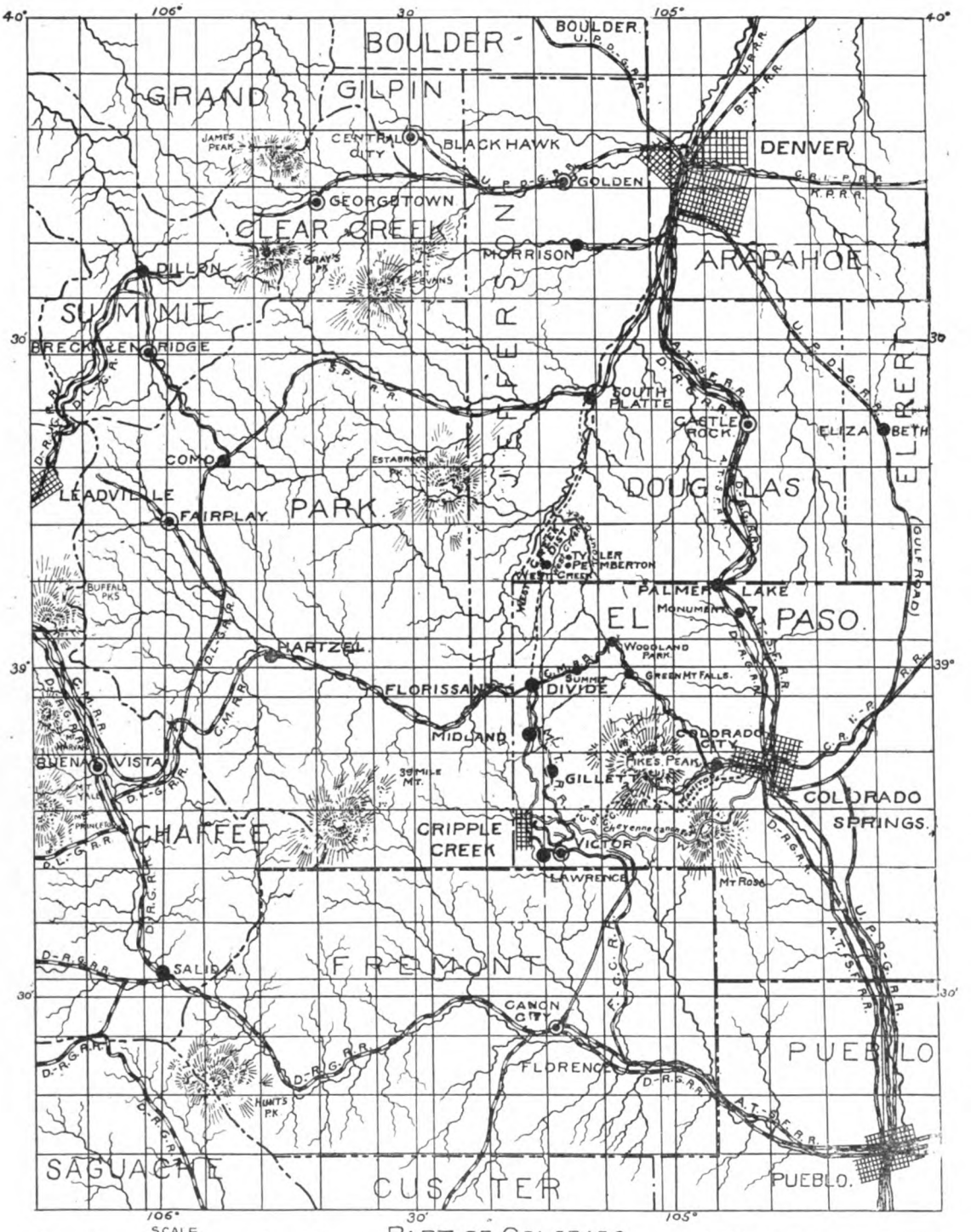


PART OF COLORADO
Showing Railroad and Wagonroad Ties
OF THE
CRIPPLE CREEK DISTRICT.

COLORADO SPRINGS AND CRIPPLE CREEK ILLUSTRATED
WARREN H. STRIDE
Copyright

# Cripple Creek

... and ...

# Colorado Springs ..

# ...Illustrated

A Review and Panorama of an Unique Gold Field, with Geological Features and achievements of five eventful years, including outlines of numerous companies

Published by
Warren & Stride
Colorado Springs, Colo.
1896

# Prologue...

EL PASO COUNTY, Colorado, from the day of its organization, has been renowned for scenery, farming and stockgrowing. Until nearly five years ago these—and climate—were its economic features. The discovery of a gold field to-morrow in central New York, or in Ohio, would hardly be a more overwhelming surprise than was that of the mountainous cattle range in the neighborhood of Cripple Creek in 1891. The story of this unique transformation has become familiar and yet is ever new, due to the constantly increasing outpouring of treasure, and the interest aroused makes a book of this scope and character opportune.

Colorado Springs is the financial center for Cripple Creek. Here is the principal market for the shares of the different companies. Our leading brokers, from the beginning, have ventilated all wild cat company schemes as soon as they were made known, and have played a praiseworthy role throughout in the industrial advancement of the district. The title determined upon for this brochure, "Cripple Creek and Colorado Springs Illustrated," is peculiarly suggestive of the ties that bind the one to the other on a sound business footing.

The maps and photo-engravings were all prepared specially for this work. H. S. Poley is the artist who prepared the photographic negatives for the illustrations. They afford a life-like panorama of the growth of the district and are more satisfying than would be possible by a volume of descriptive text. The Williamson-Haffner Engraving Company made the half-tones and maps. When in the midst of this contract a fire visited their establishment, doing considerable damage, rendering it almost impossible to complete the work in hand. The plates for the maps and many of the best illustrations were finished under these difficulties, for which due appreciation is here noted.

While the aim has been to narrate this Story of Gold attractively, an effort has also been made to have these pages of value for reference to the general reader, the investor and speculator, by presenting a plain chronicle of facts. There is not a line of advertising of any description, biographical or otherwise, or the booming of the shares or holdings of any company. If the book meets with approval and is widely read and often referred to, it will be mainly due to its merit in this regard.

H. L. J. WARREN
ROBERT STRIDE

Colorado Springs, Colo.
December 18, 1895

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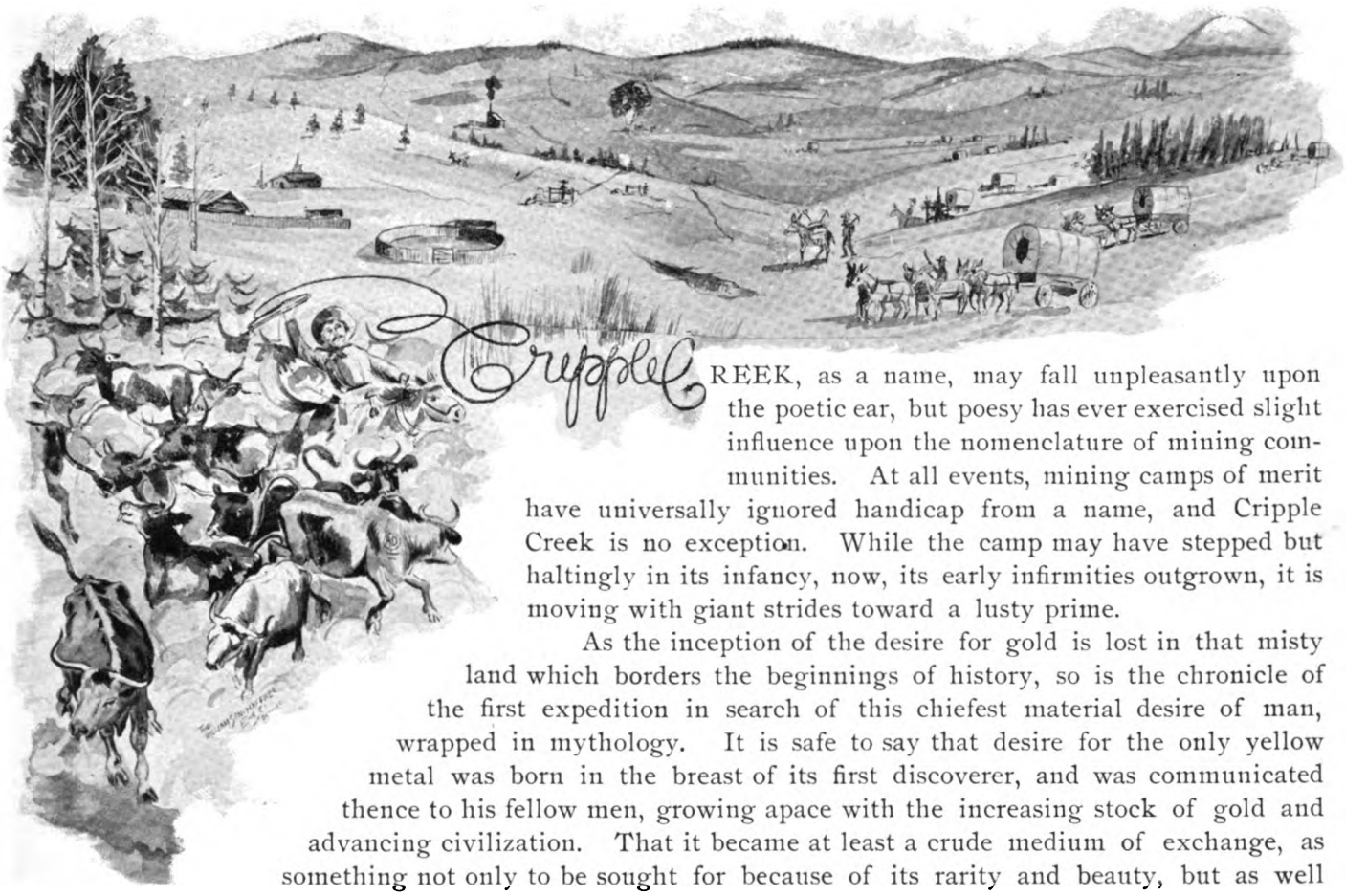


Cripple CREEK, as a name, may fall unpleasantly upon the poetic ear, but poesy has ever exercised slight influence upon the nomenclature of mining communities. At all events, mining camps of merit have universally ignored handicap from a name, and Cripple Creek is no exception. While the camp may have stepped but haltingly in its infancy, now, its early infirmities outgrown, it is moving with giant strides toward a lusty prime.

As the inception of the desire for gold is lost in that misty land which borders the beginnings of history, so is the chronicle of the first expedition in search of this chiefest material desire of man, wrapped in mythology. It is safe to say that desire for the only yellow metal was born in the breast of its first discoverer, and was communicated thence to his fellow men, growing apace with the increasing stock of gold and advancing civilization. That it became at least a crude medium of exchange, as something not only to be sought for because of its rarity and beauty, but as well because of the power which it possessed, by reason of its great desirability co-incident with its discovery, will scarcely be questioned. That while a small fraction of mankind has striven for gold from a pure desire for its possession, the greater fraction has sought it with the idea single to what it would accomplish, is equally true. Moralists have declaimed against the evil results growing out of the passion for gold. The historian has taught that the desire for gold has been the incentive of discovery, and has blazed the way to human progress.

The seeker after the royal metal has, with rare exception, sought his hidden treasure beyond the boundaries of civilization and within the confines of the wilderness, and with the realization of his dreams, the latter has been obliterated and the lines of the former extended.

The story of Jason has been so often told that reference to it has become trite, and yet, in all its details, it is so symbolical of later quests, with similar objects in view, that it cannot well be ignored. With the growth of this mythologic hero's ambition into a fixed purpose, came the development of the ship from the canoe; and from that day to this, every adventure which has resulted in noteworthy additions to the world's supply of gold, has been marked with achievements in human progress; with advancement in the science of government; with the foundation of states and nations, and with a betterment in the condition of all mankind. The bright side of these quests for gold has shone with so intense a light as to almost obliterate the dark side. The good, in result, has far out-weighed the bad. Courage has been tried; heroes have been fashioned; invention has been stimulated; romance has been enriched, and the legitimate demands of humanity have been both widened and gratified.

The story of the discovery of gold at Cripple Creek, and the metamorphose of a cow camp into a great mining camp, differs little in essentials from its mythological prototype. Here, as there, every conceivable obstacle intervened between hope and realization. Years passed before success was achieved; many of the Argonauts fell by the wayside before the goal was reached; and here, as there, was the sowing of the dragon's teeth; the harvest of armed men and their overthrow, before the golden fleece

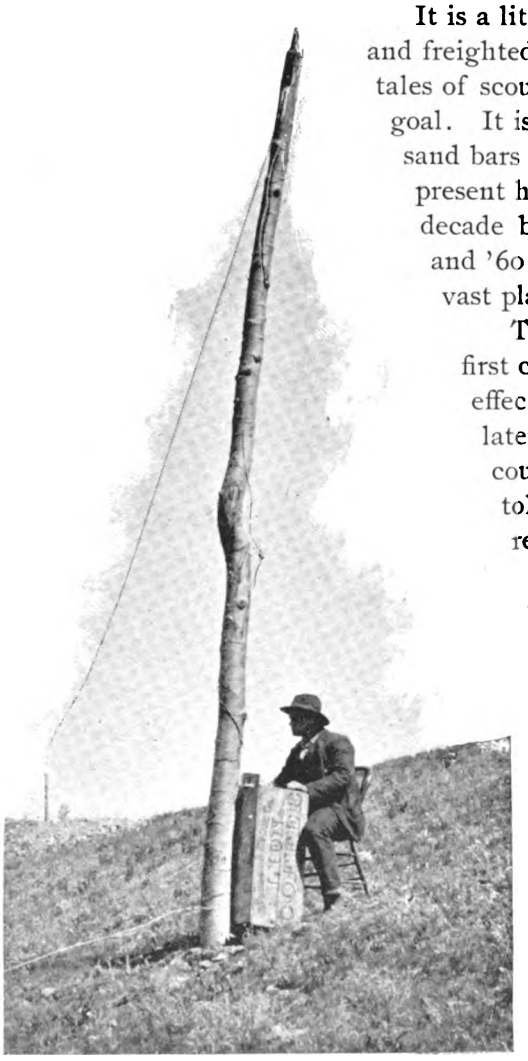
CRIPPLE CREEK, NOVEMBER, 1891

was in hand. The first knowledge of the Pike's Peak region reaches back into the ancient history of the American frontier. The huge pile of granite which was erected, rock upon rock, by the tremendous forces of nature, is of the geographical aristocracy of the Great American Desert. It is now nearly ninety years ago since the Peak was first sighted by the intrepid American officer from whom it takes its name, and to whose name it has given immortality.

It is a little more than thirty-five years since caravans, guided by brave men and freighted with equally brave women and fearless children, lured by glowing tales of scout and guide, began to creep westward with Pike's Peak as their goal. It is doubtful whether anything less alluring than the fabulous stories of sand bars shining with gold could have incited men and women inured to present hardships, to risk others that they knew not of. As with those of a decade before, who sought the shores of the Pacific, so the pioneers of '59 and '60 took their lives in their hands as they ventured the crossing of the vast plains which intervened between them and the Rocky Mountains.

The history of the settlement and development of Colorado, from the first coming of the white settler with his family and meager household effects, to the present day; the making way of the prairie schooner, and, later, of the stage coach, for the railroad; the growing of an ill-defined county of Kansas into a State of the American Union, is a many times told tale, and while it is well worth repetition, the temptation must be resisted.

No mining camp of modern times has ever fought a fiercer fight with skepticism than Cripple Creek. The region which has come to be identified by this name, lies upon the southwest slope and almost immediately under the shadow of Pike's Peak. As the crow flies, it is distant from Colorado Springs about twenty miles, and from Denver about eighty. As mining camps go, it possesses the advantage of a comparatively slight elevation, ranging something more than 9,000 feet above sea level; and, as compared with other mining regions, it is, as a result of some influence, peculiarly fortunate as to its climate. It is comparatively free from snow in the winter months, and of a remarkably even temperature throughout the year. Topographically, its advantages



FIRST TELEGRAPH STATION


VICTOR, APRIL, 1894

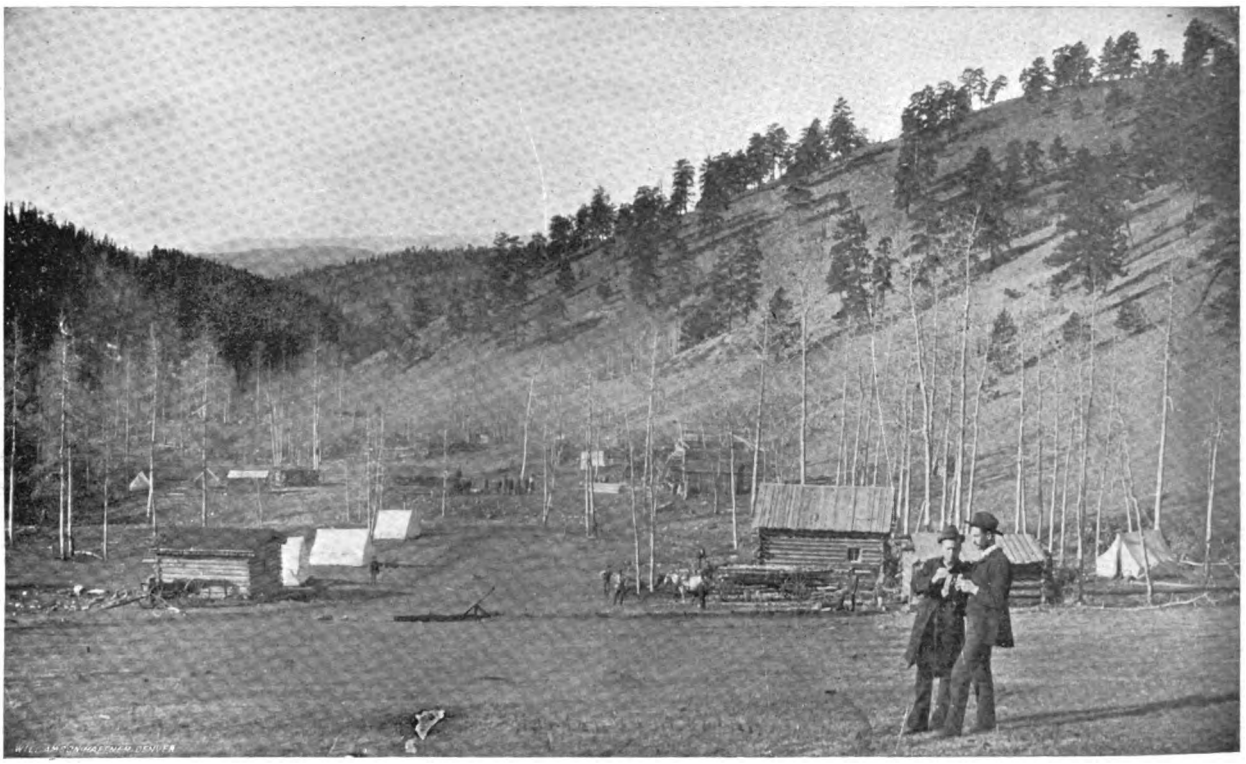
are equally exceptional. Its characteristics, in this regard, are sloping valleys divided with rounded hills, with an occasional breaking out of a rocky cliff or peak. The fact that the territory, now approved as mineral bearing, was formerly a highly esteemed cattle range, evidences its topographical character.

The immediate location of Cripple Creek, as well as the adjacent territory, was prospected as early as '59 and '60. Undoubtedly gold was, at that time, discovered, for there is rich placer ground in that vicinity. But, by reason of the scarcity of water, and, perhaps, also because of richer promise elsewhere, no particular attention was attracted, and as a gold camp it was pronounced worthless. At intervals, thereafter, gold was found, but judged to be not in paying quantities.

In 1884, exaggerated reports of the discovery of gold in the vicinity of Mount Pisgah, were borne to the miners of the State, and some excitement ensued. This incipient boom bursted, resulting in loss and disappointment to many. While Mount Pisgah is not located immediately within the present territory recognized as gold bearing, it was sufficiently near to discredit it, and thus the district received its second "black eye." At the time of the Pisgah excitement, the residents of Colorado Springs, to the courage and energy of whom somewhat tardily given the present camp owes so much, became greatly interested and somewhat disappointed. As a result, when the claims of later discovery were presented to them for approval, they were loath to give this, and long withheld it.

