezuma
Argentine [Mining] District [headwaters of Peru, Leavenworth, and Steven's creeks (Lovering and Goddard 1950, p. 135)] [see also: West Argentine and East Argentine]	48, 51, 56, 78	Grays Peak and Montezuma
Argentine Pass* (Figs. 10 and 16)	33, 57, 73, 198	Grays Peak
Atlantic Mine [location unknow. Probably near Pinkerton Gulch west of Silver Plume]	14	Greys Peak or Georgetown
Atlantic Mine* [about midway between Bullion Mine* and Sarisfield Mine* on Collier Mountain* near Montezuma*] (Fig. 17)	28	Montezuma

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Baker Mine [on east slope of Kelso Mountain* at an elevation of about 12,000 feet] (Fig. 16)	4	Grays Peak
Bakerville [old town about 4 miles west of Silver Plume, near mouth of Quayle Creek and Greymont]	15, 23	Grays Peak
Baltimore Tunnel [on McClellan Mountain*] (Fig. 16)	27	Grays Peak
Beaver Brook [near Griffith Mountain* and Georgetown] (Fig. 19)	62	Georgetown
Beeched Gulch [near Georgetown; now called Silver Gulch*]	19	Georgetown
Berthoud Pass [Highway 40]	33, 80, 91, 92, 101, 102	Berthoud Pass
Berthoud Pass Ski Area [at Berthoud Pass]	86, 87	Berthoud Pass
Big Five Mine [near Ward] (Figs. 7, 8 and 9)	45	Ward
Big Professor Mountain [Called Mount Sniktau* on modern maps]	29	Greys Peak
Blackhawk	44	Blackhawk
Blue Mountain [between Berthoud Pass and Empire]	80	Berthoud Pass
Boom Ditch [Republican Mountain* near Silver Plume] (Fig. 19)	34B	Georgetown
Bridal Veil Falls [Gulch] [Republican Mountain* near Silver Plume] (Fig. 19)	21, 33, 34, 35, 41	Georgetown
Brown Gulch* [near Silver Plume] (Fig. 19)	34, 35, 36, 38, 61	Georgetown
Brown Mountain* [near Silver Plume] (Figs. 5 and 19)	14, 36, 39, 61, 72	Georgetown

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Brownville [sometimes spelled Brownsville, suburb of Silver Plume on Clear Creek, directly below the Seven-Thirty Mine, wiped out by mud slide in June 1912] (Brown 1968, p. 61-67)	12, 15, 34, 35	Georgetown
Bullion Property* [at Montezuma] (Figs. 17 and 18)	47, 165	Montezuma
Camp Francis [sometimes spelled Frances, near Ward] (Figs 7, 8 and 9)	45	Ward
Cashier Mine* [on Teller Mountain south of Montezuma] (Fig. 18)	13	Montezuma
Cashier Mine [near the Seven-Thirty Mine* above Silver Plume]	59, 61	Georgetown
Cemetery [Idaho Springs]	60	Idaho Springs
Centennial Dump [near Georgetown]	44	Georgetown
Champion Lode [property] [Geneva Mining District, head of Snake River*] (Fig. 18)	6, 10	Montezuma
Chihuahua* [site of] [Croft(1881, p. 86) says it was 1-1/2 miles west of Decatur on Middle Snake River] (Fig. 17)	16	Montezuma
Cherokee Creek* or Gulch [near Silver Plume] (Fig. 19)	34, 34B, 62, 72	Georgetown
Churches Mill [on Democrat Mountain* near Silver Plume] (Fig. 19)	8	Georgetown
Clear Lake [on South Clear Creek 2-1/2 miles south of Georgetown]	59	Georgetown
Collier Mountain* [near Montezuma] (Fig. 17)	17, 28, 67	Montezuma

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Colorado Central Mine [near the Marshall Tunnel on south slope of Leavenworth Mountain]	75	Georgetown
Colorado Central Power Line [Argentine Mining District]	56, 57	[Unknown]
Commonwealth Mill [location unknown]	84	[Unknown]
Commonwealth Mine [east of McClellan Mountain*] (Fig. 16)	65	Greys Peak
Corry City Mine* [near Silver Plume] (Fig. 19)	34, 34B	Georgetown
Cozens Ranch [west side of Berthoud Pass]	33	Fraser
Daily [Mining] District [includes Urad Mine east of Berthoud Pass]	38, 74	Berthoud Pass
Dam Slide [south of Highway 40 just west of Empire]	80	Berthoud Pass
Decatur* [town site] [1/2 mile away and across stream from Pennsylvania Mine* (Wolle 1949, p.136)] (Fig. 17)	16, 30	Montezuma
Delaware Mine [near Decatur*]	16, 30	Montezuma
Democrat Mountain* [near Silver Plume] (Fig. 19)	8, 19, 39, 40, 62, 72	Georgetown
Dillon [town of]	46	Dillon and Frisco
Duluth and Empire Mining Company [near Empire?]	63	Georgetown
East Argentine [Mining] District [the part of the Argentine mining district east of the Continental Divide]	37, 49, 54, 65, 76	Greys Peak
Empire	63, 78, 85	Empire
Empire Pass* [near Georgetown](Fig. 19)	37	Georgetown

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Empire Tunnel [300 feet east of Empire]	63	Empire
Freeland [3 miles west of Idaho Springs]	69	Idaho Springs
Geneva Gulch* or Creek (Figs. 17 and 18)	11, 12, 39, 72	Montezuma
Georgetown (Fig. 19)	12, 19, 44, 62, 64, 66, 78, 83, 84	Georgetown
Georgetown Loop Railroad* [between Georgetown and Silver Plume] (Fig. 19)	53X	Georgetown and Montezuma
Gilman Mine [in Geneva Gulch]	12	[Unknown]
Glacier Mountain	13	Keystone
Grand View Mine [Tunnel] [near Silver Plume]	20	Georgetown
Grass Valley [near Idaho Springs]	60	Idaho Springs or Squaw Mountain
Grassy Mountain [near Ward]	45	Ward
Griffith Gulch [probably one of the gulches on the northwest flank of Griffith Mountain]	44, 62	Georgetown
Griffith Mountain* [near Georgetown] (Fig. 19)	62, 64, 66, 68, 77, 78, 98	Georgetown
Hall Gulch [Valley] [upper part of the North Fork of the South Platte River] (Figs. 2 and 18)	1, 9	Montezuma
Hanna Mountain [on modern maps as Silver Plume Mountain 2 ½ miles northwest of Silver Plume]	14, 39, 72, 78	Greys Peak
Horseshoe Basin* [near Argentine Pass] (Figs. 16 and 17)	37	Montezuma and Greys Peak

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Idaho Springs	69	Idaho Springs
Illinois Lode* [west of Cherokee Creek on Republican Mountain] (Fig. 19)	59	Georgetown
Josephine Mine* [near Kelso Mountain] (Fig. 16)	40, 42, 71, 71A	Greys Peak
Kelso Mountain* [about 4 miles southwest of Silver Plume] (Fig. 16)	4, 25, 71A	Greys Peak
Kelso National Mine [shown as Grizzly Tunnel* in Grizzly Gulch] (Fig. 16)	82	Greys Peak
Leavenworth Mountain* (Fig. 19)	34A, 78	Georgetown
Loop [station on railroad west of Rollins Pass]	79X	East Portal
Loop Bridge [on railroad between Georgetown and Silver Plume] (Fig. 19)	64	Georgetown
Loveland Pass [Highway 6, west of Silver Plume]	85, 89, 90, 92, 93, 94, 96, 97, 99, 102	Loveland Pass
Loveland Basin Ski Area [east side of Loveland Pass, at east portal of Eisenhower Tunnel]	90, 100	Loveland Pass
Maine Mine [near Silver Plume] (Fig. 5)	34B, 72	Georgetown
McClellan Mountain* (Figs. 10 and 16)	24, 27, 34A	Greys Peak
Marshall Dump [south slope of Leavenworth Mountain]	75	Georgetown
Mary Meyers Dump [on Republican Mountain]	53	Georgetown
Moline Tunnel* (Fig. 19)	19, 40	Georgetown
Montreal Mine [Brown Mountain* near Silver Plume] (Figs. 5 and 19)	36	Georgetown

Place names	Newspaper accounts in which place is mentioned	Map
		(scale is 1:24,000 unless otherwise noted)
Montezuma* [Fig. 17]	2, 17, 28, 47, 67, 73, 88, 95	Montezuma
Mt. McClellan Mines [location unknown]	65	[Unknown]
Mount Parnassus [about 5 miles west-northwest of Silver Plume]	99	Greys Peak
North Fork of the South Platte River [also called Hall Valley]	1	Montezuma
North Star Mine [near the Santiago Mine on east slope of McClellan Mountain*]	54, 55	Greys Peak
Paymaster Mine [Tunnel] [near the Santiago Mine* on the east slope of McClellan Mountain*] (Fig. 16)	49, 54, 76	Greys Peak
Payrock Mill [near Silver Plume]	78	Georgetown
Pelican Mine* [near Silver Plume] (Figs. 5 and 19)	34, 34A, 34B	Georgetown
Pelican Road (Figs. 3, 4, and 21)	43	Georgetown
Pennsylvania Mine* [1/2 mile from Decatur and across the stream](Wolle 1949, p. 136) (Fig. 17)	16, 30, 33	Montezuma
Peru Creek* [near Montezuma] (Fig. 17)	88	Montezuma
Peruvian Mine [near Decatur] (Fig. 17)	30	Montezuma
Pilot Mine [on Collier Mountain*]	17	Montezuma
Queen of the West Mine [near Decatur]	30	Montezuma
Red Mountain [near Empire]	74	Berthoud Pass