EARLY DAYS

With respect to the honor of making the first discovery, legitimate in character, which directly led up to the bursting upon the world of what will unquestionably prove to be the greatest gold camp of modern times, there are several claimants. Examined by the light of research, facts would seem to warrant the statement that to Theodore H. Lowe, a mining engineer, widely and favorably known throughout the State, is due the credit of having first discovered pay mineral in place. Mr. Lowe's discovery was made in 1881 while engaged in surveying lands in that locality. While running his lines, he picked up a piece of float which, upon being assayed, ran high in gold. He sought and discovered the outcrop from which the float must have come, and, sinking a shaft, as required by law, recorded his location. Subsequent development, carried on in a desultory manner, not proving sufficiently satisfactory to persuade the enlistment of capital, work was practically abandoned until in 1891, when Mr. Lowe gave to Robert Womack an interest in the claim, and persuaded him to re-locate it. Womack induced a resident of Colorado Springs to advance the money necessary to further development for an

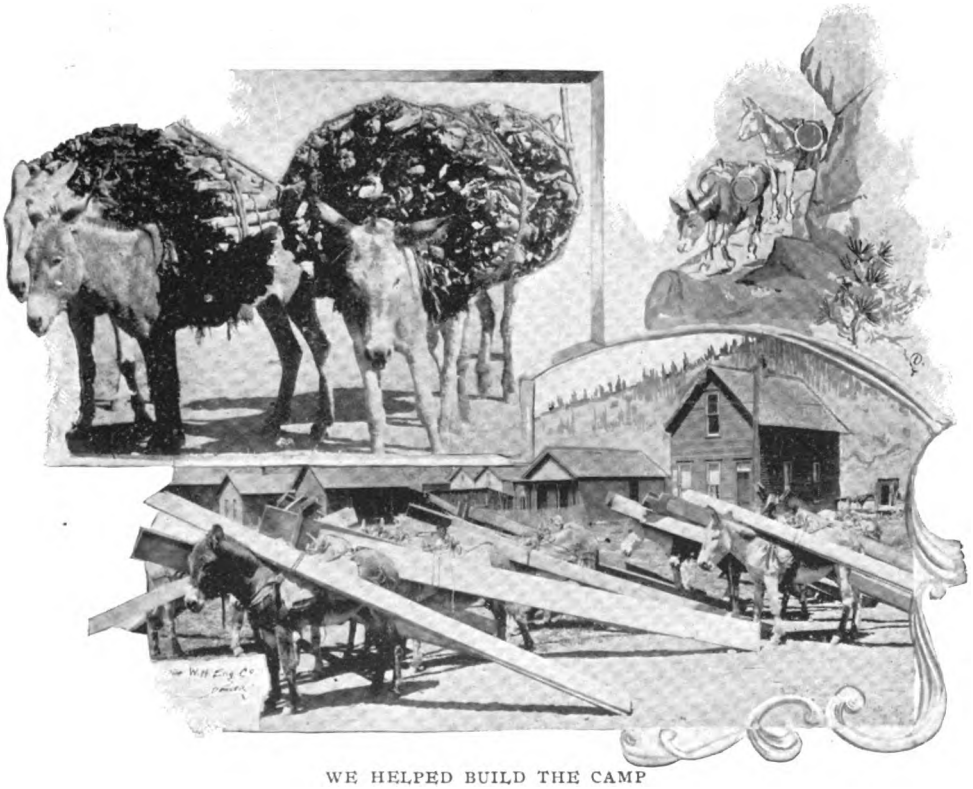


ANACONDA, NOVEMBER, 1891

interest in the property. This claim, situated in Poverty Gulch, was re-located as the El Paso, and is now the property of the Gold King Mining Company. The work performed, in accordance with the contract made with the Colorado Springs resident, resulted in the discovery of valuable ore. From this discovery dates the beginning of the Cripple Creek of to-day.

As illustrating how exceeding slow men, enterprising and far-seeing in ordinary business matters, often are to recognize changed conditions involving great future possibilities, a brief recital of the incidents which led up to the creation of a town, as by the potent wand of the magician, may prove of interest.

The site of the town, or city, of Cripple Creek, at present a municipality of 9,000 inhabitants, and rapidly growing, was, but five years ago, the headquarters ranch of a cattle company. The ranch was a homestead location of William W. Womack, uncle to the Mr. Lowe already referred to as perhaps entitled to credit as the first discoverer of paying ore in place in the now famous gold camp. The location was made in 1876, and the ranch was sold to the Pike's Peak Land and Cattle Company, in 1884. In the year following, title was transferred to Bennett & Myers, a leading real estate firm of Denver. After purchase, and being the owner of several other tracts in the immediate neighborhood, Bennett & Myers continued to carry on there the cattle business, until it became certain that their camp would become a city, and



WE HELPED BUILD THE CAMP


*AS IT WAS*

their cattle ranch a mining camp. Their cattle business was in charge of one George W. Carr.

During the year 1891, the younger Womack, being engaged in prosecuting the work in the shaft of what is now known as the Gold King Mine, and in prospecting elsewhere in the neighborhood, made his headquarters, as a matter of course, at the ranch in charge of Mr. Carr, being the former home of his father, the elder Womack. Mr. Carr, becoming annoyed at what he conceived to be the presumption of the young prospector in assuming a right to bed and board as well as to dig pit and trench, called the attention of his employers to the fact that young Womack was endeavoring to turn an excellent cattle range into a doubtful gold camp, and thereby endangering the safety of both cattle and riders. This complaint was several times repeated before much consideration was given to it by Messrs. Bennett and Myers. Finally it was concluded best that one of the firm should visit the ranch and make a personal investigation. Arriving at the ranch, Mr. Myers inquired of the foreman as to the whereabouts of the intrusive prospector. Upon being informed, he suggested that a visit be made to the scene of operations. Reaching the shaft, Mr. Myers called down: "Bob, what are you doing there?" To which the undismayed prospector replied: "I have a gold mine and am going to make a mining camp out of your ranch." Said Mr. Myers: "Come up here; I want to talk with you." And Bob climbed out.

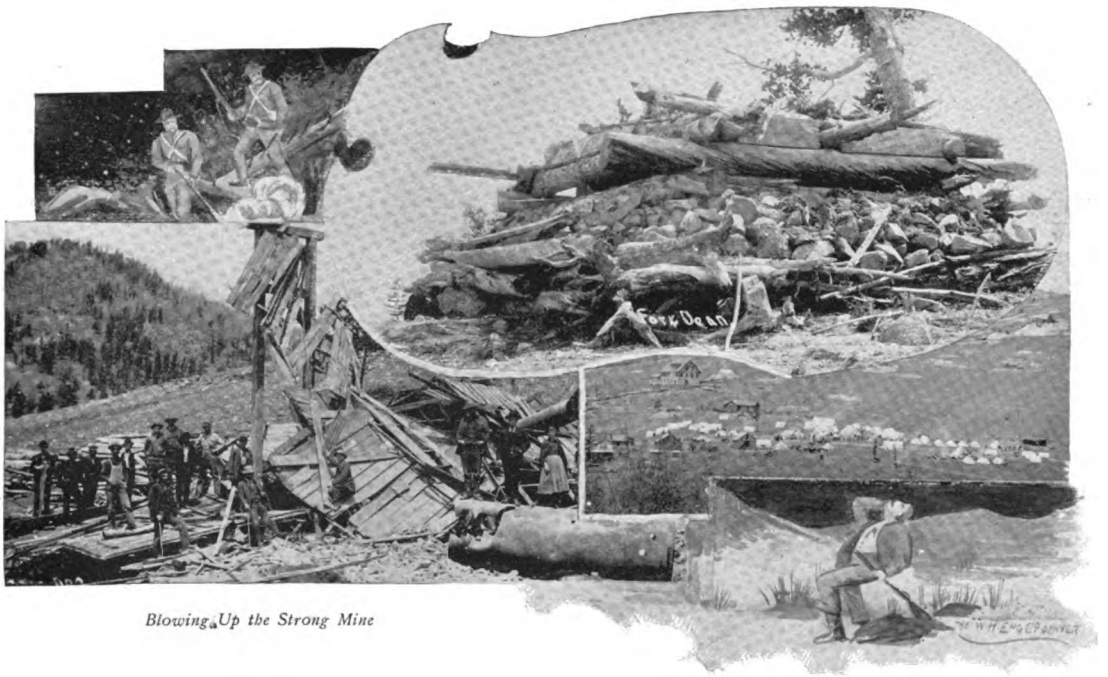
*AS IT IS*

THE ROSEBUD MILL, MOUND CITY, CRIPPLE CREEK
DESTROYED BY FIRE, JULY, 1894

After some general conversation, young Womack was informed that while he could proceed with his operations, he must be careful to cover up and make secure such holes in the ground as he might see fit to dig, and amicable arrangements were made for his sojourning at the ranch.

Returning to Denver, Mr. Myers carried with him some of Bob Womack's ore, which he had assayed. The result of the assay was not sufficiently startling to make any great impression upon Messrs. Bennett and Myers. Later on these gentlemen were advised by their foreman that prospectors were beginning to take possession of the country; that houses were being built and that, whether or no, it looked as if the cattle ranch would be transferred into a town, and he urged another visit to the ranch. This visit resulted in the platting of eighty acres into a town site and an arrangement for the sale of lots. As an evidence

THE PROSPECTOR'S COMPANION




*Blowing Up the Strong Mine*

*Fort Dean*

*Deputies' Camp*

TROUBLESOME DAYS

of lack of faith of the land owners in the future of the camp, it may be noted that the early deeds to lots stipulated that upon their abandonment, the improvements should revert to the grantors, Messrs. Bennett and Myers believing that the lumber and material thus obtained would compensate them, in part at least, for the annoyance to which they were being subjected.

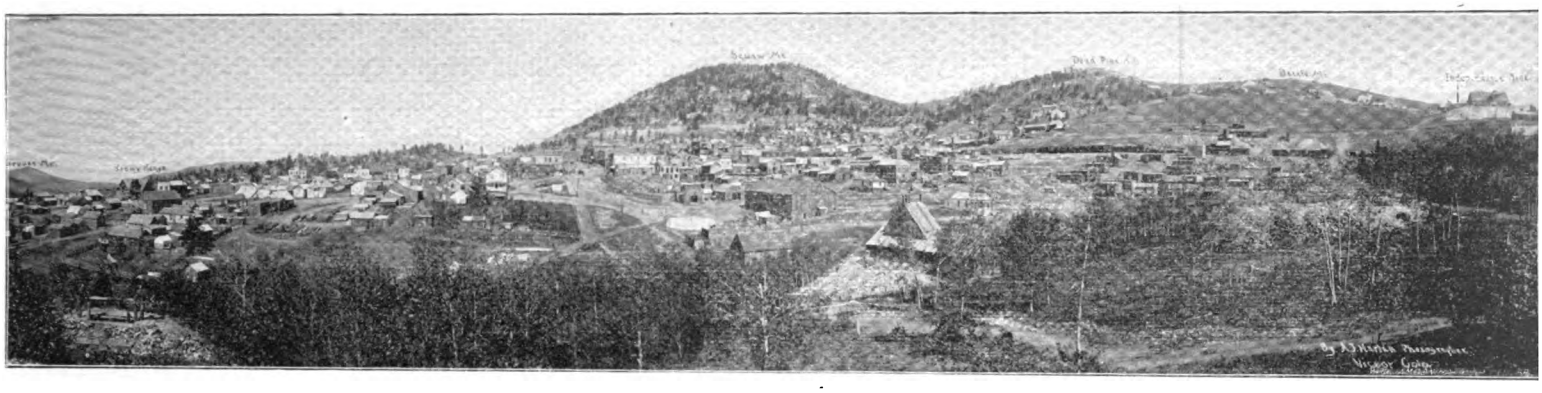
The camp continued to grow, additions were platted and put upon the market. While the reward reaped by the proprietors of the cattle ranch was considerable, as compared with the profits that might have been made had these gentlemen appreciated that which was to happen, it was inconsiderable.

Beginning with the discovery of pay ore in Poverty Gulch, the prospecting of the surrounding territory went on apace. No apter comparison of the development of the district can be made than with that of a photographer's plate, as, upon the application of the chemical bath, the features of the negative, one by one, and in rapid succession make their appearance, so, day by day, with the Cripple Creek District a blank, development brought to public view, prospect after prospect, and mine succeeding mine.

Following the reports of Womack's discoveries in the El Paso claim, which began to be generally circulated at Colorado Springs early in '91, an unceasing immigration of prospectors set in, and has continued with but slight interruption to the present day. The field of operation has been constantly widened, and, as a result, added discoveries have extended the area of gold-producing territory, the limit to which is still unknown, and perhaps not conceived of by the more enthusiastic.

So much is due the genus prospector, that a few words of tribute will not be out of place. Among the men of no other calling or pursuit in life has the virtue of perseverance been exemplified in so high a degree. With them, the word fail has no place in their vocabulary. With the genuine prospector, disappointment—utter present failure—is but a spur to renewed endeavor. His days are days of unvarying hardship; his nights are filled with dreams of the happiest realization of the hope which sustains him at his daily toil. His life is a life of exposure; his fare is of the rudest; by day he dines on "salt side," and by night revels at Delmonico's. He contends with his fellow man, as with nature, bravely, and if, perforce, he yields to the inevitable, he yields with cheeriness. Oftentimes his ambition for the sudden getting of money is that this may be as speedily dissipated in riotous living, in which event, the ease with which he turns from luxury to toil, is at least worthy of admiration. More often the object longed for and

ONE OF THE FIRST



VICTOR, DECEMBER, 1895

toiled for is the comfort and enjoyment of the family far away ; is the retrieving of a fortune lost, or the making of a fortune new. He may be the man of mature or advanced years looking back with regret at failure in some other pursuit; or another, looking ahead with the light of certain success shining from youthful eyes. In any event, and with the great majority, his intentions are of the best—his purpose wholesome. That which not infrequently comes from all this, is, poverty become wealth, and bankruptcy solvency. Without these incentives, whether good or bad, and without occasional realizations, there would be no seeking after hidden treasure ; no trial of men's souls to their better tempering, by a war with nature for that which she so begrudgingly yields.

From its beginning, the advancement of the camp was certain, if not always, by reason of adventitious circumstances, steady. When the books of '91 were closed, the pioneers of the district had dug from the surface something like $200,000. The value of the discoveries made, except by those who had pinned their faith to the embryo camp, was scouted. Capital stood aloof, or, worse, turned away with a sneer. The faith of those, however, who were engaged in the work of discovery and development, was still undimmed and their determination undaunted.

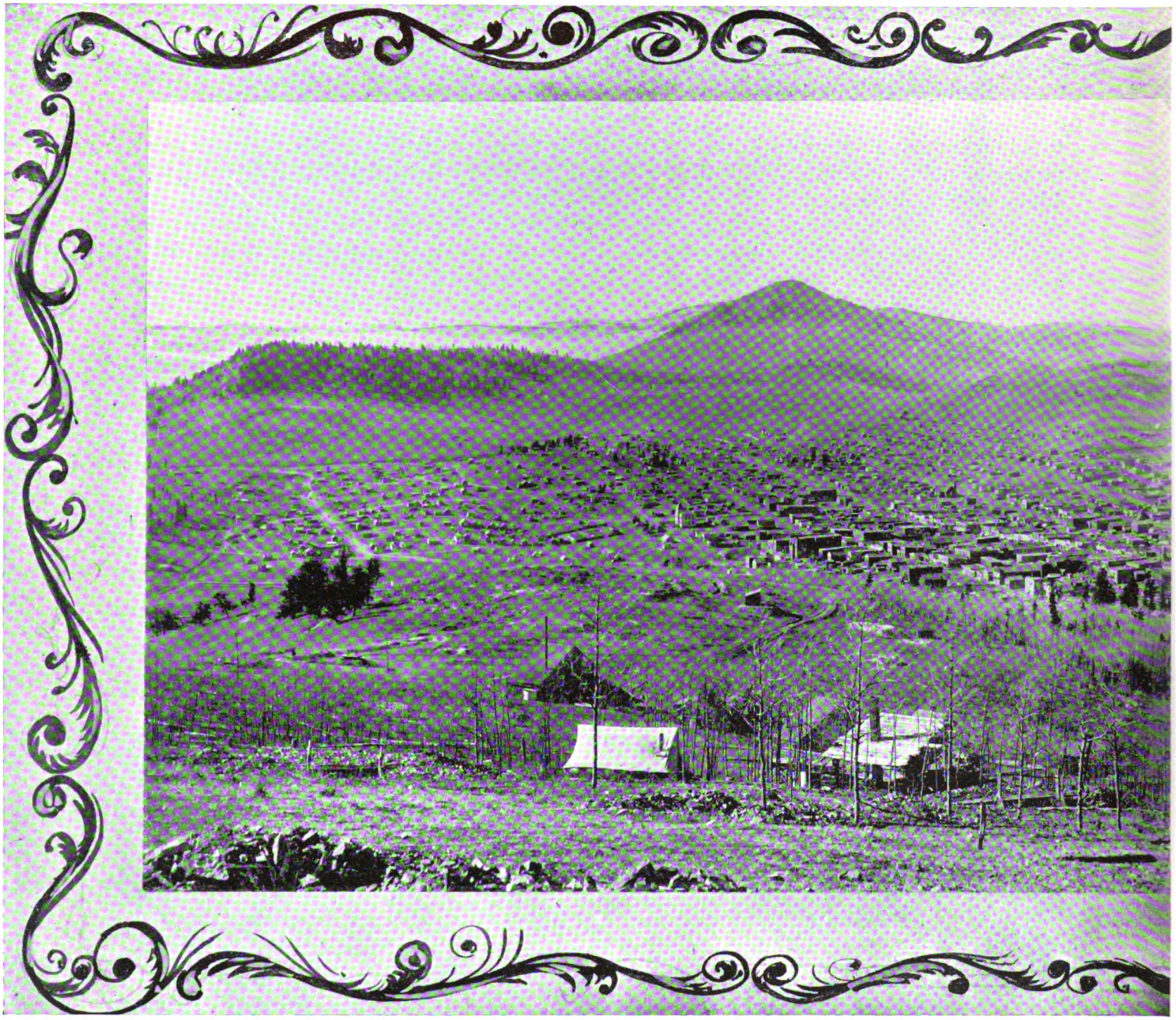
In 1892, the camp produced gold to the value of about $600,000, thus trebling the production of '91. The population of the district during this year increased in still greater ratio, so that by its close several thousand people were busily engaged in prospecting, in actual mining, and in the other trades and pursuits incident to a mining camp.