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Republican Mountain* [near Silver Plume] (Fig. 19)	19, 20, 21, 31, 32, 33, 34B, 38, 39, 40, 53, 62, 64, 72	Georgetown
Revenue Mineral Company [in Geneva Basin*] (Fig. 18)	12	Montezuma
Revenue Mountain* [in Geneva Gulch] (Fig. 17)	12	Montezuma
Revenue Tarriff Mine [see Tarriff] [near Decatur]		
Roe Mine [on Brown Mountain near Silver Plume]	22	Georgetown
Rothchild Avalanche [Starts in the cirque just east of the Cooper Mountain* Summit and runs to Peru Creek* just west of Cinnamon Gulch*; also called Tariff Slide.] (Fig. 17)	95	Montezuma
Ruby Mountain* [near Argentine Pass] (Fig. 17)	57, 73	Montezuma
Santiago Mine* [2 miles above Waldorf at elevation of 12,000 feet in East Argentine Mining District] (Figs. 10 and 16)	49, 50, 51, 53, 54, 55, 81	Greys Peak
Seven-Thirty Mine* [on Brown Mountain near Silver Plume] (Figs. 6 and 19)	22, 26, 34, 35, 36, 43, 44, 61, 62, 72	Georgetown
Seven Sisters Avalanches [Highway 6 near Loveland Basin Ski Area]	90, 97	Loveland Pass
Sherman Mountain* [near Silver Plume] (Figs. 5 and 19)	7, 34, 34B, 39, 59, 62, 72, 77, 78	Georgetown and Greys Peak
Shively Mine [on Brown Mountain near Silver Plume]	14	Georgetown
Shoe Basin Mine* (Fig. 17)	73, 95	Montezuma
Shoshone-Denver high voltage line up Peru Creek* [near Montezuma] (Fig. 17)	88	Montezuma

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Silver Gulch* [Creek] [also called Beeched Gulch near Georgetown] (Fig. 19)	5, 40, 44	Georgetown
Silver Plume* [town of] (Fig. 19)	7, 34, 34A, 34B, 35, 43, 44, 59, 61, 64, 66, 72, 77, 78, 79, 83, 84	Georgetown
Silver Queen Mine [near Silver Plume]	7	Georgetown
Snake River [near Montezuma] (Fig. 17)	10	Keystone and Montezuma
Sonora Gulch [north slope of Kelso Mountain]	25, 71, 71A	Greys Peak
South Plume	34A	Georgetown
Spruce Lodge [west side of Berthoud Pass]	33	Berthoud Pass
Stanley Avalanche [Highway 40 between Berthoud Pass and Empire]	91	Berthoud Pass
Stevens Mine* [on the west side of McClelland Mountain] (Figs. 10 and 16)	3, 37, 70	Greys Peak
Stewarts Mill [near Georgetown]	5	Georgetown
Straight Creek [near the junction of Summit, Grand, and Clear Creek counties]	46	Loveland Pass
Tariff Slide [also called Rothchild avalanche]	30, 88	Montezuma
Taylor's Cabin [location unknown]	25	[Unknown]
Taylor Gulch [near Silver Plume or Georgetown]	44	[Unknown]
Urad Mine [8 miles west of Empire]	74, 85	Berthoud Pass
Virginia Canyon [near Idaho Springs]	60	Central City and Idaho Springs

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Waldorf Mine* (Figs. 10 and 16)	70, 85	Greys Peak
Ward	45	Ward
West Argentine Mining District [the part of the Argentine mining district west of the Continental Divide]	17, 40, 71	Greys Peak
Whale Mine* [in Hall Valley 3.9 miles south southeast of Montezuma] (Figs. 2 and 18)	9	Montezuma
Wilcox Tunnel [East Argentine Mining District]	76	Greys Peak or Montezuma
Williams Fork Creek [in Grand County near the head of Straight Creek]	46	Loveland Pass
Willihan Gulch [Ravine] [Republican Mountain* near Silver Plume] (Fig. 19)	34, 34B, 72	Georgetown
Willow Gulch [between Brown and Hanna Mountains near Silver Plume; called Pinkerton Gulch on modern maps]	14	Greys Peak
Wisconsin-Central Lode [Kelso Mountain*] (Fig. 16)	25	Greys Peak

Table 6 — Alphabetical Listing of Place Names Mentioned in the Avalanche Accident Accounts of the Central and Northern Colorado Mountains

The number of the newspaper accounts and the U.S. Geological Survey topographic map covering the area are given when known. Some of the places, especially the mines, are not on modern maps. Places marked with an * appear on the map segments included as Figures 45 to 49, pages 203 through 207.

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Alicante [station on the High Line of the Colorado and Southern Railroad, 1-1/2 miles south of Climax at Mile Post 138.96] (Fig. 49)	147	Mt. Lincoln (1:62,500) Climax
Alice Logan Mine [near Chalk Ranch which was on Chalk Creek*] (Fig. 49)	110A	Mt. Lincoln (1:62,500)
Alma [5 – 5 ½ miles south of Hoosier Pass]	105, 175, 176	Alma
Alpine Pass [just east of the Alpine Tunnel on the Denver, South Park, and Pacific Railroad between Pitkin and St. Elmo] (Fig. 46)	171	Sheet 5 of 6, Gunnison County maps (1:50,000)
Alpine Tunnel* [on Colorado and Southern Railroad between Pitkin and St. Elmo] (Fig. 46)	128X, 133, 165X, 166Y, 171, 174, 176X	Sheet 5 of 6, Gunnison County maps (1:50,000)
Amethyst [old railroad town 1 or 2 miles south of Creede, in a narrow gulch on East Willow Creek. Also called Jimtown, Gintown, and Creedmore (Wolle 1949, p. 321)]	164	Creede (1:62,500)
April Fool Mine [on Monarch Mountain]	172, 172B	Garfield (1:62,500)
Ashcroft [12 miles up Castle Creek from Aspen]	129, 129A	Hayden Peak
Aspen	125, 129, 132, 137, 139, 145, 151, 154, 155, 157, 157B, 166	Aspen

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Aspen Mine [on Aspen Mountain at an elevation of about 8,900 feet in Vallejo Gulch (Spurr 1898, p1. XXV)]	132	Aspen
Aspen Mountain [near Aspen]	123, 125, 132, 137	Aspen
Augusta Mine [above timberline in Poverty Gulch,* north of Crested Butte] (Fig. 47)	153, 166X	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Bainey Tunnel [near Aspen]	155	Aspen
Basalt	157	Basalt
Baxter Basin* [south of Poverty Gulch* in upper Slate River drainage] (Fig. 47)	153	Oh-Be-Joyful
Baxter Pass [50 miles northwest of Grand Junction]	184	Baxter Pass
Belmont Tunnel [near Irwin]	115	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Ben Bolt Mine [near Madonna Mine at Monarch]	172B	Garfield (1:62,500)
Big Mike Avalanche Path [Ten Mile Canyon near Curtin]	197, 201, 204	Vail Pass
Big Tim Avalanche Path [usually called "Big Mike," near Curtin in Ten Mile Canyon]	197	Vail Pass
Birdseye* [on Colorado and Southern, and Denver and Rio Grande Railroads between Leadville and Fremont Pass at Mile Post 144.86] (Fig. 49)	134, 138, 142, 185	Climax
Black Canon [of the Gunnison River]	127, 185X	Sheet 4 of 6, Gunnison County maps (1:50,000)
Blue River Branch of Rio Grande and Western Railroad [Dillon to Leadville]	132, 134, 137, 138, 140, 142, 145, 147, 150, 162, 177	Frisco and Vail Pass
Bonanza	118	Bonanza (1:62,500)

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Boreas Pass [east of Breckenridge]	174, 190, 195, 196	Boreas Pass
Boulder Peak [12 miles north of old Dillon in Gore Range]	165, 165A	[Unknown]
Bowen Gulch [near south end of Never Summer Mountains]	112B	Bowen Mountain
Bowen Pass	108	Bowen Mountain
Breckenridge	157, 177, 190, 195	Breckenridge
Browns' Canon [seven miles northwest of Salida]	165X	Poncha Springs (1:62,500)
Buckskin Mountain [Now called Mount Buckskin. It is about 4 miles southeast of junction of Chalk Creek and the East Fork of the Arkansas River] (Fig. 49)	110	Mt. Lincoln (1:62,500) Climax
Buena Vista	165X	Buena Vista (1:62,500)
Bulkley Coal Mine [at elevation of about 9,700 feet on north flank of Whetstone Mountain 2 miles south of Crested Butte]	181X	Crested Butte
Bullion King Mine [near Irwin]	152	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Busk [just east of Carlton Tunnel]	157A	Mount Massive and Homestake Reservoir
Butte Mine [on South Mosquito Creek northwest of Pennsylvania Mountain]	176	Climax
Camp Bird Mine [near Madonna Mine at Monarch]	172	Garfield (1:62,500)
Carbondale [in the Roaring Fork Valley below Basalt]	168	Carbondale

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Carey's Camp [mining camp in Conundrum Gulch about 7 miles above the confluence of Conundrum and Castle Creek (Eberhart 1969, p. 245-246).]	123, 124	Maroon Bells
Castle Creek [south of Aspen]	151, 166A, 166B	Aspen and Hayden Peak
Cattle Creek [should be Castle Creek - 4 miles south of Aspen]	166	Aspen and Hayden Peak
Chalk Bluff [location unknown, but thought to be near Fremont Pass]	205	[Unknown]
Chalk Mountain* [near Fremont Pass] (Figs. 48 and 49)	134	Mt. Lincoln (1:62,500) Climax
Chalk Ranch [On the Denver, Rio Grande Railroad south of Fremont Pass. At junction of Chalk Creek and East Fork of Arkansas R. Also called Halfway and later Tabor City] (Figs. 48 and 49)	110, 110A, 134, 145	Mt. Lincoln (1:62,500) Climax
Cinnamon Mountain* [5 miles northwest of Gothic] (Fig. 47)	115, 116, 118	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Chipeta Falls [in the Black Canyon of the Gunnison River]	185x	[Unknown]
Climax* [at Fremont Pass, Mile Post 137.46 on the High Line Branch of Colorado and Southern Railroad] (Fig. 49)	174, 198, 201, 203, 205	Climax
Clipper Mine [near North Fork Mosquito Creek]	175	Mt. Lincoln (1:62,500)
Coal Basin [in Ragged Range near Redstone]	168	Placita
Cochetope Pass [25 miles west of Saguache on Continental Divide]	103	North Pass
Colorado and Kentucky Mining and Smelting Companies property [in Rabbit Ears Mountains]	114	Bowen Mountain