All this time, and even to a much later period, the merits of the camp were compelled to fight their way to recognition, inch by inch. First it was that the tidings of rich discovery, as they flew to the

*Gold Hill* *Anaconda Mines and Tunnel* *Blue Bell Mine* *Hartzell Mill*

ANACONDA, DECEMBER, 1895

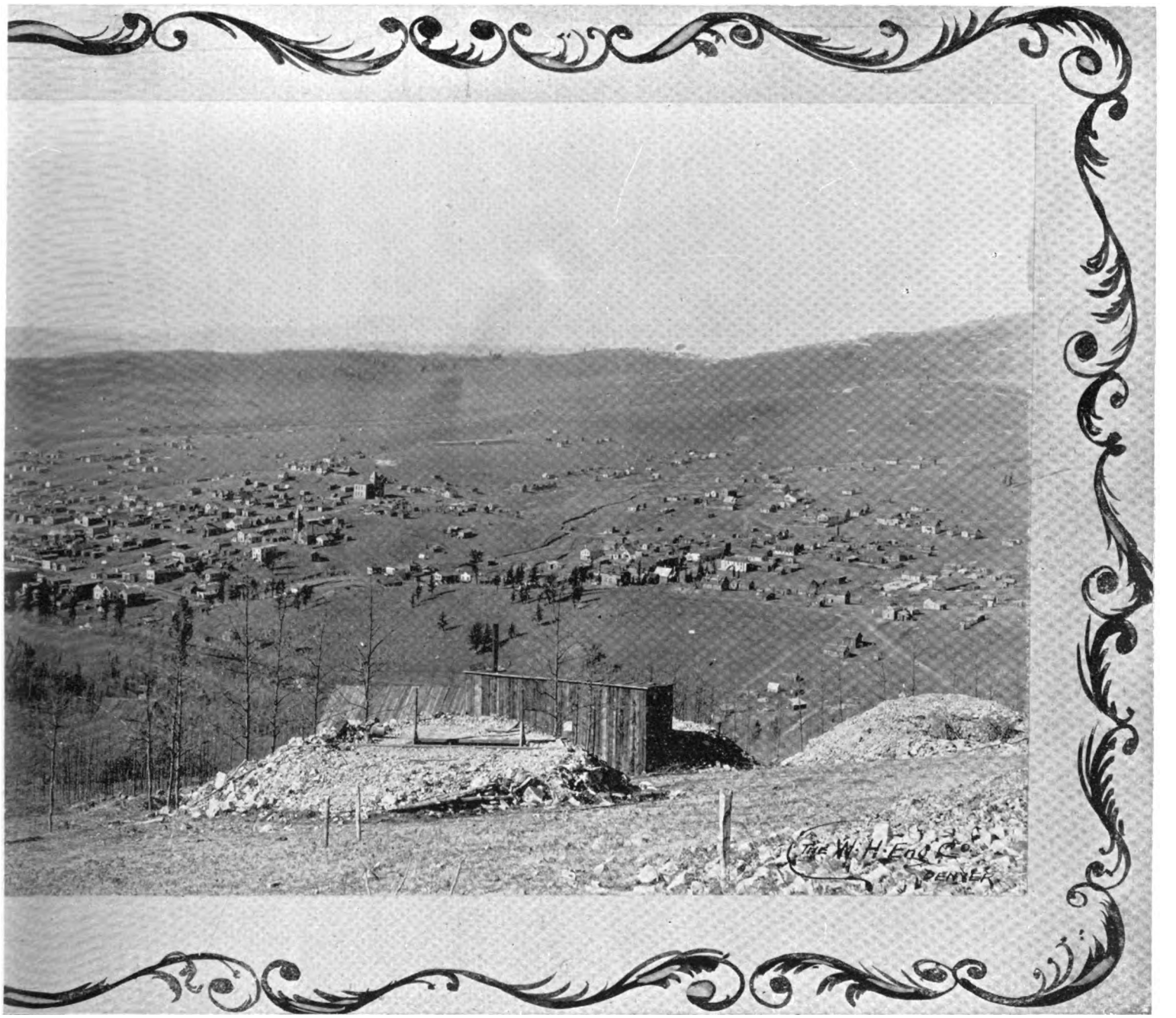
outside world, were discounted with "Another Pisgah! there is no gold at Cripple Creek;" then it was when the truthfulness of the discoveries could no longer be questioned, "The gold rock is of the surface merely, and, while from a scientific standpoint unaccountable, can not continue." Again, the miner, delving deeper and deeper, still finding ore and finding it between walls, the carper, forced into the last



CRIPPLE CREEK—MOUNT PISGAH IN BACKGROUND—

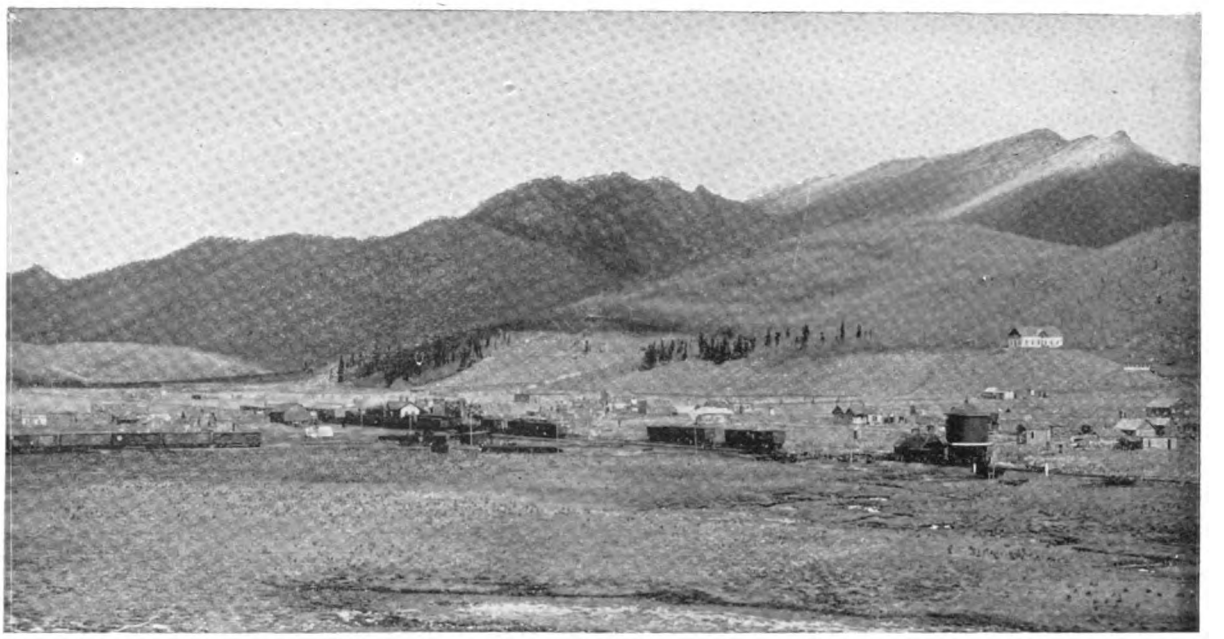
ditch, exclaimed: "There can be no true fissure veins, and the camp's future must be short lived." Nevertheless, in the face of the loud assertions of back-capping wiseacres, with little or no means of their own, without the stimulating influence of capital, the early comers kept persistently at work, sure in their own minds of ultimate success.

It was not only that mining experts withheld their approval, and mining investors substantial aid, but the camp's pioneers were confronted with the great cost of getting supplies in and shipping their ores out. Skepticism was not to be long triumphant. The tide of immigration continued. Many remained, a few returned, and of these latter the major portion to come again. Primitive facilities for transportation




—VIEW FROM GOLD HILL—DECEMBER, 1895

were taxed to their utmost. The people who were there, whether wisely or not, must be sustained; supplies must be hauled in and rock out; far-seeing men, recognizing the truth of the saying of the mines that gold is wherever it is found, and that whatever is, is, would-be scientists to the contrary, recognized the necessity of putting the camp in closer touch with the outside world.

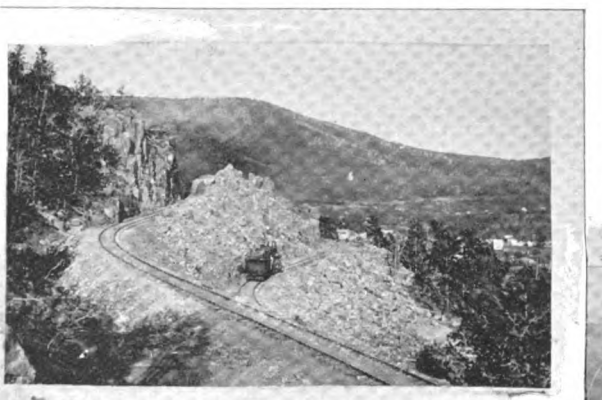


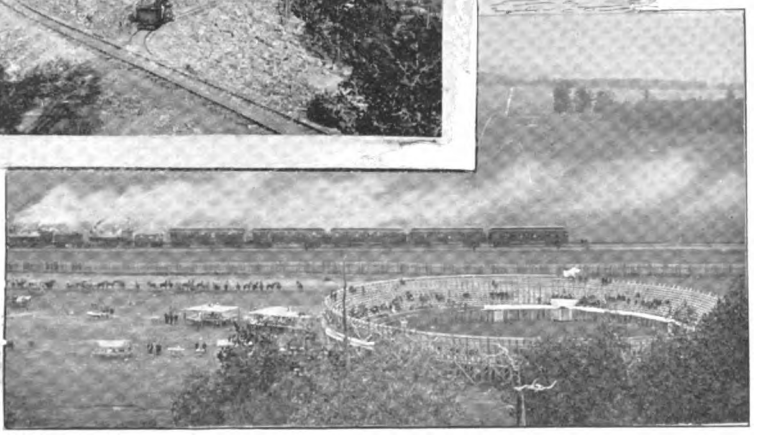
GILLETT

It was still in '92 that the first railroad to Cripple Creek was projected, and the work of construction begun. This was the Midland Terminal, tapping the Midland Railroad at Divide, which station had long been the point of supply of the camp. The throwing of the first shovelful of dirt in this undertaking, made certain the camp's future and incited its promoters to renewed activity. From this time on, and with them at least, there was no longer any doubt as to both the permanence and value of the Cripple Creek District as a producer of gold.

The year 1893 was one of steadily increasing population, wider exploration, added discoveries, and multiplied production. Instead of digging $600,000 of gold values from the earth, something over $2,000,000 stood to the credit of the camp upon the ushering in of the new year. While not yet through with its struggle for recognition, the wonderful achievements of the camp had, to a great degree, silenced its decriers. In this year of '93 had come the closing of the India Mints, the practical demonetization of silver by the Congress of the United States, with the resultant depression in silver mining and the demoralization of capital invested in that industry. In spite of all this, it is to the credit of Cripple Creek that it continued to forge ahead, and the results obtained, compared with those of the preceding year, are the more remarkable.

Viewed in the light of today, it will, perhaps, be conceded that to Cripple Creek, the shutting down of silver mines in '93 was not an unmixed evil. It resulted in pouring into the new camp a host of experienced miners deprived of employment elsewhere. These, with those they found at work, were, during the year, to sow the crop that was to be harvested later. With nothing else to do but prospect, the newcomers scattered themselves over the district, and, if there was a lack of capital behind them to





TERMINAL SWITCH-BACK, VICTOR

SCENE OF BULL FIGHT

GOLDFIELD

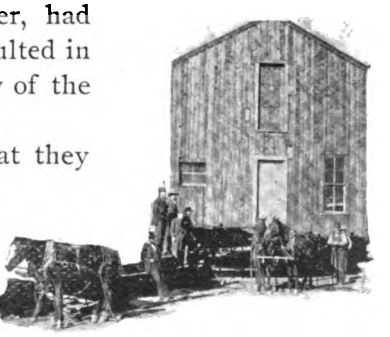
immediately make of their prospects, mines, their discoveries, day by day, extended the limits of the gold field far beyond the most enthusiastic expectations of the first adventurers, and when, finally, capital made its appearance, the prospector's work bore ample fruit, and the end not yet.

It was not alone from the panic and its effects that Cripple Creek was to suffer ; another disaster, and purely of local origin, was impending. Its first rumblings were heard about Thanksgiving Day. The cloud then appearing no larger than a man's hand, was to grow to the complete eclipse of the industrial life of the district. A discontent at the absence in the camp of uniform hours of labor, fanned by so-called leaders among the miners, finally led to most extraordinary results. Upon that day, set apart throughout the nation for the giving of thanks to Divine Providence, a meeting of the agitators was held. This was followed, December 1st, by a notice from the miners' unions to the mine owners, that eight hours must be uniformly accepted by them as a day's work without any reduction of wages. The demand not being acceded to, a general strike was, January 1st, 1894, declared. The leaders of the movement upon the part of the miners, by persuasion, by threats, and, where these were unavailing, by resort to violence, were finally successful in bringing, substantially, all the miners of the district, whether members of the union or not, into the strike.

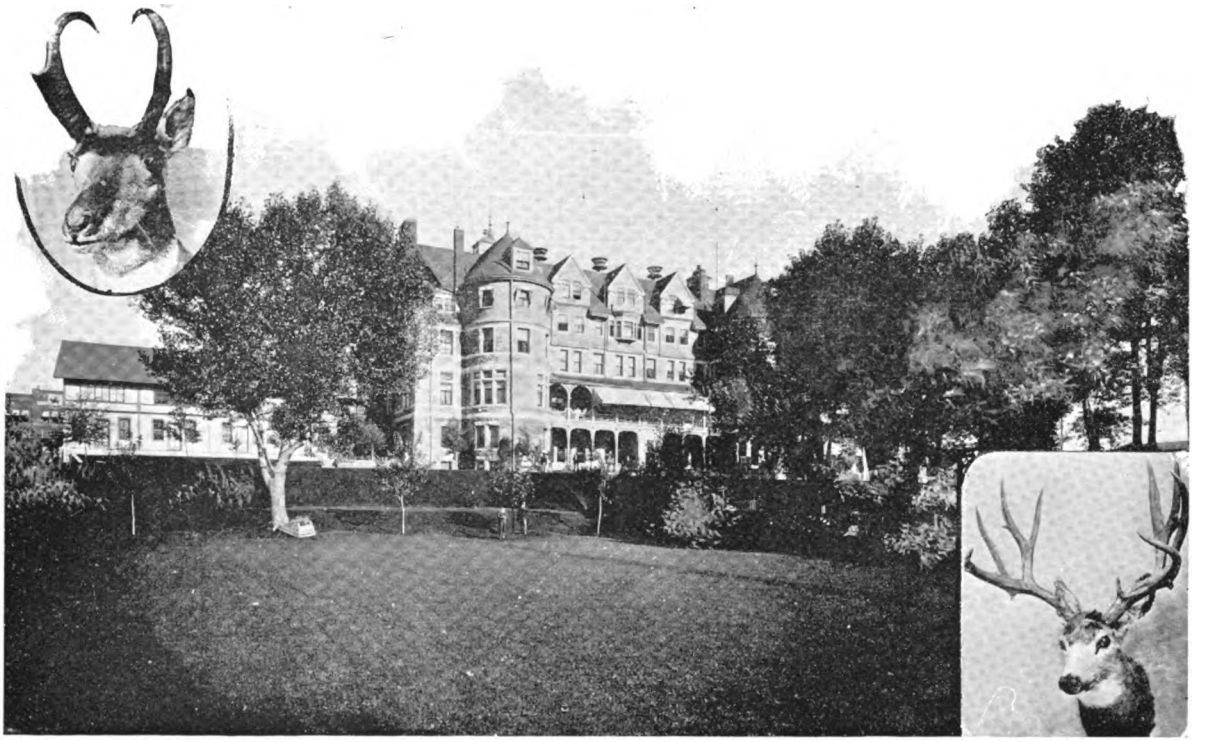
Thus it was that with the ushering in of '94, a year otherwise of the fairest promise, universal industrial stagnation prevailed throughout the camp. But the cessation of legitimate employment, and the consequent stopping of both development and production, was by no means the worst feature of the situation.

In the fall of '92, by a remarkable change in political affiliation, a considerable majority of the voters of the State, exasperated by Eastern hostility to silver, had revolted from their allegiance to party and voted Populism up. This action resulted in the election of Davis H. Waite as Governor, and in adding to the vocabulary of the Nation a new word—Waiteism.

The details of the strike of '94 are so familiar to the general public that they may well be omitted from these pages. It will suffice to say that resistance to the law's enforcement grew to such proportions, and the peace of the community became threatened to such a degree that the Sheriff of El Paso County



ON THE MOVE



ANTLERS, COLORADO SPRINGS

found himself with the ordinary agencies of his office, powerless to execute process and protect private rights. In this emergency, he called upon the Chief Executive for assistance. The call was immediately responded to, and, March 17th, the National Guard was ordered into the disturbed district. Unfortunately for all concerned, the Governor sent his Adjutant-General, as his personal representative, with orders to accompany the officers in command, keep the executive advised and transmit his commands. This Adjutant-General, while in thorough accord with the Executive, and, perhaps, for that very reason, was thoroughly unqualified to discharge the functions of an important appointment. Both a blatherskite and a demagogue, he displayed an utter disregard for public or private interests, and alone sought, at this time and later, to advise those things which would ingratiate himself and his chief into the good graces of those in actual rebellion against the orderly execution of the law. That he should, while acting as the confidential adviser upon the ground, of the State's Chief Executive, so far forget what was due to the responsibilities of his office and the law-abiding people of the State whose servant he was, as to accept a retainer from those who were resisting the law, is sufficient to brand him as utterly lacking in capacity to appreciate the proprieties of the situation. The Governor, learning through his Adjutant-General that he could not aid the Sheriff without interfering with the plans of the strikers, whom he chose to consider his particular friends, immediately ordered the troops back to their armories, and all this at great expense to the State.

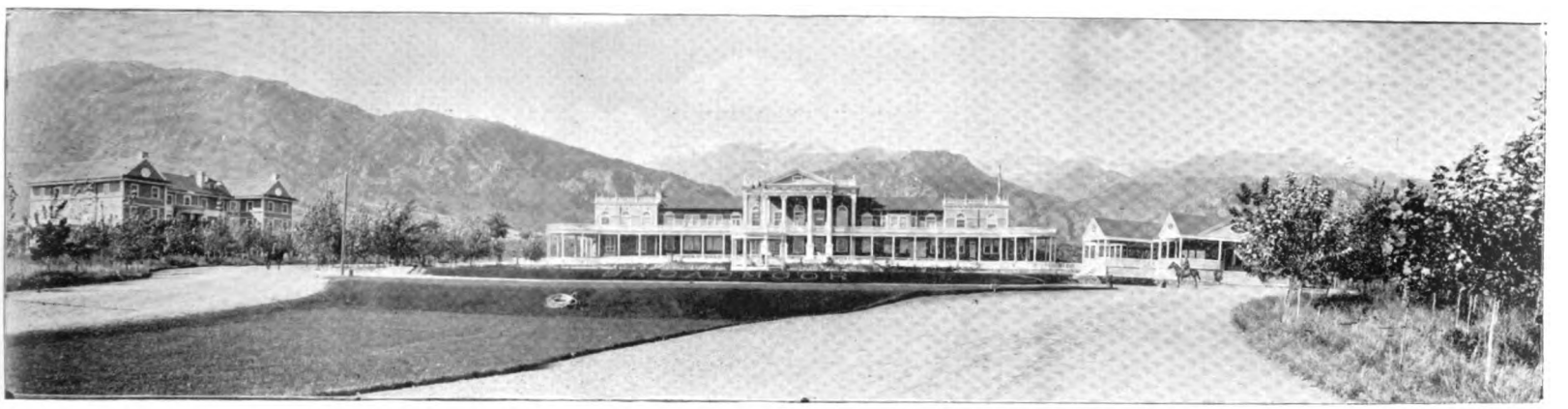
But this fiasco was not to be the only exemplification of Wateism. The authorities of El Paso County, finding themselves deserted by the chief officer of the State, and confronted by the strikers, emboldened by that desertion, concluded that they must bring order out of chaos through their own efforts. Deputies were appointed, armed and organized, and an advanced movement was made with the reduction of the stronghold of the strikers as its object. A second call for assistance was made upon the Governor by the Sheriff, and, June 5th, the militia was once more ordered to Cripple Creek. The officers in command were again chaperoned by the Adjutant-General. Upon reaching the scene of action, the State troops, under instructions from the Commander-in-Chief, were employed, not in supporting the Sheriff, but in protecting the strikers. The constituted authorities of the county, shrinking from

ELK HOTEL, COLORADO SPRINGS

CASINO

COUNTRY CLUB, COLORADO SPRINGS

civil war threatened by the Chief Executive, disbanded the deputies and retired from the field. But such an anomalous condition could not last always. The people of the State had become aroused and public sentiment was overwhelmingly against Waiteism. The troops were at length withdrawn, the ringleaders of the strike fled the country or subsided, and a normal condition finally prevailed.