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Colorado Midland Railroad [ran west from Leadville to Frying Pan River]	157, 177	Lake County (1:50,000) or sheet 2 of 2, Pitkin County maps (1:50,000)
Como [on the Colorado and Southern Railroad, 8 miles southeast of Boreas Pass]	171, 174, 176X, 190, 194, 195, 197	Como
Conundrum Gulch [south of Aspen]	123, 135	Hayden Peak and Maroon Bells
Cornelius Mine [near Madonna Mine at Monarch]	172B	Garfield (1:62,500)
Corona [A station on the old Denver Rio Grande Western Railroad grade just east of Rollins Pass.]	193X	East Portal
Couers Chanis Cabin [up Maroon Creek from Aspen]	135	Highland Peak or Maroon Bells
Creede	164	Creede (1:62,500)
Crested Butte* (Fig. 47)	117, 117A, 117B, 118, 137, 152, 153, 154, 160X, 165Y, 187	Crested Butte or sheet 2 of 6, Gunnison County maps (1:50,000)
Cromwell Mine [near Madonna Mine at Monarch]	172B	Garfield (1:62,500)
Crystal Basin [southeast of Marble]	137	Snowmass Mountain
Curtin [Curtain] [on High Line Branch Colorado and Southern Railroad in Ten Mile Canyon, at Mile Post 122.06. Also called Uneva or Uneva Lake]	159X, 180, 190, 192, 195, 196, 198, 201, 202	Vail Pass
Curved Bridge [on Denver and Rio Grande Railroad at Fremont Pass] (Fig. 49)	138	Climax
Darby's Switch [on the Blue Line Branch between Leadville and Climax]	134	Mt. Lincoln (1:62,500) and Holy Cross (1:62,500)

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Deadman Gulch* [3.5 miles south of White Pine] (Fig. 46)	131	Sheet 5 of 6, Gunnison County maps (1:50,000)
Denver and Rio Grande Railroad in Ten Mile Canyon [see Blue River Branch]		
Denver and South Park Railroad in Ten Mile Canyon [see High Line Branch]		
Dickey [near Frisco; now under water in the Blue River arm of Dillon Reservoir]	154, 157A, 159X, 162, 169, 188	Dillon (1:62,500) Frisco
Dillon	165, 165A, 190, 196	Frisco
Doctor Mine [In Doctor Gulch 3 miles south of Spring Creek Reservoir]	189X	Matchless Mountain
Durango Mine [near Ruby Peak] (Fig. 47)	116, 118	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Durant Mine [Aspen Mountain; Durant Tunnel is just east of Spar Gulch at an elevation of 8,025 feet]	125	Aspen
Eagle River	157, 178	Minturn
Eagle River Canyon [near Red Cliff]	140	Minturn
Eclipse Mine [on Monarch Ridge (Mountain) 3/4 to 1 mile south of Monarch]	173, 173A	Garfield (1:62,500)
Eight-Mile House [probably a stop on the railroad or stage line over Tennessee Pass]	130	Holy Cross (1:62,500) or Leadville North
Elk Creek [near Irwin]	115	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Elk Lode [near Irwin]	115	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Elko [assumed to be near Elko Park]	165Y	Snowmass Mountain

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Enterprise Mine [in Taylor River area]	161	Taylor Park Reservoir [probably]
Excelsior Mine [Poverty Gulch*] (Fig. 47)	137, 153	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Fairplay Mine [near Monarch]	172, 172B	Garfield (1:62,500)
Fairplay Quarry [near Monarch]	172, 172B	Garfield (1:62,500)
Francis Gulch [near Twin Lakes]	128	Mt. Elbert
Freighter's Rest [Pass] [a place along the stage road over Independence Pass]	147, 149	Independence Pass
Fremont Pass* [Mile Post 137.41 on the High Line Branch, Colorado and Southern Railroad] (Fig. 49)	132, 138, 142, 145, 147, 150, 167, 198	Mount Lincoln (1:62,500) Climax
Frisco [in Ten Mile Canyon at Mile Post 119.88 of the High Line Branch, Colorado and Southern Railroad] (Fig. 43)	118, 154, 195, 197, 203, 204	Frisco
Garfield [about 15 miles west of Salida]	172, 172B	Garfield (1:62,500)
Glenwood Springs	155, 157, 157B, 177, 186	Glenwood Springs
Gordon Gulch [near Twin Lakes] (Fig. 39)	128	Mount Elbert
Gordon-Tiger Mine [near Twin Lakes]	182	Mount Elbert
Gothic* (Fig. 47)	116	Gothic, or sheet 2 of 6, Gunnison County maps (1:50,000)
Granite Mountain* [6 miles east of Pitkin*] (Fig. 46)	122, 158	Sheet 5 of 6, Gunnison County maps (1:50,000)
Granite [18 miles south of Leadville]	158X	Granite
Great Mountain [in Middle Park]	107	[Unknown]

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Grizzly Gulch* [creek or reservoir, 5 miles south of Independence*] (Fig. 45)	137	Independence Pass
Gunnison	171	Gunnison
Hancock	166Y	Sheet 5 of 6, Gunnison County Maps (1:50,000)
Hagerman Tunnel [on Colorado Midland Railroad, west of Leadville]	157	Lake County map (1:50,000) Homestake Reservoir
Hard Cash Mine [near Elko]	165Y	Snowmass Mountain
Hidden Treasure Mine [near the Wolverine Mine one mile south of Bowen Mountain]	112, 112A	Bowen Mountain
High Line Branch of Colorado and Southern Railroad, Dillon to Leadville	132, 137, 140, 141, 147, 150, 154, 157, 162, 167, 169, 174, 180, 185, 188, 190, 192, 194, 195, 197, 198, 200, 201, 202, 203, 204	Vail Pass and Frisco
Homestake Cut [in canyon west of Red Cliff]	147	Minturn [probably]
Homestake Mine [at head of West Tennessee Creek, 1/2 mile north of West Tennessee Lakes, and 1.3 miles south southwest of Homestake Peak]	130, 144	Homestake Reservoir
Horn Silver Mountain [near Red Cliff]	111	Pando
Howard Extension Mine [near Irwin] (Fig. 47)	116, 118	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Howard F. Smith [or Smith Hill*] anthracite coal mine [3 miles northwest of Crested Butte* on the south end of Anthracite Mesa*] (Fig. 47)	117, 117B, 118	Sheet 2 of 6, Gunnison County maps (1:50,000)
Ida Alice Mine [on Boulder Creek about 12 miles north of Dillon]	165	Dillon (1:50,000)

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Illinois Creek [east of North Park]	108	Bowen Mountain
Independence* [ghost town between Aspen and Independence Pass*] (Fig. 45)	137, 147, 149, 157,	Independence Pass
Independence Pass* [between Aspen and Leadville] (Fig. 45)	135, 139, 145, 146, 147, 148	Independence Pass
Iowa Gulch [south and east of Leadville]	163	Mount Sherman
Iron Ram [near Madonna Mine at Monarch]	172B	Garfield (1:62,500)
Irwin* [6 miles west of Crested Butte*. Crofett (1881, p. 110) says it was principle town of Ruby mining district on Ruby Gulch, 1 mile above its junction with Coal Creek--altitude 10,044 feet] (Fig. 47)	115, 116, 118, 152	Oh-Be-Joyful and Mt. Axtell, or sheet 2 of 6, Gunnison County maps (1:50,000)
Jack Creek [east of North Park]	108	Mount Richthofen
Jacob Straeder Mine [in Baxter Basin* southwest of Poverty Gulch*, about 9 miles northwest of Crested Butte*] (Fig. 47)	153	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Jessie Mine on Aspen Mountain	137	Aspen
Kebler Pass [west of Crested Butte]	118	Mt. Axtell
Kildare [near Leadville]	186	[Unknown]
King Solomon Tunnel [in Ten Mile Canyon near Mile Post 120 on Colorado and Southern Railroad]	174	Frisco
Kitty Quinn Tunnel [Granite Mountain* near Tomichi]	122	Sheet 5 of 6, Gunnison County Maps (1:50,000)

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Kokomo [4 miles north of Fremont Pass*, at Mile Post 132.67 on High Line Branch of Colorado and Southern Railroad] (Fig. 48)	132, 138, 142, 156, 157, 159X, 174, 193, 195	Mount Lincoln (1:62,500) Copper Mountain
Lackawana Gulch [east of Independence Pass]	109	Independence Pass
Lake City	177	Lake City
Last Chance Mine [on Aspen Mountain near Aspen]	132	Aspen
Late Acquisition Mine [near Aspen]	132	Aspen
Leadville	134, 142, 145, 149, 157, 160, 163, 163A, 183, 185, 190, 192, 196	Leadville North and Leadville South
Little Giant Mine [near the Madonna Mine at Monarch]	172B	Garfield (1:62,500)
Little Sugar Loaf Mountain [near Chalk Mountain]	134	Mount Lincoln (1:62,500) Climax
Madonna Mine [near Monarch]	172, 172B, 179	Garfield (1:62,500)
Magna Charta Mine [near Tomichi]	122,158	Sheet 5 of 6, Gunnison County maps (1:50,000)
Marble [up the Crystal River from Carbondale]	179X, 181, 182X	Marble
Maroon Pass [near Aspen]	132, 135, 137, 143	Maroon Bells
Marshall Pass	157, 158Y, 177	Pahlone Peak
Middle Park	107,118, 191	[in vicinity of Granby]
Mile Post 123 on High Line Branch of Colorado and Southern Railroad (Fig. 44)	202	Vail Pass
Mile Post 124 on High Line Branch of Colorado and Southern Railroad	202	Vail Pass
Mill Mountain	180X	Marble