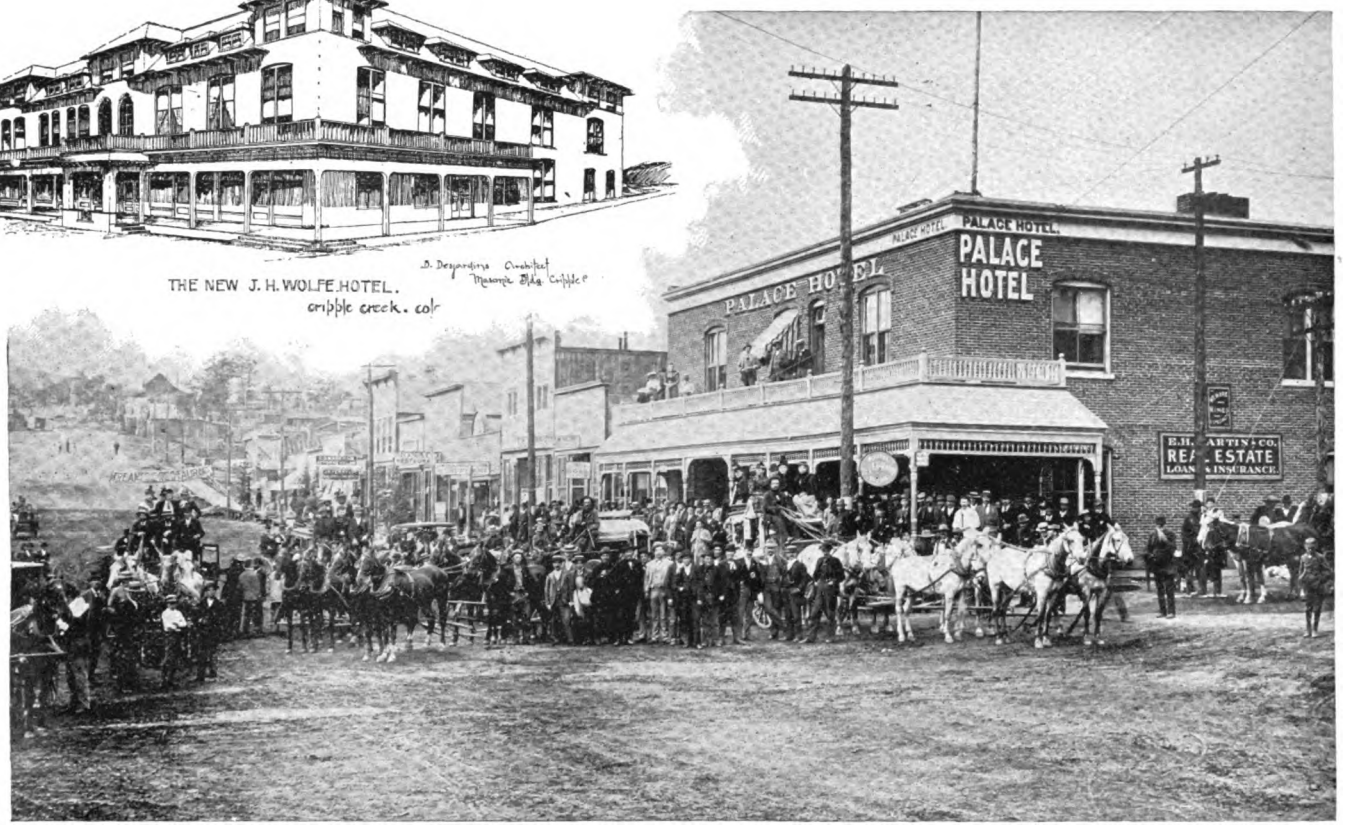
BROADMOOR CASINO AND NEW HOTEL, COLORADO SPRINGS

It would be impossible to estimate the cost, to all concerned, of the Cripple Creek "war." The expense to the State was something over $75,000, and to El Paso County about $60,000. The loss to the miners in wages, to the mine owners in ore values, and to the district in the matter of development, can only be imagined, not calculated.

With the coming on of the strike, the country was just beginning to recover from the worst effects of the panic of '93. Throughout the East, and especially in the money centers, men with speculative tendencies who had suffered heavy losses, were seeking opportunities for speedy recuperation. The attention of many of these was being seriously turned toward gold mining as the means, with Colorado and especially Cripple Creek as the possible field of operation. When it came to be known not only that the camp was in the throes of an industrial controversy, carrying with it outrages against person and property, and armed and forceful resistance to arrest for the commission of the same, but that the law breakers were encouraged and supported by the State government, the claims of a Colorado investment, however meritorious, were laughed out of court.

Had it not been for this set-back, who can say what present predictions of Cripple Creek's future would not have been already realized?

RECREATION


CRIPPLE CREEK (AS IT IS) PALACE HOTEL

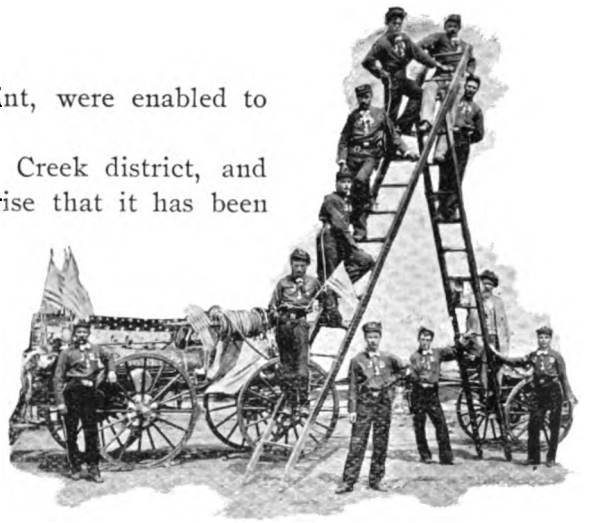
Notwithstanding the misfortunes of '94, during several months of which work was quite at a standstill, the camp increased its production over that of '93 $1,000,000. This gain, under the circumstances, fixed the character of the district as a profitable field for investment. It was in '94, too, that Cripple Creek first heard the screech of the locomotive, and found itself upon the great commercial highway of the country. It was during this year that the Florence & Cripple Creek Railroad was projected by the enterprise, and constructed with the capital of Colorado men. This road, although commenced later than the Midland Terminal, not being dependent upon the money loaners of the East for its pay-roll, was the first to put itself at the service of the ore shippers. It tied the new mining district to the Denver & Rio Grande Railway, the distinctive transportation enterprise of the State, and furnished the output of the district, with a down-hill haul to the valley of the Arkansas where cheap fuel, that tremendous incentive to investment in manufactories and reduction works, abounds.

It was substantially in '94 that another commercial enterprise of great advantage to the camp, namely, a telephone service, not alone local, but connecting the district with a State-wide system, was put into complete operation. It would not be easy to give too much credit to the Colorado Telephone Company and its efficient general manager, E. B. Field, Esq., for their foresight in early measuring the future of the camp, and their energy in occupying the territory. It was in November, 1893, that the Chamber of Commerce of Colorado Springs addressed a communication to the company urging upon it the desirability of adding Cripple Creek to its great telephone circuit. Action was at once had by the company, and the day following the receipt of the communication, the Chamber of Commerce was advised that the first steps looking to the accomplishment of its wishes were being taken. More than the necessary number of contracts were, without difficulty, obtained by the agent of the company at Cripple Creek; a franchise was granted by the Town Council, and the work of construction was commenced at each end of the line. As a result, on the 18th day of December, 1893, a local telephone exchange was opened, and on the 29th of the same month, a copper metallic circuit was established between the Springs and

PORTLAND HOTEL

the camp, and the patrons of the company, at the latter point, were enabled to converse with their friends throughout the State.

It speaks well for the business growth of the Cripple Creek district, and certifies to a deserved reward to the company for its enterprise that it has been compelled to increase its facilities until they now have, between Colorado Springs and the camp, three copper metallic circuits and have just given orders for the immediate stringing of three more, which will make six circuits between the two points. The company, in order to meet the demands of the public, has also found it necessary to establish two additional circuits, especially for the Cripple Creek business, between Colorado Springs and Denver. It was also found necessary by the company, in addition to the Cripple Creek exchange, to establish one at Victor, which was opened to the public May 1st, 1894. The company now enjoys the patronage of 143 subscribers at Cripple Creek ; has threaded the district with over 400 miles of telephone wire, and boasts of an exchange, at that point, the most thoroughly equipped, with all the latest telephone patent devices in use in the world, and, consequently, the most efficient.



VICTOR FIRE BRIGADE

It should be stated, in this connection, that while the Midland Terminal Railroad, embarrassed by want of capital and necessarily expensive construction, failed of completion to its Cripple Creek terminus within the time first anticipated by its promoters, it, nevertheless, from the date of its construction to Midland Station, became a valuable adjunct to the camp's development.

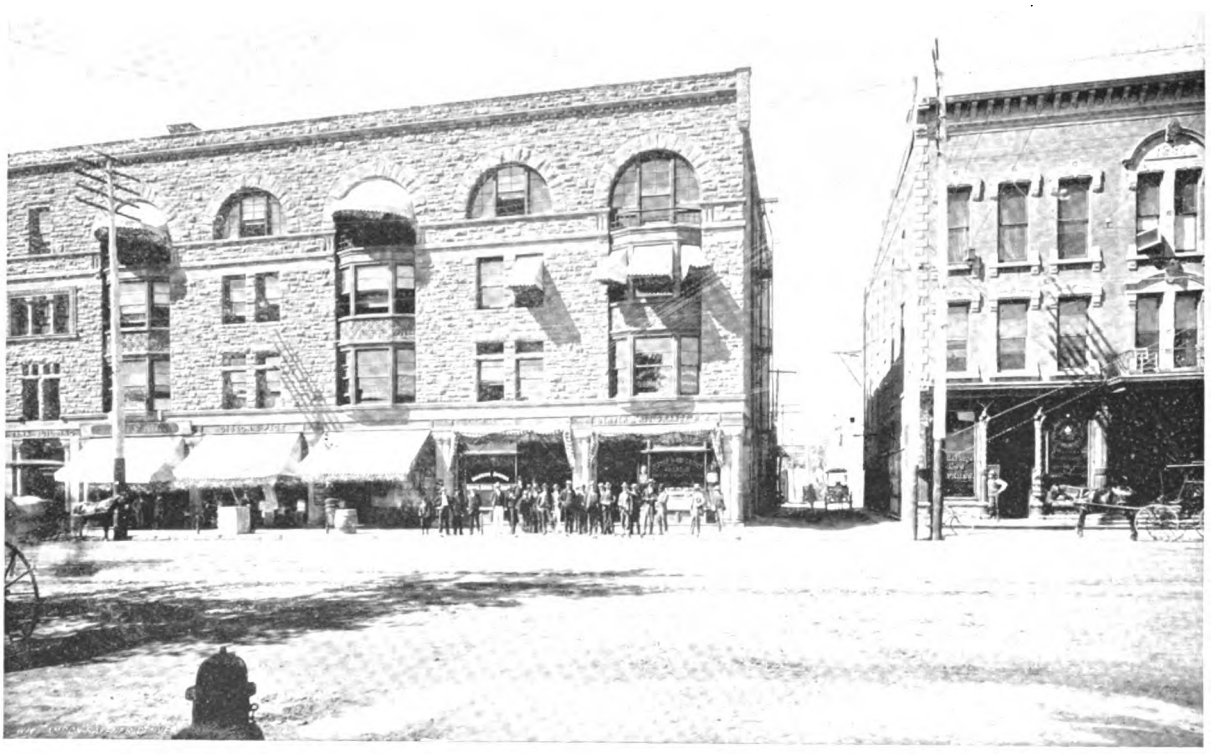

VICTOR HOTEL, VICTOR, CRIPPLE CREEK


ROBINSON'S CORNER, COLORADO SPRINGS  BOARD OF TRADE, STOCK EXCHANGE

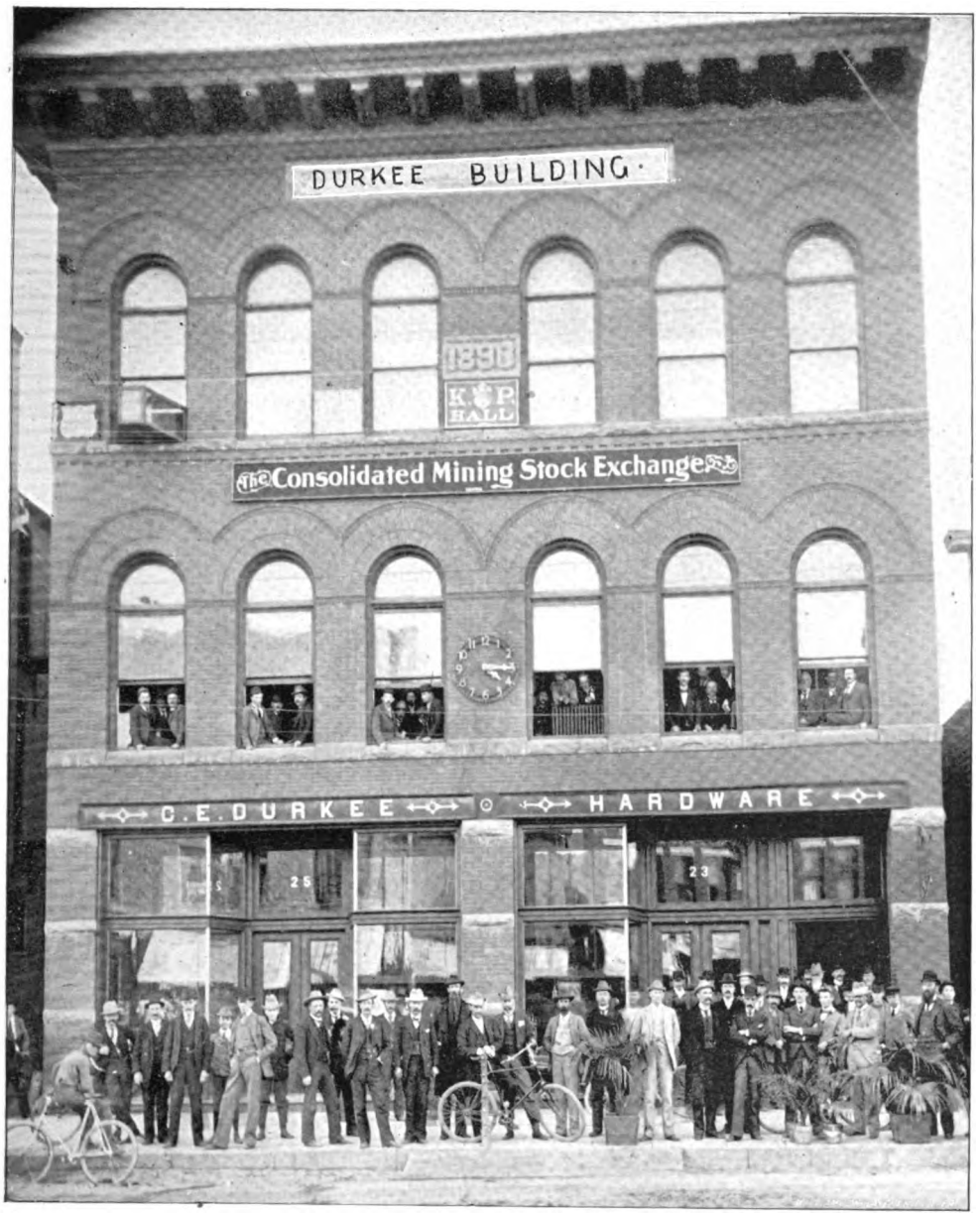
With the strike at an end; with railroad, telephonic and telegraphic communication with the outside world accomplished facts; with enterprise unfettered, and with the future of the camp accepted as certain, the sun of '94 set, and that of '95 rose, amid clouds of golden promise.

A gold fever, which is becoming epidemic throughout the civilized world, has seized upon the money centers of Europe and especially upon London and Paris. That Paris should go wild over speculative enterprises, located in remote regions, is not to be wondered at, and scarcely calls for explanation. That conservative London should yield to these attacks, however insidious, is a different thing, and that Lombard Street should give way to such excesses, is only to be met with the explanation that conservatism run wild, out-hazards the most hazardous. But that there is much method in this golden madness, will, upon slight consideration, appear quite plain.

The repeated blows given silver by the money-owning combination, so potent in the fiscal world, which have resulted so seriously to the discredit of that metal, have created a money famine and developed



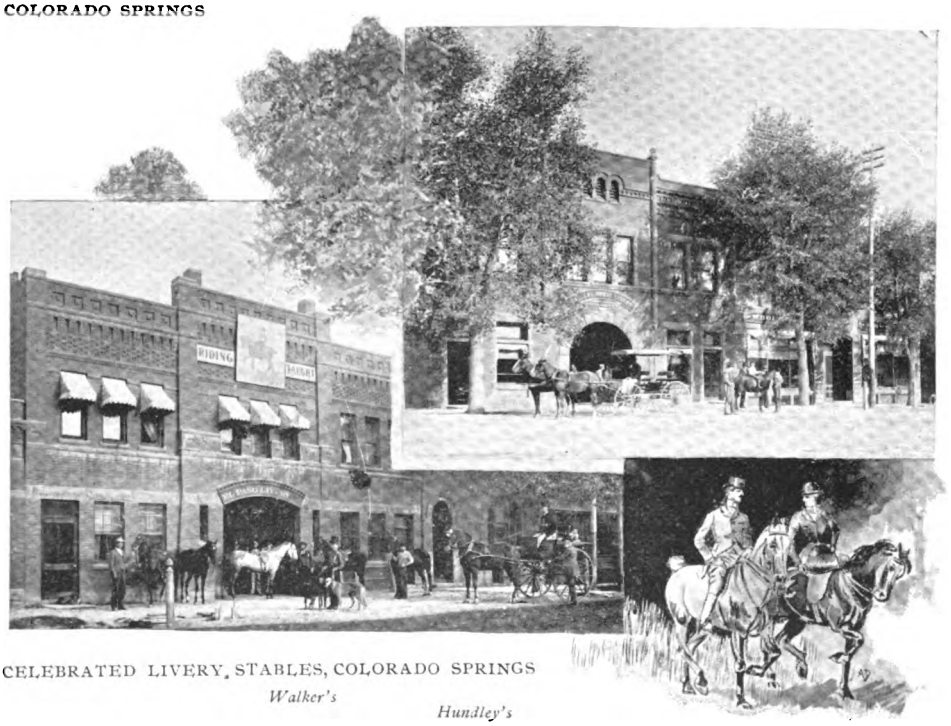
FIRST NATIONAL BANK BUILDING AND COLORADO SPRINGS STOCK EXCHANGE




CONSOLIDATED EXCHANGE, COLORADO SPRINGS

an insatiate greed for the yellow metal. This abnormal appetite has stimulated the search for, and energized the development of, gold properties everywhere. Nowhere has this effect of silver's general demonetization been more apparent than in our own country. To the casual observer, it would almost seem that in requital for the disaster that, through no fault of ours, overtook the business of silver mining, a kind dispensation of Providence had revived for our miners the touch of Midas, and metamorphosed silver mines into gold mines ; silver camps into gold camps, and discovered to their quickened visions gold deposits where these never were before. As a matter of fact, however, it has only happened that silver mining, having heretofore monopolized the attention of prospector and investor to the neglect of gold, it naturally followed upon the depression in silver values that the restless and resistless energy of the American miner should have been directed to a search for the more favored metal. As the silver, which was to make the Leadville of 1880, was ignored in the California Gulch of 1860, so the gold reserves, which are now to save the precious metal preëminence of Colorado, have for many years been overlooked—a cow pasture has become Cripple Creek.

There is substantial evidence that a desire for investment in gold properties is taking deep root in the financial centers, great and small, of our own country. It is doubtful whether the movement of money towards



CELEBRATED LIVERY, STABLES, COLORADO SPRINGS

*Walker's* *Hundley's*

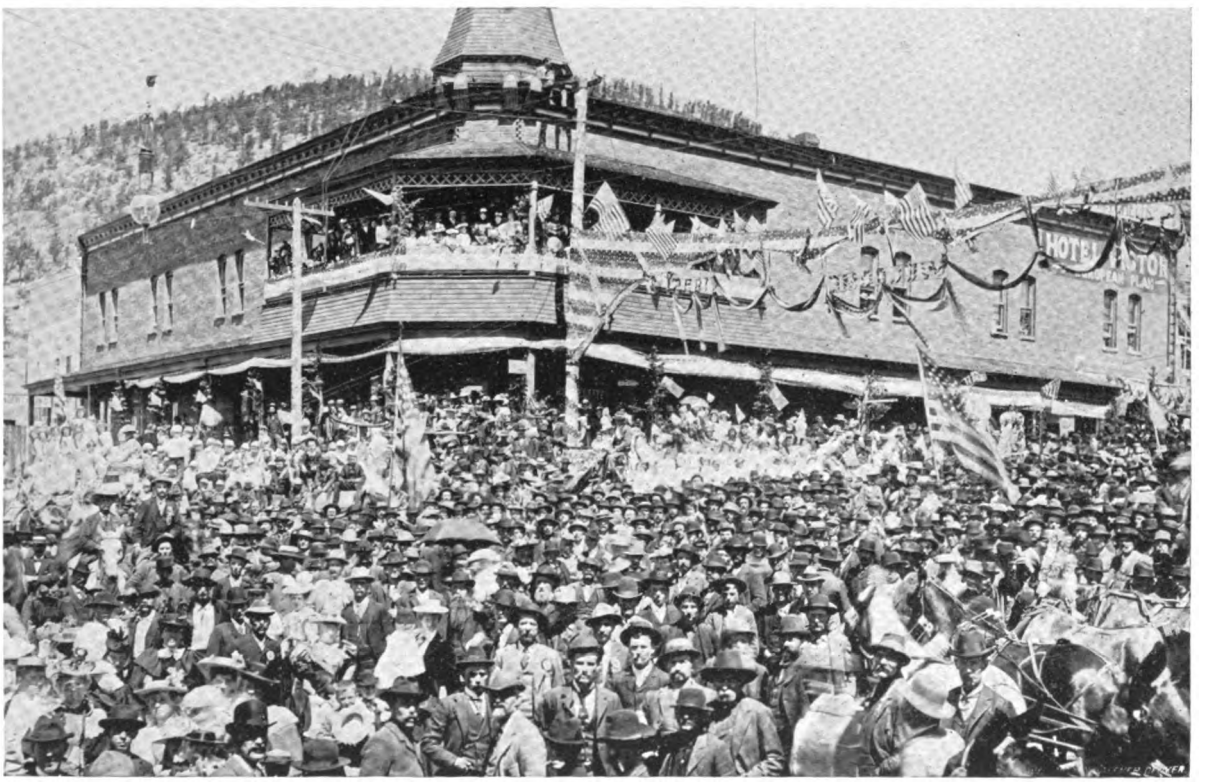

BANK OF VICTOR, VICTOR

mines, will ever assume here the tremendous proportions now characterizing that movement in Europe, and from present indications it is far from desirable that such should be the case. Money made from legitimate enterprise enriches the successful to the injury of none, while fortunes wrung from baseless stocks fill the pocket of the manipulator to the direct loss of the credulous.

In gold mining, as in art, distance, not infrequently, lends enchantment to the view. While disaster has many times come to the European investor, through chasing bubbles gilded by far-away suns, no such universal collapse has ever overtaken our own people. This condition has resulted, not alone from the intrinsic value of American discoveries, but as well from the accessibility of fields of operation, and the consequent opportunity for intelligent investigation. When New York, Boston, Philadelphia and Chicago grow fully alive to the avenues for profitable investment, now being opened to them in the gold fields of Colorado, no such thing as the remoteness of distant Africa will intervene as an almost insurmountable obstacle to satisfactory information. Our mines lie almost at their doors. With the railroad, the telegraph and the mail service, one or all, at the command of every would-be investor, there remains no good excuse for total blindness with its certain helplessness.

Colorado Springs, since it opened its eyes, somewhat sleepily, to Cripple Creek's possibilities, has been to that camp its fostering genius. It is reaping its reward. A golden stream, unremitting, constantly swelling, is emptying itself into the lap of that happy city.

Colorado Springs was founded by conservative people, and, notwithstanding the great good fortune which has been suddenly thrust upon it, the chief characteristic of its early settlement has been preserved. The nearness of the Springs to the Pike's Peak gold district, its early recognition of the true worth of the latter, and the enterprise born of that recognition, has made it natural that the city should become, in



VICTOR, FOURTH OF JULY, 1895

MOUND CITY, BETWEEN CRIPPLE CREEK AND ANACONDA

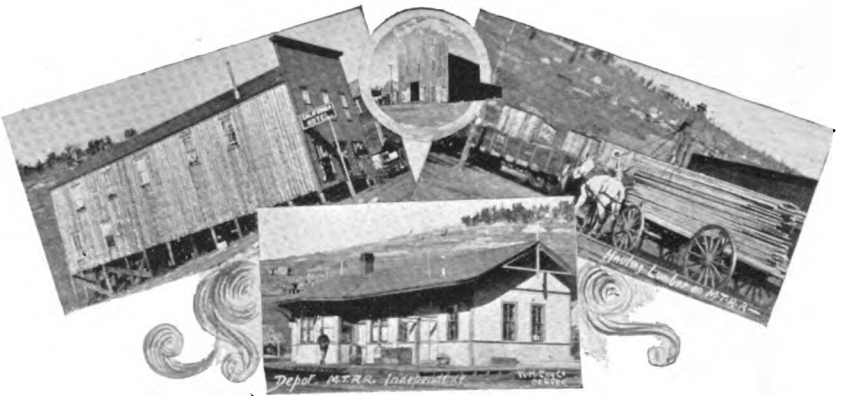
large measure, the commercial depot and business representative of the camp. The zealous discretion displayed in the earlier days by the Colorado Springs Chamber of Commerce, and, later, by the Colorado Springs Mining Stock Exchange, has exerted, and is still exerting, a powerful influence in this direction. The business interests of the city have become so intimately interwoven with those of the camp, that the former may well be considered an integral part of the latter.

As giving point to the suggestion already made that the facilities for investigating proposed investments in Colorado, are so ample as to reduce the chance of failure to the minimum, more particular reference to the Colorado Springs Mining Stock Exchange will be pertinent. Its inauguration in the summer of 1894 was the natural and necessary outgrowth of existing condition. Some time prior to the opening of this, its pioneer exchange, Colorado Springs had come to be known as, par excellence, the market for Cripple Creek stocks. The business of brokerage had, in a go-as-you-please way, grown to considerable proportions. There being no restraints, the danger was imminent that loose and irresponsible methods of transacting a delicate business would become so prevalent as to endanger the good name of both Colorado Springs and Cripple Creek, and likewise besmirch the reputations of those who were legitimately employed. To a thoroughly organized and properly equipped mining exchange, conservative bankers, business men and brokers turned their eyes as to a safe harborage from the threatened storms of wildcatism. The result has more than justified the purpose of the promoters. Other exchanges have been organized, not only at the Springs, but at Cripple Creek and Pueblo, while the Mining Exchange of Denver has taken on a new lease of life, and a second has just been launched there. However many exchanges may be formed, it is true now, and the prediction that it will continue to be true is a fair one, that the seal of approval, stamped upon a Cripple Creek investment by the Colorado Springs Mining Stock Exchange, will attest in the highest degree its value. Any intending investor in Cripple-Creeks, or, for that matter, in any other Colorado stocks, may, upon application to the individual members of this exchange, or to its officers, obtain the most reliable information possible. Last month ground was purchased in the heart of the city on which a fine new home for the parent Exchange is to be erected.

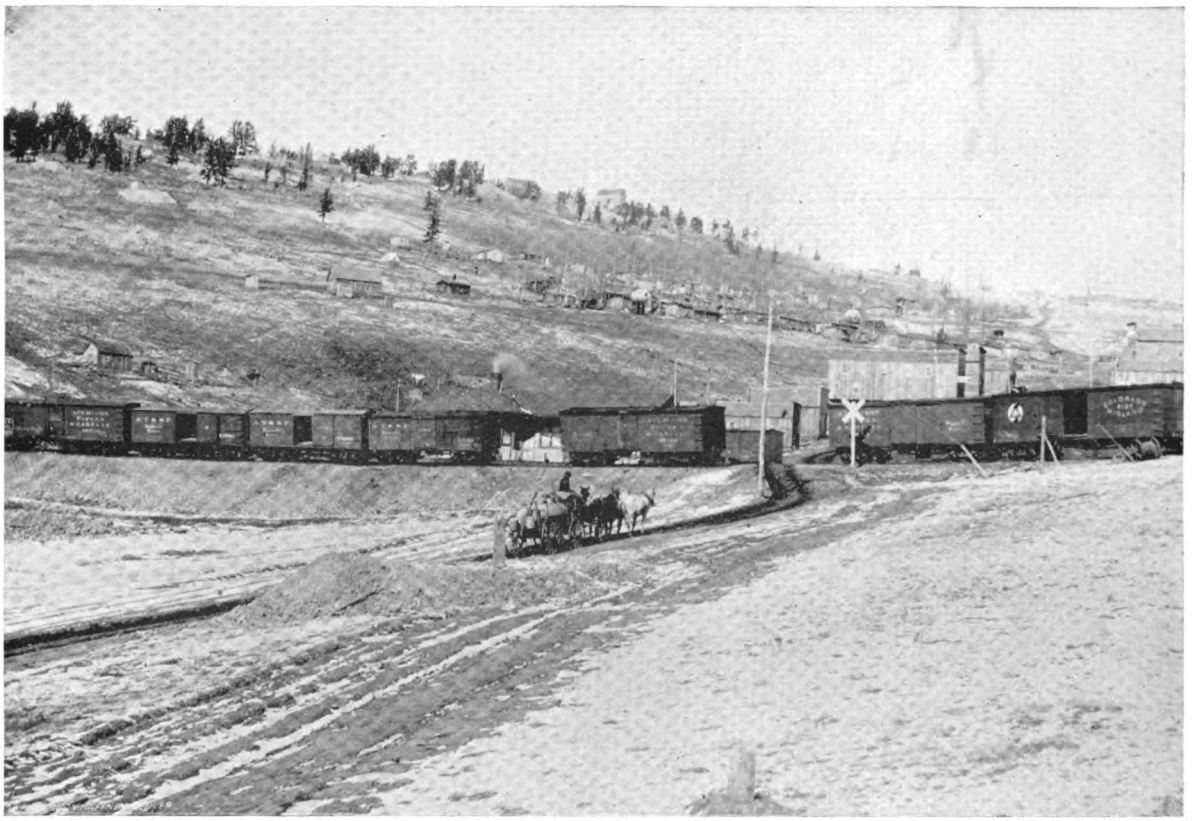
A MOUND CITY HOME

A MOUND CITY HOME

The Board of Trade and Mining Exchange of Colorado Springs was organized early in the present year with a membership limited to 100. Unlike the pioneer Exchange, it did not establish the rule of charging a listing fee for companies, while the rates of commission fixed upon were considerably less. Many desirable companies had refused to list on the Exchange, and the Board of Trade from the day of its opening call has been the scene of active trading; first in such shares and later in the listed stocks of the parent Exchange as well. The old Exchange was soon compelled to allow trading in all stocks, non-listed as well as listed, and recently has revised its schedule of commissions. The Board of Trade, from the beginning, has been wisely managed, has followed in the path of the Exchange in keeping the public fully advised of kiting schemes, while in volume of transactions—largely low priced shares—it has far outstripped its parent. A handsome structure is shortly to be built for the Board of Trade and for offices of its members by W. S. Stratton.



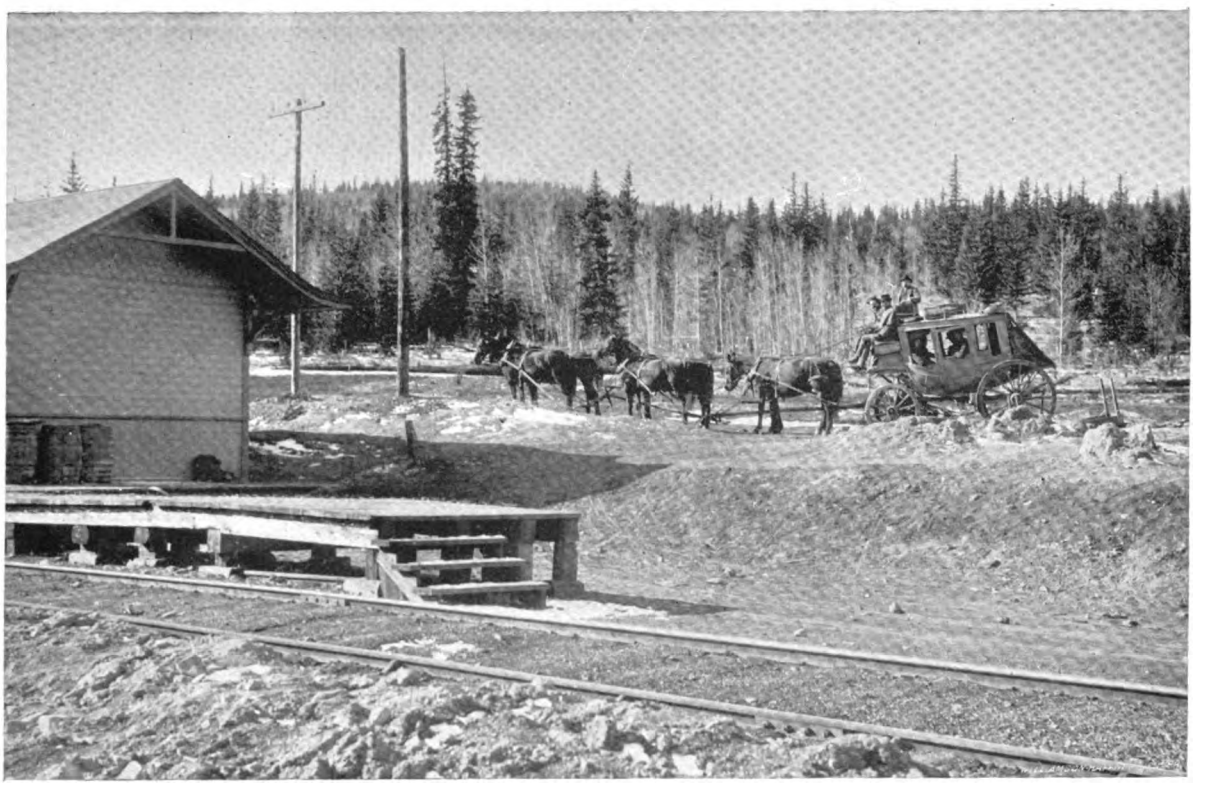
INDEPENDENCE VIEWS



BULL HILL, NORTHEAST SLOPE. INDEPENDENCE AND HULL'S CAMP

In October The Consolidated Mining Exchange appeared as a third competitor in the field for the buying and selling of Cripple-Creeks in Colorado Springs. Its membership roll was filled the first day the plan of organization was announced; already it has become a fixture and is doing a generous traffic. Many representative business men, particularly those who own large blocks of shares of companies in which they are specially interested, are members.

CABIN AND OWNERS

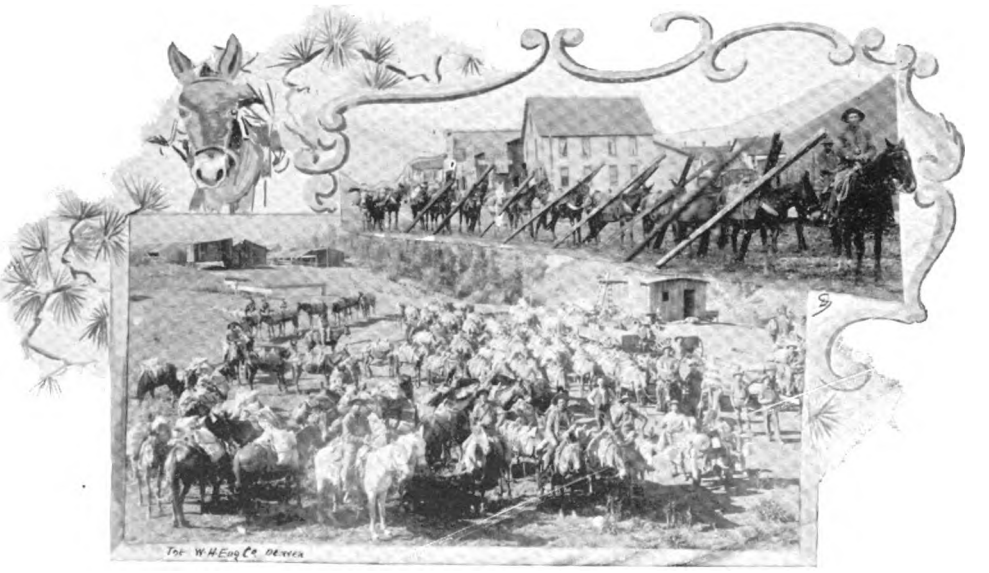


GRASSY. ARRIVAL OF STAGE AT THE MIDLAND TERMINAL DEPOT

Speaking of Cripple Creek investments, while it is not everyone that can buy a mine, and a comparative few that can indulge in the luxury of developing a prospect, with its consequent hazard, the many may become the holders of stock, and, at the present time, with but slight risk. A small investment may reap a rich harvest. The history of the camp to the present day emphasizes the possibility of substantial return, let the location be where it may, if anywhere within development limits, and these are widening all the time. There will, of course, be failures. There must, under the most favorable circumstances, be hazard in mining. Without the speculative characteristic, much of the allurement of the quest for the precious metal would be wanting. At the present time it may, however, be asserted, an unusual circumstance, that few, if any, of the Cripple Creek stocks at their market value, fail to represent the salable price of the holdings upon which they are based.

The development of a great mining district always carries with it excellent opportunities for the less exciting, but more certainly remunerative, employments, and Cripple Creek is no exception to the rule. Leading these enterprises, as of course, are plants for the concentration and reduction of low grade ores, and then follow the varied pursuits of life necessary to the existence, comfort and amusement of large aggregations of mankind. Banks, hostelries of all sorts and descriptions, water and electric light companies, machine shops, livery stables, stores and places of amusement, flourish, and are sources of great profit when wisely conducted.

Cripple Creek, used generally, embraces many towns and communities. Easily first among these is the City of

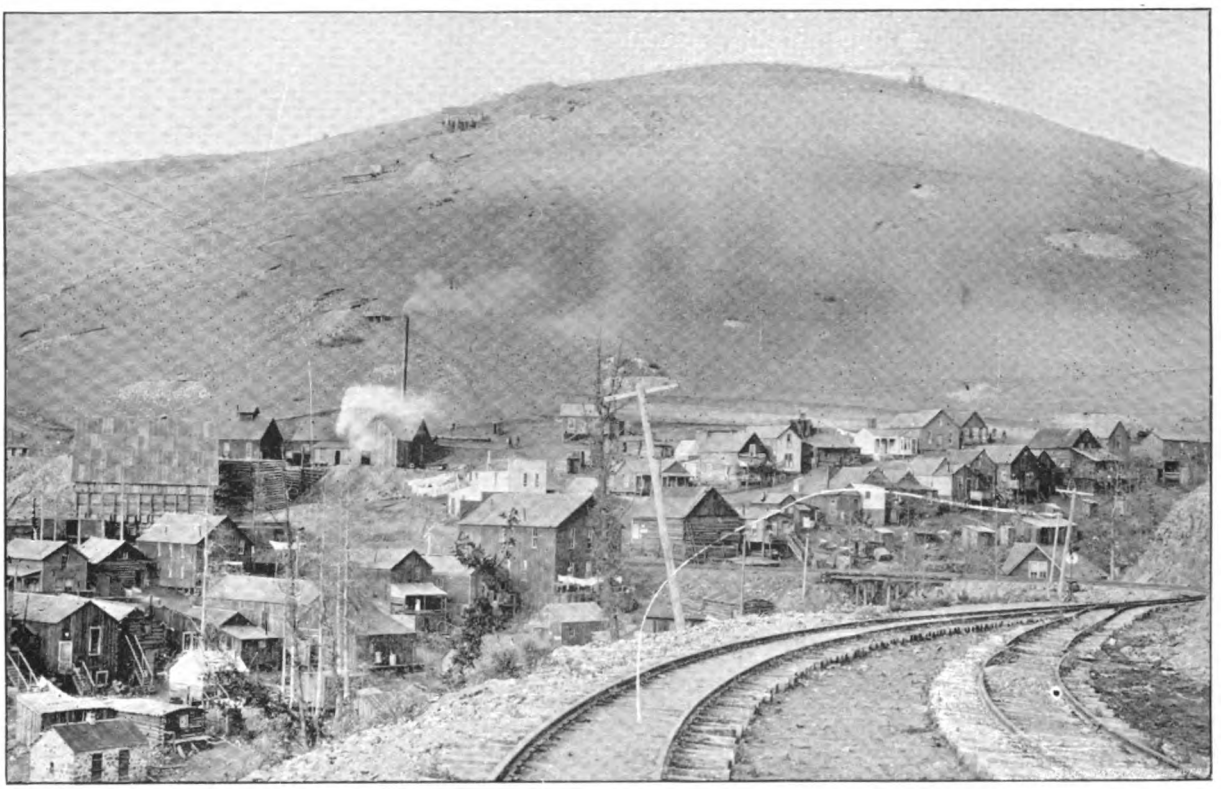


READY TO START

FIRST CHURCH

Cripple Creek, with its nine or ten thousand people. Then comes Victor, another city, steadily forging ahead. The phenomenal growth of Victor, perhaps better than anything else, furnishes an example of the magical forcefulness inherent in a live American mining community. Not more than two years ago, a lone miner's cabin marked its site. It was surveyed and platted at the close of 1893. A year later, and six months after the completion of the Florence & Cripple Creek Railroad to that point, Victor justly claimed a population of 3,000, while to-day not less than 5,000 souls are domiciled there. Many brick buildings grace its streets; it is supplied with a telephone exchange; is lighted with electricity and otherwise enjoys the benefits of an advancing civilization.