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Monarch [1-1/2 miles from Garfield, once called Chaffee (Crofett 1881, p. 85)] (Fig. 36)	172, 172A, 172B, 173, 173A, 179	Garfield (1:62,500)
Monarch Mountain [Hill] [near Monarch]	172B, 173	Garfield (1:62,500)
Monroe Slide [just above Uneva Lake in Ten Mile Canyon]	202	Vail Pass
Monte Vista [31 miles northwest of Alamosa]	199	Monte Vista
Montezuma Mine [near Aspen, 1 mile northeast of Castle Peak]	120	Hayden Peak
Montgomery [ghost town just south of Hoosier Pass, flourished 1861-1870 and again 1881- 1898 (Wolle 1949, p. 81), now covered by a reservoir on the Middle Fork of the South Platte River (Brown 1968, p. 228)]	105	Alma
Moriarty Peak [not on modern maps; near Fremont Pass and Chalk Mountain] (Fig. 49)	134, 138	Mount Lincoln (1:62,500) Climax
Mosquito Creek [North Fork, east of Leadville]	175	Mount Lincoln (1:62,500) Climax
Mosquito Range [east of Leadville]	175, 176	Mount Lincoln (1:62,500) Climax
Mount Owen* [Owens] [one of the Ruby Peaks near Irwin] (Fig. 47)	116	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Mount Wood [near Marble]	181	Marble
New York Mountain	153X	Fulford and Grouse Mountain
North Park	108	Vicinity of Walden
Oaks Mine [near Ruby Peak*] (Fig. 47)	116, 118	Oh-Be-Joyful

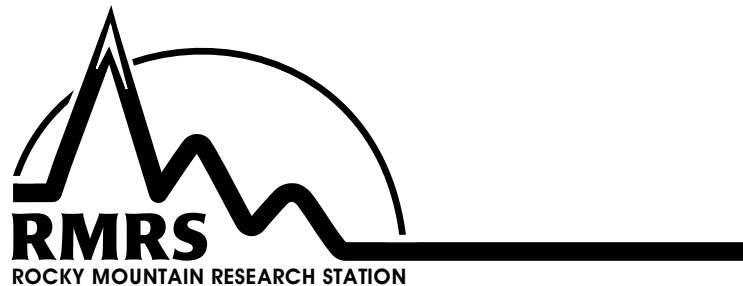
Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Old Shick Mine [near Ruby Peak*] (Fig. 47)	116	Oh-Be-Joyful
Oro City [east of Leadville]	130	Mount Elbert (1:62,500) Leadville South
Paradise Gulch Mine* [east of Cinnamon Mountain] (Fig. 47)	116, 118	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Parry Peak [Perry Mountain on some maps; near Twin Lakes] (Fig. 39)	157A	Mount Elbert
Paymaster Mine [near Madonna Mine at Monarch]	172B	Garfield (1:62,500)
Pearl Pass [15 miles south of Aspen on the Gunnison-Pitkin county line. The Aspen-Crested Butte wagon road built in 1882 used Pearl Pass (Brown 1968, p. 93)]	129A	Pearl Pass
Pitkin* (Fig. 46)	126, 131, 133, 155	Sheet 5 of 6, Gunnison County maps (1:50,000)
Pittsburg* [about 7 miles up Slate River from Crested Butte] (Fig. 47)	137	Oh-Be-Joyful
Pomeroy Gulch [near Twin Lakes]	128	Mount Elbert
Poverty Gulch* [9 miles northwest of Crested Butte] (Fig. 47)	137, 153, 166X	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Quarry Town [just west of Yule Quarry south of Marble]	179X	Marble
Queens Gulch [near Aspen]	121	Aspen
Rabbit Ears Mountain	114, 118	Rabbit Ears and Spicer Peak
Ready Cash Mine [in Iowa Gulch, south and east of Leadville]	163, 163A	Mount Sherman
Red Cliff	111, 140, 147, 153X, 155, 157	Red Cliff

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Red Peak [5-1/2 miles northwest of Frisco]	118	Willow Lakes
Redstone [up Crystal River from Carbondale]	168	Redstone
Richardson's Cabin [between Gothic and Paradise Gulch]	116	[Unknown]
Rio Grande and Western Railroad through Ten Mile Canyon [see Blue River branch]		
Robinson* [old town site north of Fremont Pass, now covered by the tailings ponds from the mill at Climax, formerly called Ten Mile (Crofutt 1881, p. 145)] (Fig. 48)	118, 136	Mount Lincoln (1:62,500) Copper Mountain
Rollins Pass [on Continental Divide seven miles east of Fraser]	193X	East Portal
Ruby [old mining camp about 1 mile south of Irwin]	116, 154	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Ruby Chief Mine [near Irwin]	116, 118	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Ruby Peak* or Mountain [near Irwin] (Fig. 47)	116, 118, 152	Marcellina Mtn. or sheet 2 of 6, Gunnison County maps (1:50,000)
Salida	165X	Cameron Mountain (1:62,500)
Saponis Mine [Rabbit Ears Mountain]	118	[Unknown]
Schofield Pass [about 10 miles north northwest of Crested Butte]	165Y	Snowmass Mountain
Selma Mine [near Kokomo]	157	Mt. Lincoln (1:62,500) Copper Mountain
Sheep Mountain* [north of Fremont Pass] (Fig. 48)	118, 136	Mt. Lincoln (1:62,500) Copper Mountain
Shoshone [in Glenwood Canyon]	157, 157A, 157B, 157X, 158Y, 177, 186	Shoshone