After Cripple Creek and Victor, the former located at the northeastern corner, and the latter toward the southern boundary of the present productive area, come the incorporated towns of Gillett, Altman,

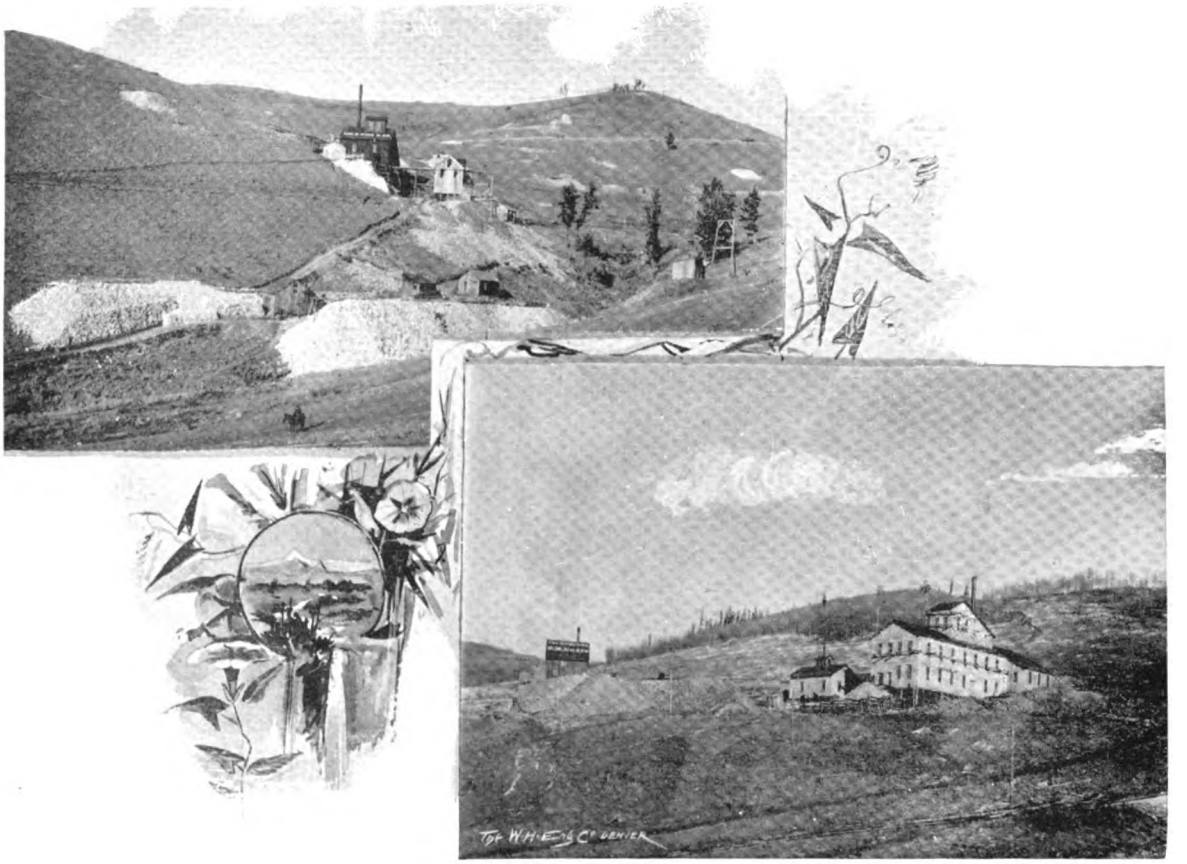


GOLD HILL. The Anaconda from F. &. C. C. R. R. Tracks.

Anaconda and Goldfield. Gillett occupies a plateau to the northeast of the district, and here are located the round-house and shops of the Midland Terminal Railroad. It possesses the advantage, unique in this district, of an abundance of pure, running water. This advantage is a standing invitation to ore reduction works and other industrial enterprises. Altman, crowning the now famous Bull Hill, is merely a residing place and supply point for the miners of the vicinity.

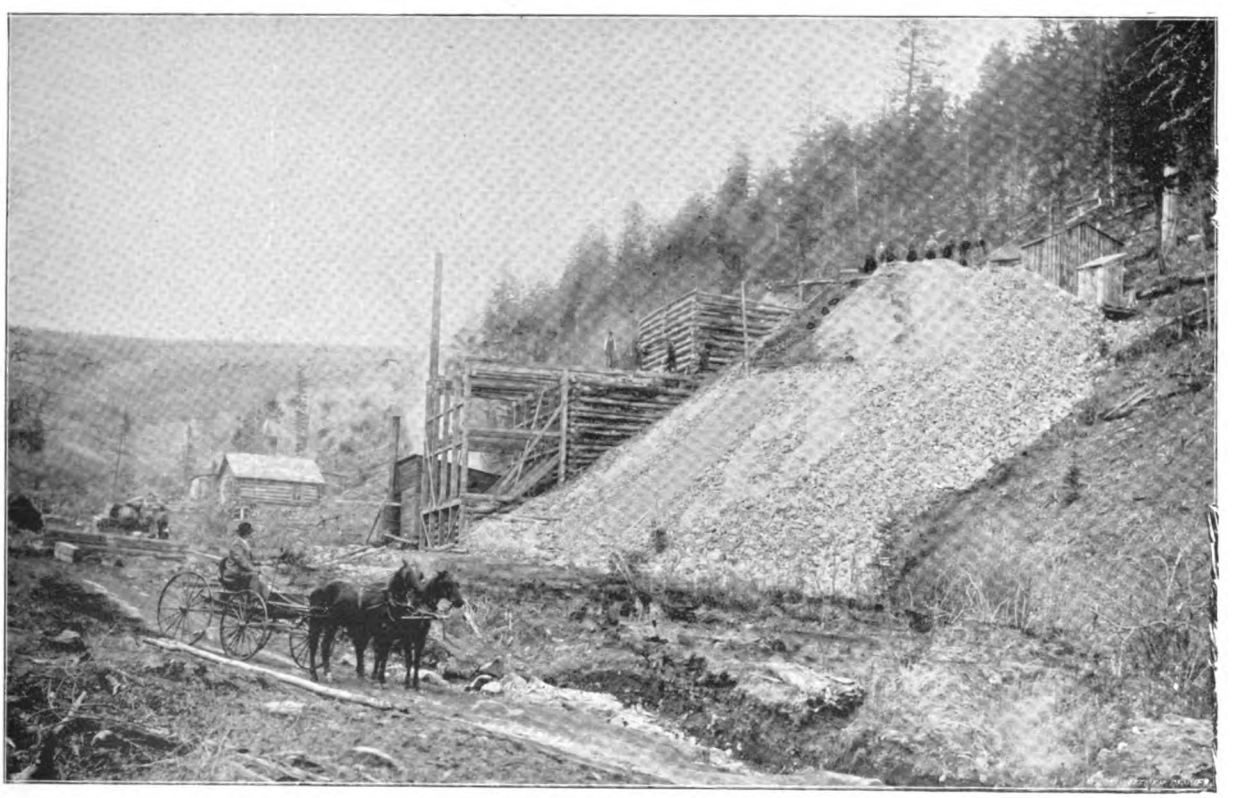
In addition to the towns mentioned, there are the settlements of Independence, Mound City, Elkton, Arequa and Lawrence, with others in embryo that may burst into municipal existence any day. Cripple Creek, Victor, Gillett and Goldfield each support one or more newspapers which furnish valuable aid in advancing the interests of their respective localities. The district, as a whole, contains within its limits more than 30,000 people, and every day adds to the number.

FIRST HOTEL

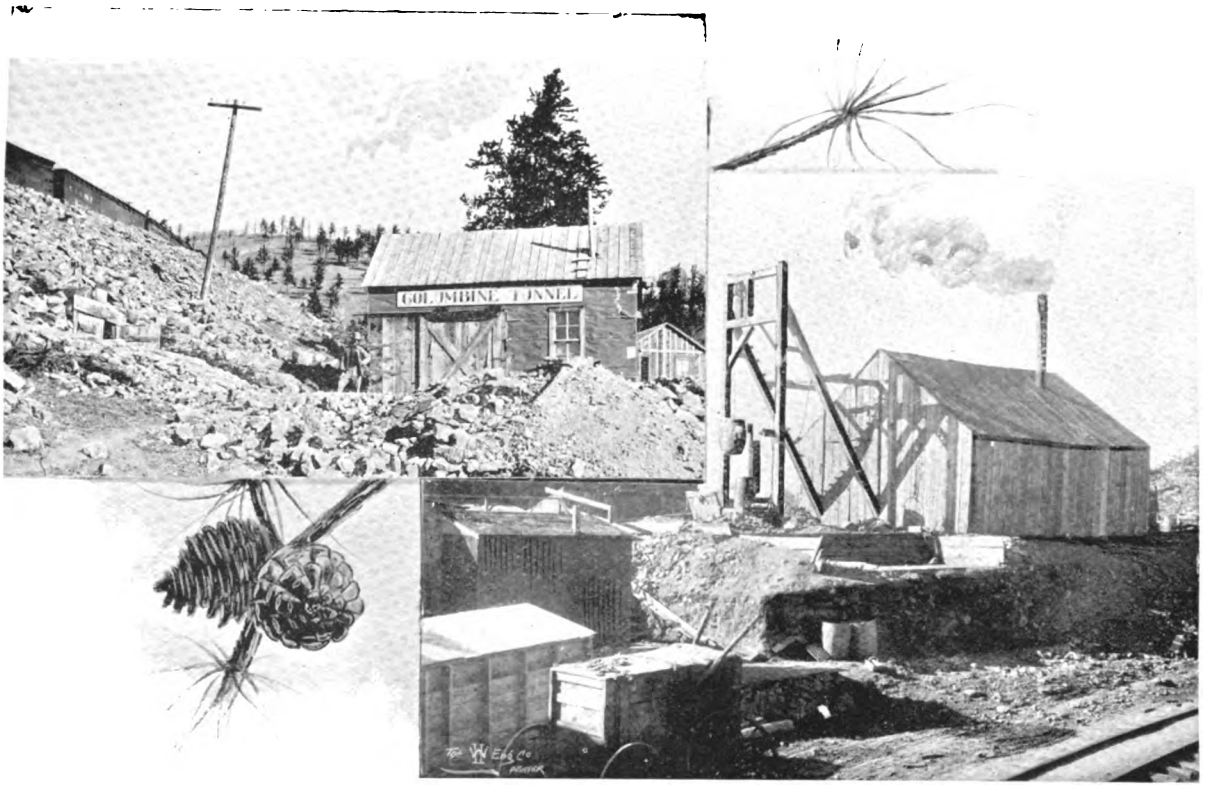


POVERTY GULCH. The Gold King and Rebecca Mines.

That Colorado is to take first place among the States of the Union, as a gold producer, is as good as determined. While credit for this achievement must be given to many camps and districts, the greatest portion will be due to Cripple Creek.

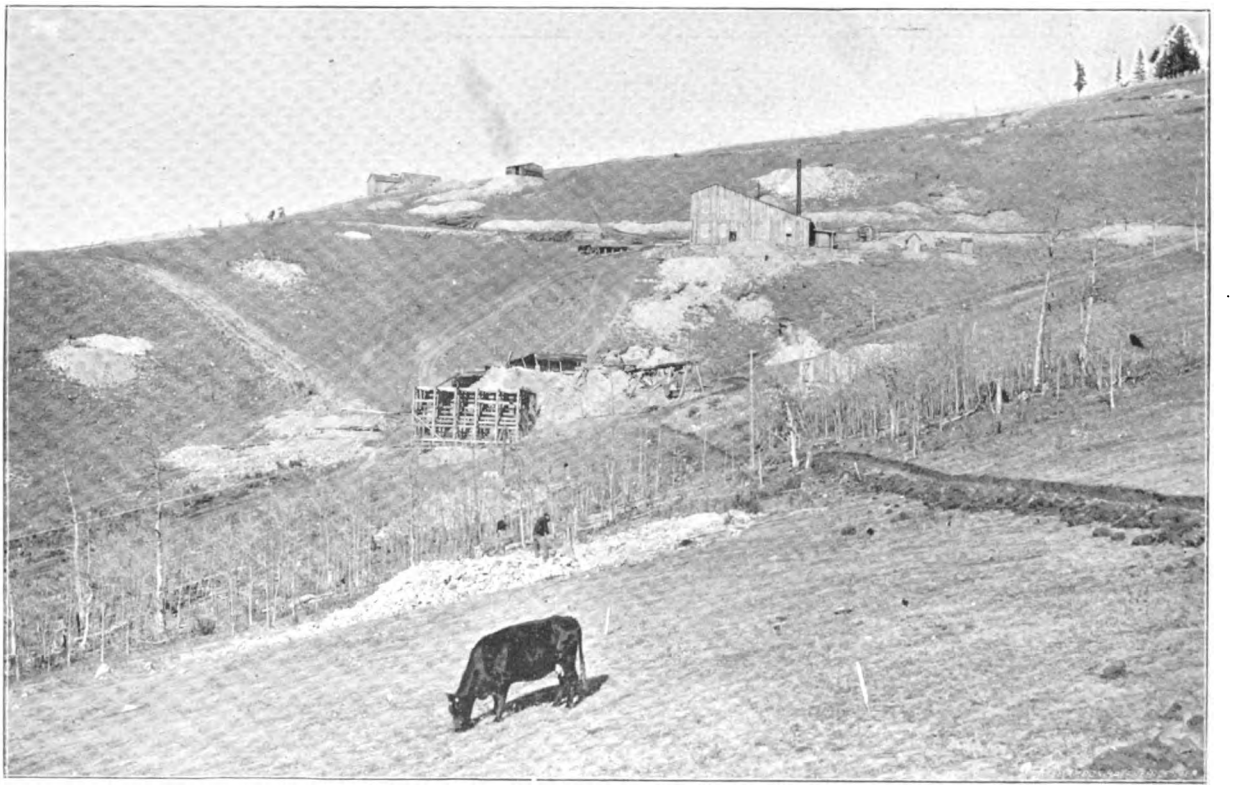


AREQUA GULCH. Squaw Mountain Tunnel.




VICTOR. Columbine. Gold Coin.

What has been done in the five years that span the existence of the Cripple Creek mining district? What of the result? Has it not been as wonderful as the time of its accomplishment has been brief? What of the Cripple Creek of to-day? Its past has been checkered with adversity, but there has been no step backward. The present year will round itself out with a product of nearly $9,000,000, swelling the total output for the four years to between $14,000,000 and $15,000,000. However splendid this showing,

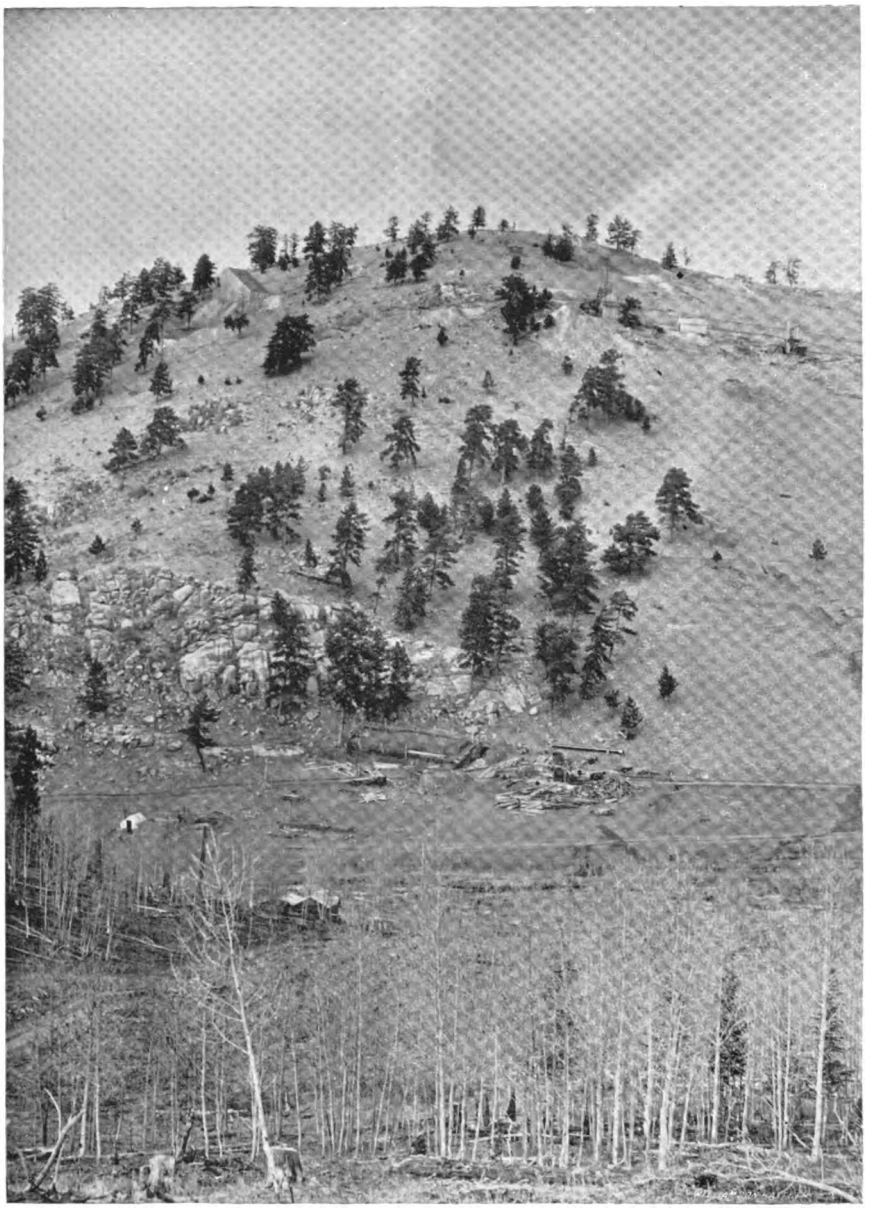


*North Star* *Doctor*
RAVEN HILL. SOUTHWEST SLOPE

its importance is but slight as compared with the ratio of increase from year to year.

The daily record of new discoveries, not only within the limits of the area from time to time accepted as gold-producing, but those which are constantly extending those limits; the almost as frequent announcement of prospects turned into producing mines, and the only less occasional heralding of producing mines becoming bonanzas, presage the ultimate and possible speedy fulfillment of the oft repeated prophecy placing the camp, at present ranking all other gold producers of this continent, side by side with the world-famous Johannesberg.

Cripple Creek has been from the beginning and will long continue to be a poor man's camp. At the same time, it is opening wide its gates to the investment of capital. The proximity of rich ore to the surface, and the ease with which the discovery is developed into a profit-paying property, serves the poor man. The now practically assured great depth to which the veins may be successfully worked, and the frequency of their occurrence, furnish opportunity for capital, whether brought from abroad or accumulated on the spot.



BEACON HILL. Beacon. Gold Dollar. Prince Albert. Gold Dollar Tunnel.

The camp is a producer of both high and low grade ores, which fact not only makes it of interest to smelter and reduction works owners beyond its borders, but creates the necessity for low grade process plants in the near vicinity. As a high grade camp, Cripple Creek is without a peer in the world to-day. With the practical achievement of ample and sufficiently economical methods of low grade treatment, it will, as a producer, threaten the laurels of South Africa. With its present railroads, and two more lines—air lines—of traffic communication projected, one from Colorado Springs and one from Denver; with its telephone and telegraph systems; with its increasing facilities for ore treatment both at home and abroad; with the constantly increasing demand for gold mining investment, and with the supply of opportunity promising to keep pace with the demand, the future of Cripple Creek expands beyond the farthermost horizon of its exultant praise-singer.

TEN MINUTES FOR LUNCH

In 1859 and '60, the legend of the prairie schooner westward bound, was "Pike's Peak or bust!" Returning later, laden with disappointment, their legend read, "Busted, by ——!" To-day, after the lapse of thirty-five years, the slumbering region on the western slope of the hoary old peak, now thoroughly aroused, proclaims as a refrain:

"Gold! Gold! Gold! Gold!
Bright and yellow, hard and cold!"

# Geological Features

FOR the first two years of the Cripple Creek era every would-be expert had a story of his own to account for the rock and vein formation of the camp. Rarely did two agree, and frequently some of these wise men reversed their own fiats as often as the moon changed her phases. The first account of the somewhat complicated geological structure of this region, to be accepted with a degree of confidence in its correctness, was the result of the field work of the United States Geological Survey, under the direction of Dr. Whitman Cross. He was assisted by Prof. R. A. F. Penrose, Jr., of the Chicago University, who had charge of the economic geology. The work in the field was done in the seasons of 1893-94. The Cripple Creek Special Map, here reproduced, was published in July, 1895.

So far as the writer knows, Prof. Penrose was the first scientist to hazard the prediction that the Cripple Creek veins would continue to considerable depths and maintain their values. Three years ago, when it was the

GLOBE HILL. From Iron Clad Hill. Deerhorn and Summit Mines.

fad for prominent mining men to assert that the death knell of the district was already being rung, he made a forecast to the contrary. It is agreeable to look back over these years and to compare prediction with fulfilment.

Dr. Cross's text, descriptive of the 1895 Special Map, is here given. To avoid repetitions Prof. Penrose's narrative on the economic geology is in part omitted, as the same ground is substantially covered in the papers which follow, by Mr. Francis T. Freeland and Mr. Charles J. Moore, read before the Colorado Scientific Society in July, 1895, at the special Cripple Creek meeting, and elsewhere in this work.

DEERHORN BOARDING HOUSE

## General Geology

WHITMAN CROSS

The central portion of the area mapped is a typical volcanic complex. It consists of predominant fragmental materials—tuff and breccia—with numerous dikes and irregular intrusive bodies of massive rocks. This part is naturally the most complicated and interesting

*Summit Tunnel* GLOBE HILL. SOUTH SLOPE *Badger Boy*

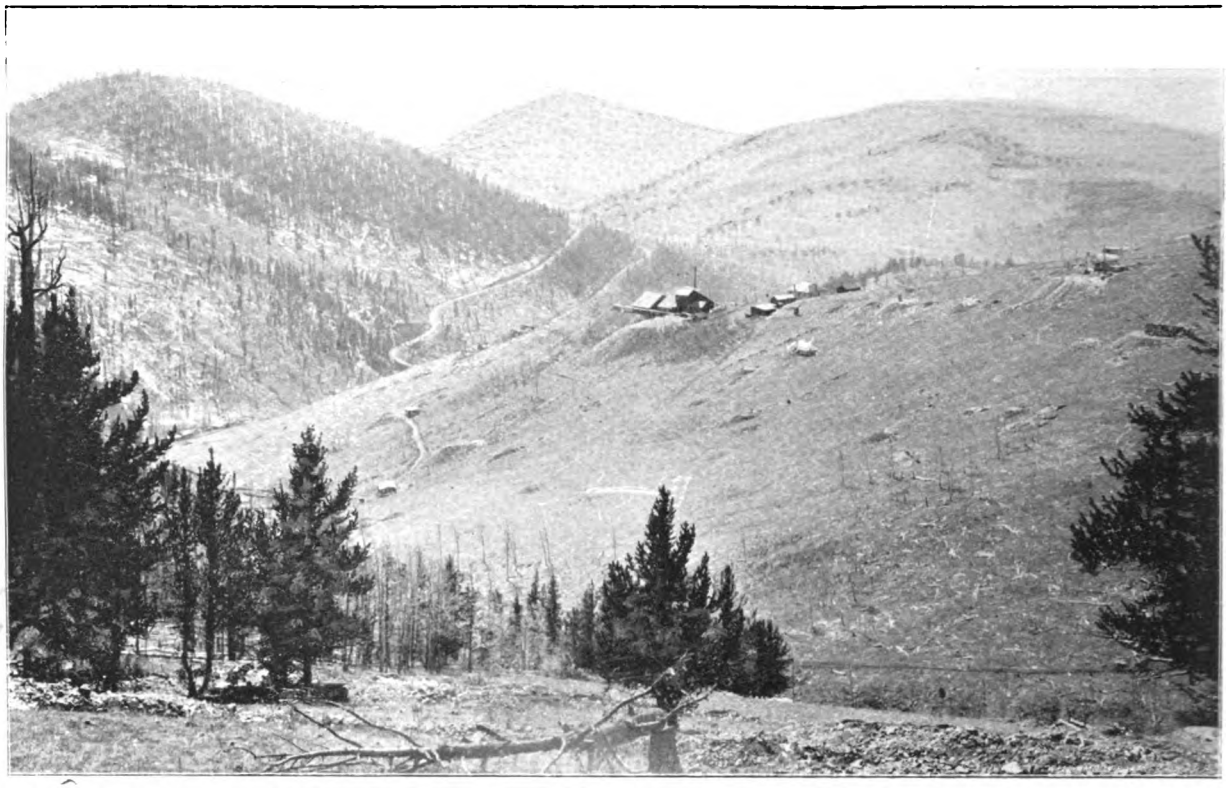
geologically, and it is also of the greatest economic importance, because the gold deposits are there most numerous. Surrounding this central area is granite, the principal rock, penetrated by dikes of certain of the volcanic rocks. Remnants of tuff and breccia also occur, and there are a few subordinate formations which are not directly connected in origin with the volcanic center. The High Park lake-beds and the associated rhyolite of Grouse Mountain are the principal of these formations.

The study of the district has led to the conclusion that there was once a true volcano at this center of eruption. It was probably small in comparison with the one west of it, but it exhibited a very complete cycle of phenomena characteristic of volcanic vents. Owing to the extreme decomposition suffered by many of the rocks under the action of gases and thermal waters, many features are at first difficult of recognition.

## ROCK FORMATIONS

GRANITE AND GNEISS—The coarse-grained granite of the Pike's Peak type prevails in the district, except to the west of Cripple Creek, where a finer-grained type occurs. Fine red granite dikes abound throughout the granite area, and coarse pegmatite dikes are occasionally found. Gneissic structure is locally developed in the granites, but neither this structural change nor the distribution of the granitic varieties could be shown on the map, owing to the limited time available for the investigation.

IRON CLAD HILL. Iron Clad and Plymouth Rock No. 1.



*Moose* *Bertha B.*

RAVEN HILL. NORTHEAST SLOPE

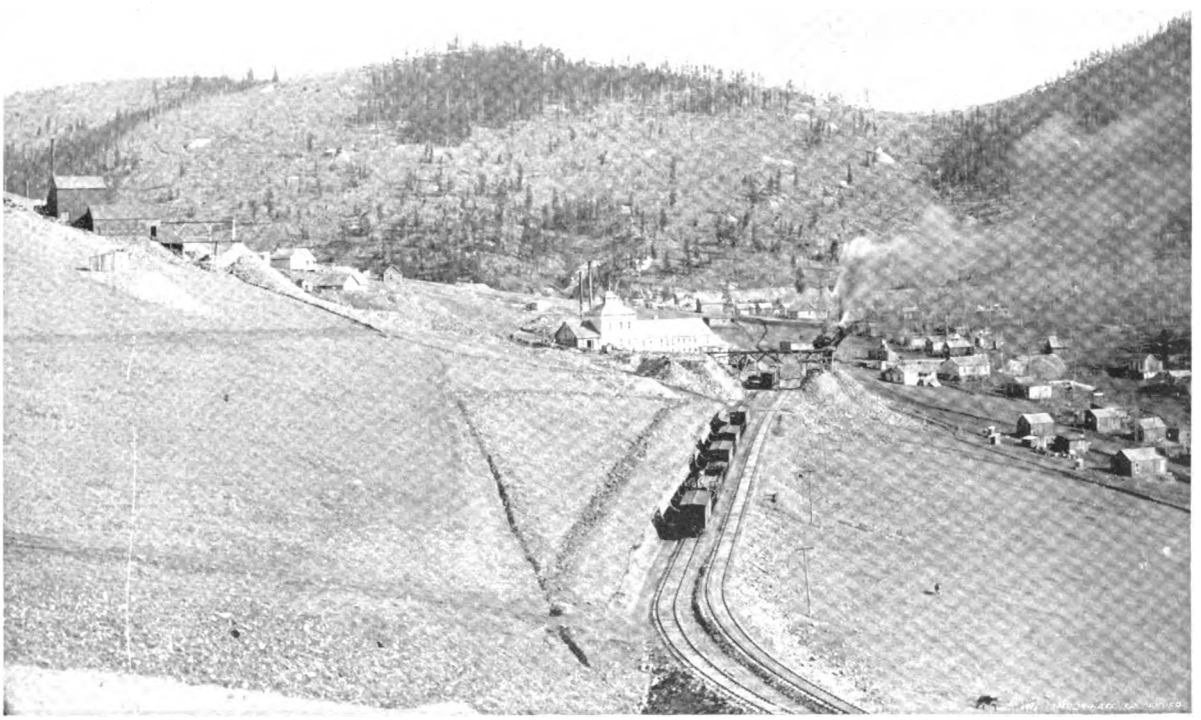
SCHIST—The numerous small areas designated schist are not so clearly metamorphosed Algonkian strata as are many in the adjoining district to the west, but they are plainly included masses in the granite, and hence to be considered older than that rock. Most of these schistose rocks are silvery muscovite-quartz-schists, with fibrolite in many cases. Some are doubtless altered gneisses, while others are metamorphosed Algonkian sedimentary rocks. Those near the volcanic area are much kaolinized. Small granite veins or dikes penetrate the schist.

RAVEN HILL. SOUTH SLOPE *Raven*

*Kentucky Belle*

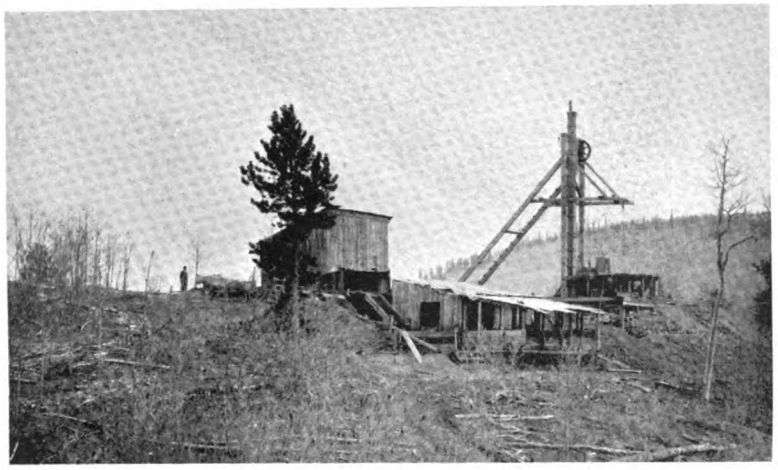
RAVEN HILL. NORTHEAST SLOPE

ANDESITE—The andesites represented upon the map, though not very different in character, are of two principal epochs of eruption. The more important type is an augite-hornblende-andesite with some mica. It is probably the earliest massive rock of the volcano, and the small areas of Battle and Big Bull Mountains are regarded as representing a large body which has been in great degree destroyed by explosive outbursts or covered by the tuff and breccia of the eruption. This andesite is characterized by its large prismatic crystals of apatite,



*Katherine* *Elkton*

RAVEN HILL. SOUTH SLOPE



SOUTH OF SQUAW MOUNTAIN. Home Run.

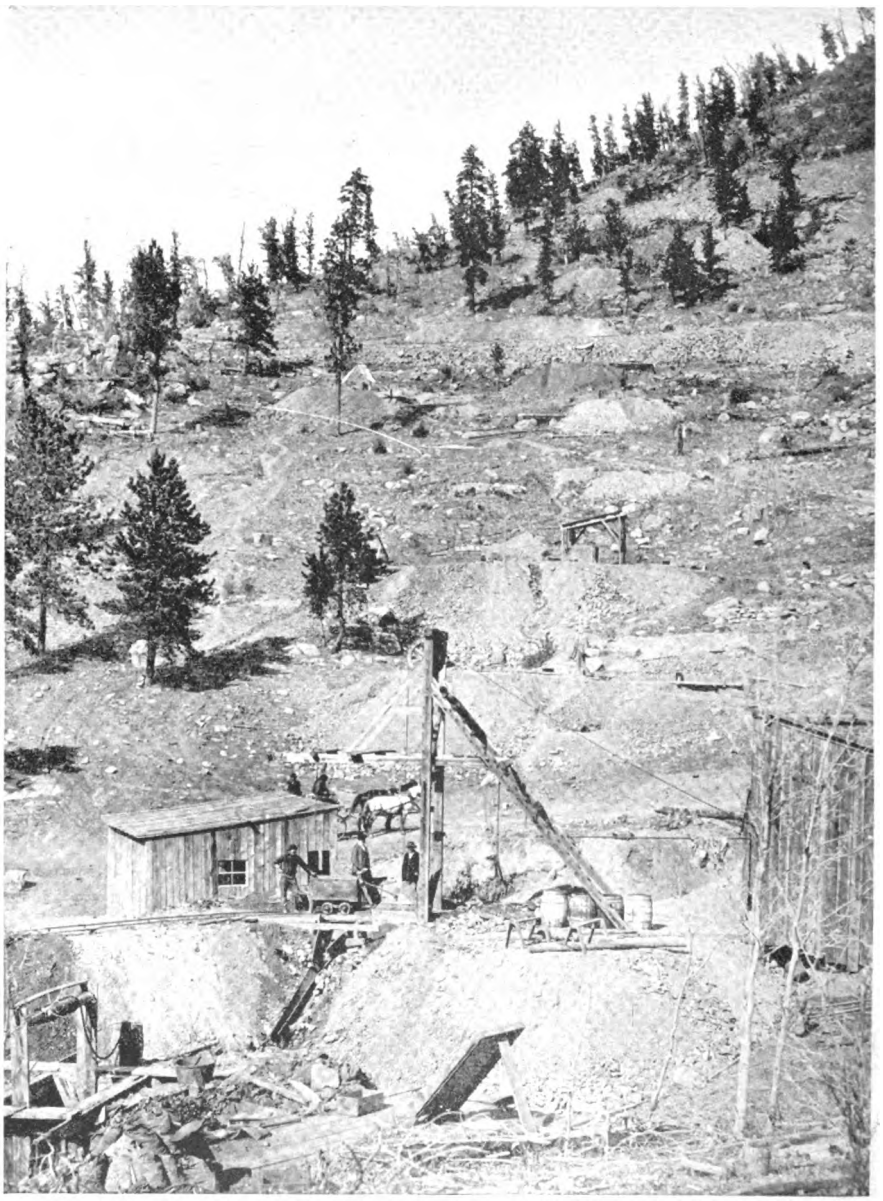
which are often larger than any other constituent of the rock. The second andesitic variety occurs in dikes cutting the breccia, especially in Anaconda Ridge and Poverty Gulch. The rock is an augite-andesite with some hornblende and mica, and has a denser ground mass than the earlier type. An andesite rich in mica occurs in dikes in Battle Mountain, but is not represented on the map.

PHONOLITE—The specially characteristic rock of the region is phonolite. It occurs in numerous narrow dikes, both within and without the main volcanic area, and is the only one of the volcanic types having such a distribution. It also occurs in several isolated bodies capping granite hills or mountains for some miles on all sides of the center, as in Trachyte, Big Bull, Cow, and Nipple Mountains. These masses are thought to be remnants of large inclined dikes in granite, similar to those shown upon the map in the territory just west of the volcanic center. This origin is further suggested by the phonolite bodies of Grouse and Straub Mountains, which are clearly lateral intrusions into the High Park lake-beds, near the granite surface. No surface flows of phonolite are now identifiable.

Phonolite was a product of several epochs of eruption, for a part of the breccia conlains phonolite fragments, and this breccia is cut by phonolite dikes. The dikes are also of several epochs.

The phonolite consists of alkali feldspars, nepheline, sodalite, nosean, and pyroxene which is in great part ægirine. Accessory minerals are sometimes present, the most notable ones being lovenite and a peculiar blue amphibole. The smaller dikes are dense, of greenish-gray color, and have a pronounced fissile or schistose structure, due to the arrangement of the predominant scales or microlites of feldspar parallel to the dike walls. A few glassy sanidine tablets give a more or less distinct porphyritic structnre to many masses. The phonolite of Grouse Mountain and of some smaller bodies is porphyritic through the unusual development of nepheline in numerous macroscopic, reddish crystals. Analcite occurs in drusy cavities in certain places.

TRACHYTIC PHONOLITE—The large mass of Bull Hill, and some smaller ones in or near Bull Cliff, belong to a rock closely allied to the ordinary phonolite but deserving to be distinguished from it by the smaller amount of nepheline it contains and by its structure. There are many stout feldspar crystals in this rock, and it is not laminated. In its prevalent decomposed condition it bears little resemblance to the normal phonolite, though the fresh rocks of

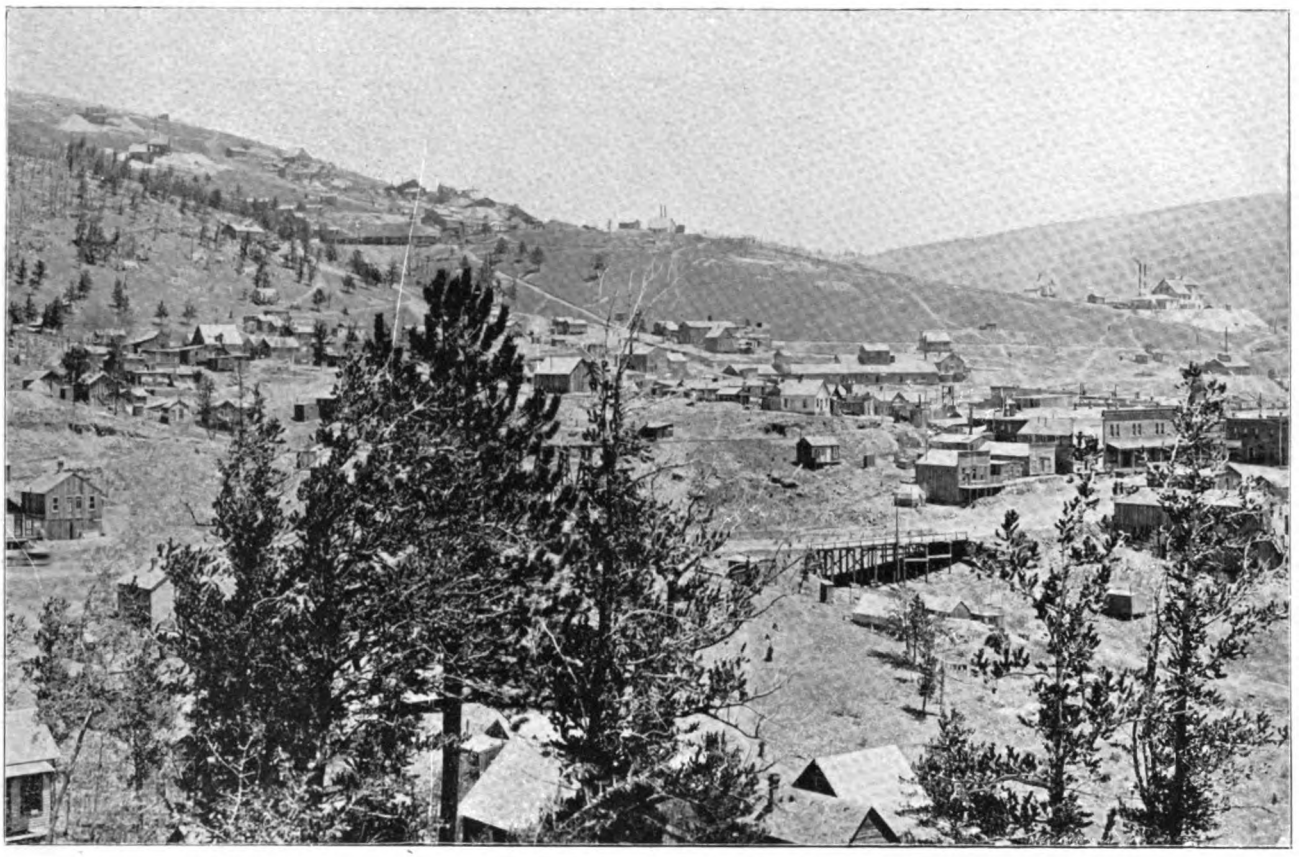


SQUAW MOUNTAIN. SOUTH SLOPE. Santa Rita, Climax No. 2.

the two types are nearly identical in chemical composition. Sodalite and nosean are as abundant as in the other type.