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Slate River [near Crested Butte]	117A, 160X	Oh-Be-Joyful
Smith-Hill Mine* [3 to 4 miles northwest of Crested Butte] (Figs. 21 and 47)	117B	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Snowslide Peak [near Chalk Mountain; not on modern maps]	145	Mt. Lincoln (1:62,500)
Solitude [station on High Line Branch, Colorado and Southern Railroad at Mile Post 126.16; also called Wheeler]	196	Vail Pass
South Park Branch of Colorado and Southern Railroad [see Highland Branch]		
Spellers Cabin [on Maroon Creek, south of Aspen]	135	Highland Peak or Maroon Bells
St. Elmo	166Y	Sheet 5 of 6, Gunnison County Maps (1:50,000)
Stem Winder Mine [near Madonna Mine at Monarch]	172B	Garfield (1:62,500)
Summit City [near Fremont Pass]	136	Mt. Lincoln (1:62,500) Copper Mountain
Tabor City [at the crossing of the Denver and Rio Grande Railroad over Chalk Creek, formerly called Chalk Ranch]	110	Mt. Lincoln (1:62,500) Climax
Taylor River area	161	Taylor Park Reservoir [probably]
Ten Mile Canyon [Ten Mile Canon] [southwest of Frisco; now written as Tenmile]	137, 142, 159, 159X, 162, 167, 169, 174, 180, 188, 195, 197, 198, 200, 201, 202, 203, 204	Frisco and Vail Pass
Tennessee Pass	130, 155, 157	Holly Cross (1:62, 500) Leadville North
Three-Mile Tank [on High Line Branch of Colorado and Southern about 3 miles north of Leadville, at Mile Post 147.6]	174, 190	Leadville North

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Tibbitts Ranch [near Ashcroft]	129	Hayden Peak
Tomichi [2 miles up road from White Pine*; only cemetery shown on modern maps, formerly called Argenta (Crofutt 1881, p. 149)] (Figs. 30 and 46)	119, 122, 123, 158, 158A	Sheet 5 of 6, Gunnison County maps (1:50,000)
Tucker Mountain* [north of Kokomo] (Fig. 48)	106	Mt. Lincoln (1:62,500) Copper Mountain
Twin Lakes (Fig. 39)	128, , 157, 157A, 182	Granite
Uneva or Uneva Lake [station on the High Line Branch of Colorado and Southern Railroad in Ten Mile Canyon; according to Poor (1949, p. 446) this was another name for Curtin which was at Mile Post 122.06]	162, 167, 180, 188, 197, 198, 200, 201, 202	Vail Pass
Vallejo Mine [near Aspen]	125	Aspen
Venango Mine [near Irwin]	115	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Vicksburg [about 5 miles south of Twin Lakes]	170	Mt. Harvard (1:62,500)
Washington Gulch* [4-5 miles north of Crested Butte] (Fig. 47)	103, 104	Oh-Be-Joyful or sheet 2 of 6, Gunnison County maps (1:50,000)
Wheel of Fortune Mine [on Sheep Mountain near Robinson]	136	Mt. Lincoln (1:62,500) Copper Mountain
Wheeler [station on High Line Branch of Colorado and Southern, also called Solitude] (Fig. 48)	141, 189, 194	Mt. Lincoln (1:62,500) Copper Mountain
Wheeler Mine [3 miles above Montgomery]	105	Mt. Lincoln (1:62,500) Alma and Breckenridge
White House Mountain [2 ½ miles southeast of Marble]	137	Marble
White Pine* [6 miles west of Salida] (Fig. 46)	119, 158	Sheet 5 of 6, Gunnison County maps (1:50,000)

Place names	Newspaper accounts in which place is mentioned	Map (scale is 1:24,000 unless otherwise noted)
Whetstone Mountain [about 2 miles south of Crested Butte]	181X	Crested Butte
Wichita Tunnel [near Kokomo]	157	Mt. Lincoln (1:62,500) Copper Mountain
Winfield [4 miles up the road from Vicksburg]	158X, 170	Mt. Harvard (1:62,500)
Wolverine Mine [in Rabbit Ears Mountains]	118	Bowen Mountain
Woodstock [0.85 mile west of Hancock Pass* on west limb of switchback on old road to Alpine Tunnel*. Not on modern maps] (Figs. 23-26 and 46)	126, 133, 176X	Sheet 5 of 6, Gunnison County maps (1:50,000)
Yopsie Mine [location unknown]	121	[Unknown]
Yule Quarry [2.8 miles south of Marble]	179X	Marble



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