NEPHELINE-SYENITE—A single mass of this rock occurs at the south base of Bull Hill. It possesses nearly the same chemical and mineralogical composition as the phonolite, but has less nepheline, sodalite, and nosean, and a primary green hornblende is associated with the augite. The rock is pearl-gray in color, with a fine-grained granular structure, excepting on the periphery, where it becomes porphyritic. The presence of this granular equivalent of phonolite in the heart of the volcanic district suggests more definitely than anything else the site of the actual vent of the volcano.

SYENITE-PORPHYRY—On the southeast shoulder of Gold Hill is a mass of augitic syenite-porphyry, with many small feldspar and augite crystals in a very coarse-grained feldspathic groundmass. Little of the lime-soda or plagioclase feldspar series is present. Nepheline, sodalite, and nosean are wanting, but the strongly predominant alkali feldspars ally this rock with the phonolite series. Hornblende and mica are subordinate constituents.

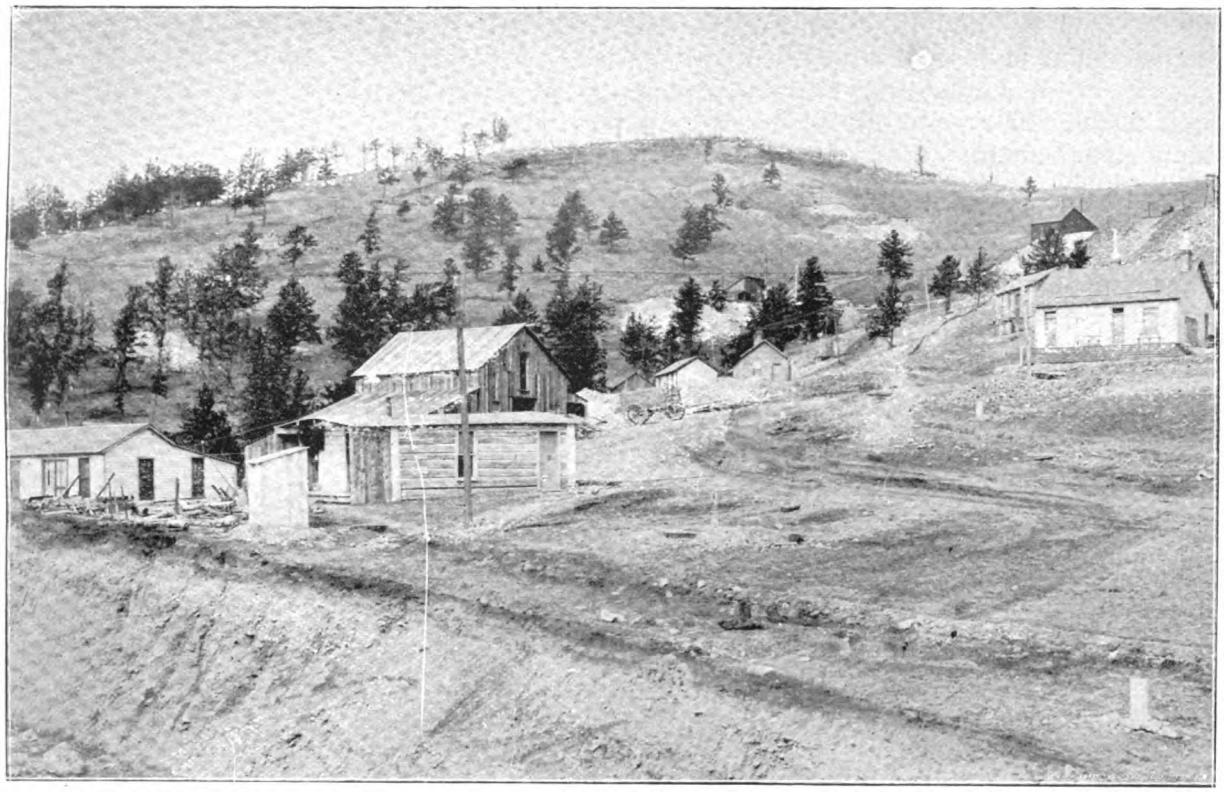


BATTLE MOUNTAIN. General View from West Side of Victor.

BASIC DIKE ROCKS—The last eruption of the district produced a number of narrow dikes of dark basic rocks. These are usually very much decomposed, but from the few fresh occurrences it is plain that there are two distinct rock types among these dikes, one a nepheline-basalt, the other a normal feldspar-basalt. The latter type is shown in fresh condition in the Wilson mine at Altman, and near the Dolly Varden mine in Squaw Gulch. The former occurs in numerous dikes in Battle Mountain and Raven Hill, being shown in nearly fresh condition in the Elkton-Raven dike, and in the Black Diamond mine on Battle Mountain. The Moose, Ben Harrison, and Anna Lee dikes are of nepheline-basalt, very much decomposed, and locally impregnated with ore. Many other short dikes of Bull and Raven Hills belong to one or the other of these basaltic types.

In their decomposed state these dike rocks are usually very soft, greenish in color, and often show a straw-yellow mixture of decomposition products in place of the augite prisms of the original basalt. Only a few of the best exposed nepheline-basalt dikes are represented upon the map.

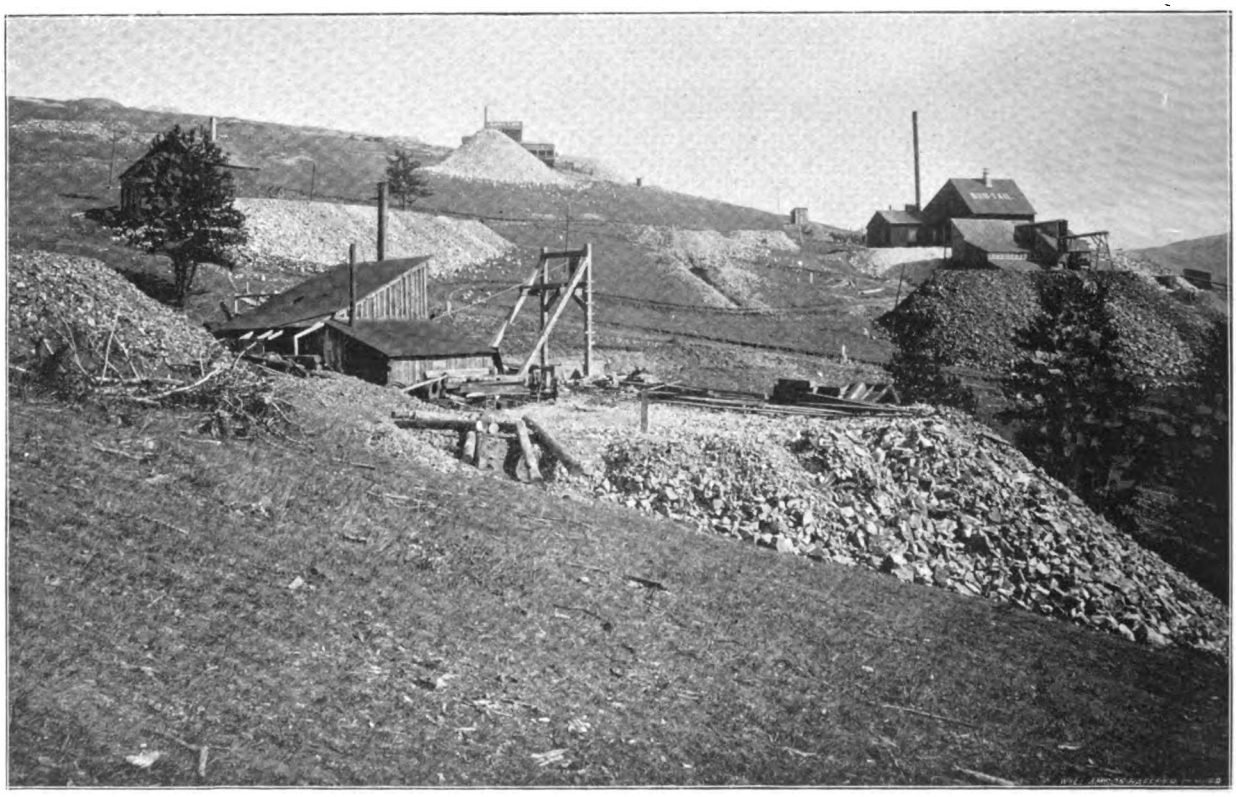
TUFF AND BRECCIA—The fragmental rocks of the central volcanic area, which are cut by all of the massive rocks described except the earliest andesite, consist of small fragments of andesite, phonolite, and granite. The predominant constituent is andesite, with phonolite locally abundant, and granite very subordinate



SQUAW MOUNTAIN. EAST SLOPE

often confined to microscopic grains. In texture these rocks vary from fine, even-grained tuffs, composed of sand or gravel particles, to a breccia made up of small angular fragments, few over one inch in diameter. Very large fragments do not occur. The most abundant modification contains a few comparatively large fragments in a gravelly matrix, a form which may be called tuff-breccia.

The greater part of the tuff and breccia is without distinct bedded structure, but occasionally a bedding is visible. Owing to the extensive decomposition to which the rocks of the central area have been subjected the



*Lowell* *Granite* *Anna Lee* *Bob Tail*

BATTLE MOUNTAIN. SOUTH SLOPE

A Bluff Prospect

bleached and indurated tuffs are in many places distinguishable from the massive rocks only by the closest scrutiny. Tuffs retaining in some degree their original dark colors and loose texture are found on the slopes of Bull Cliff, and Battle and Big Bull Mountains, especially near the isolated patches of massive andesite, and in these places the fragments of the breccia can be seen to be identical in character with the massive rock near by. Granite occurs in the tuff-breccia most abundantly near the boundary line. Phonolite is prominent in the breccia of Anaconda Ridge, Raven Hill, and in the space between Battle Mountain and Bull Cliff.

Rhyolite—In Grouse Mountain are isolated patches of a banded, pinkish or grayish rhyolite, associated with the High Park beds. This rhyolite contains crystals of sanidine, quartz, and biotite, in a dense groundmass which is sometimes microsphe-rulitic, though usually crypto-crystalline with more or less pronounced fluidal structure. The rock is like that represented on the Pike's Peak sheet as widely scattered over the adjoining country north and west of Grouse Mountain, and there is no reason to believe that this rhyolite was a product of the Cripple Creek volcano.

High Park Lake-Beds—In Grouse and Straub Mountains is a rudely bedded grit or coarse sandstone composed of granite gravel with some worn pebbles of granitic and schistose rocks and a smaller number of pebbles of hard, bluish quartzite, derived from the fragments of Algonkian quartzite included in granite, described

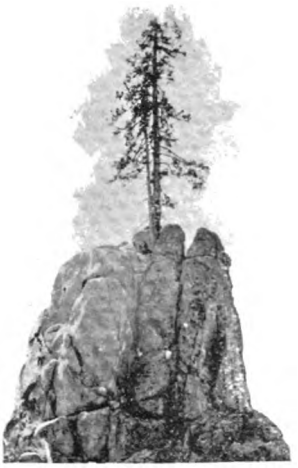
*Bob Tail* *Anna Lee* *Black Diamond* *Portland*

BATTLE MOUNTAIN. SOUTH SLOPE.

in the text of the Pike's Peak sheet. The grits are reddish in color, loosely consolidated, and resemble the Fountain formation (Carboniferous). On the ridge south of Grouse Mountain these grits locally rest upon rhyolite. This relationship is so similar to that between the rhyolite and lake-beds of High Park, a few miles west of Grouse Mountain, that the grits of Straub and Grouse Mountains have been referred to that lake-bed formation. Their thickness in Straub Mountain is 200 feet or more, though the unevenness of the granite floor makes an estimate difficult.

The phonolite mass of Grouse Mountain was laterally intruded into the grits at a time when they must have had a much greater thickness than at present. The plane of intrusion was very irregular, as shown by the map, cutting in places down to the granite, and there lifting rhyolite and grit, while in other places one or both


VICTOR'S FESTIVAL OFFERING. The Portland Mining Co.'s Coach.



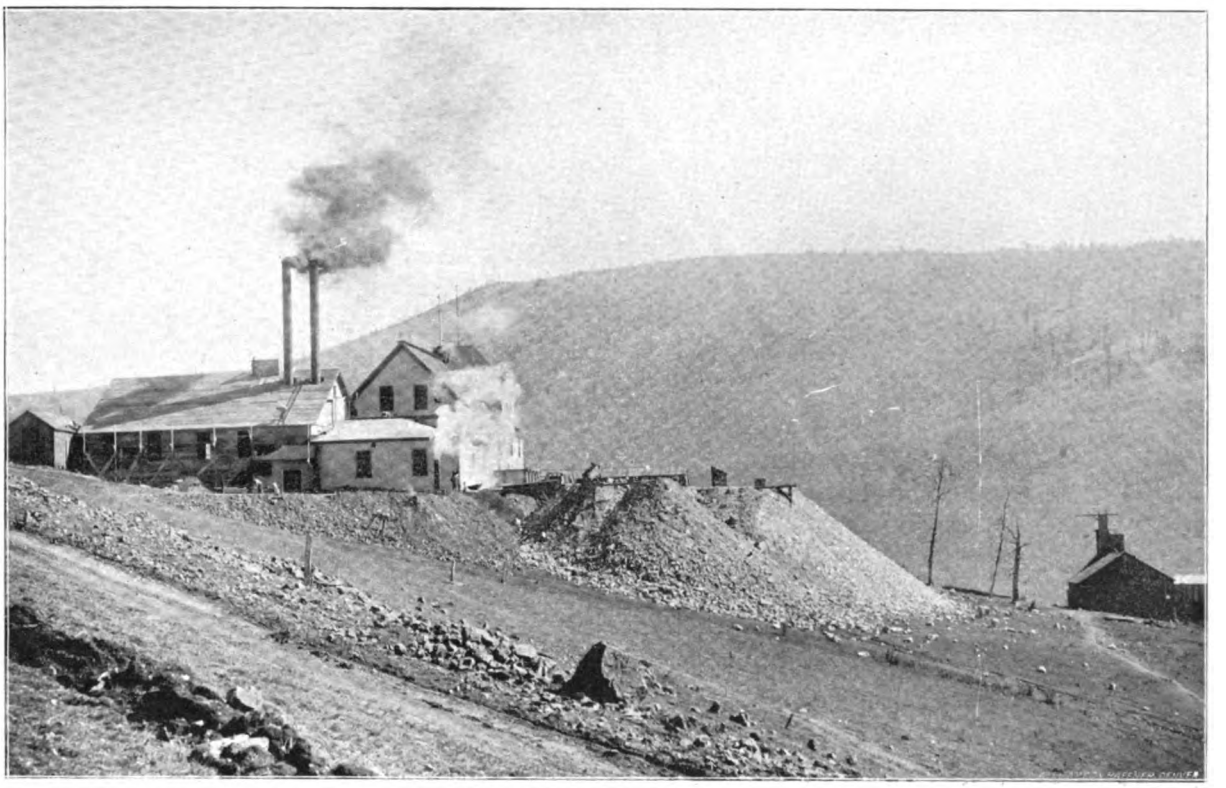
THE LONE SENTINEL. F. & C. C. R. R.

of these formations were left between granite and phonolite. The phonolite of Straub Mountain is likewise an intrusion into the grits.

## DESCRIPTION OF THE VOLCANIC CENTER

RELATION OF TUFF-BRECCIA TO GRANITE—The tuffs and breccias of the northern and eastern portions of the central volcanic area rest upon a surface of granite whose topography must be quite as irregular as the surface of to-day. This is shown by the course of the boundary line of the volcanics, and by the islands of granite and schist which project through the tuff and breccia. The isolated areas of tuff in Mineral Hill and Rhyolite Mountain also illustrate this relation.

From near Anaconda to Victor the contact plane is so steep in several places as to suggest that actual vents of the volcano are directly adjacent, and other evidence points to the same conclusion. The granite near these steep contact planes, especially



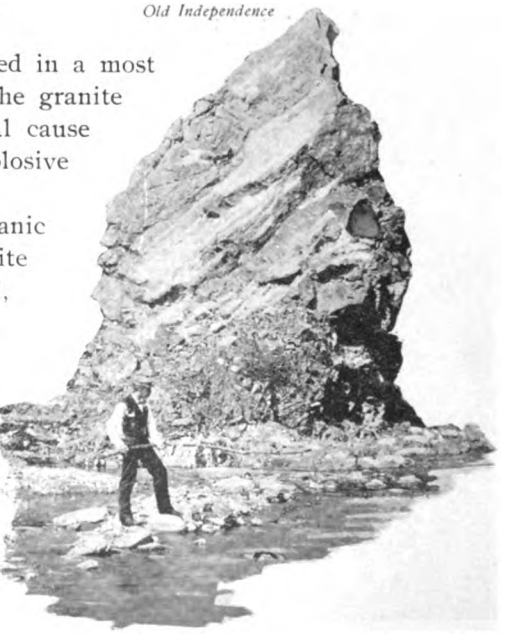
BATTLE MOUNTAIN. The Independence Mine.

at Anaconda and on the ridge south of Arequa Gulch, is very much shattered in a most irregular manner, as well as traversed by the usual fissure systems. The granite island of Iron Clad and Bull Hills is also very much broken up. A natural cause for this condition is to be found in the earthquake shocks attending the explosive eruptions of the volcano.

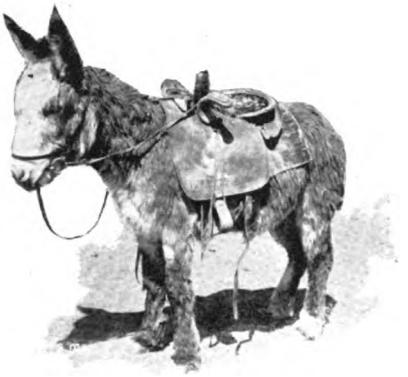
BRECCIATION OF ROCK IN PLACE—Many small bodies of massive volcanic rock in the central area correspond in their shattered condition to the granite of the contact zone. This is illustrated in Battle Mountain, Raven Hill, and Bull Hill. Many dikes are so broken up that the mass is really a breccia although the dislocation may have been slight. The shock which shattered the massive rock doubtless affected also the loose fragmental materials and destroyed much of the bedded structure which may have existed in the tuff and breccia of the central area.

RELATIONSHIP OF THE MASSIVE ROCKS—The andesite of Battle and Big Bull Mountains is certainly older than the tuffs which surround or overlie the patches now seen, for those tuffs are clearly made up largely

*Old Independence*



LIBERTY CAP ROCK. F. & C. C. R. R.

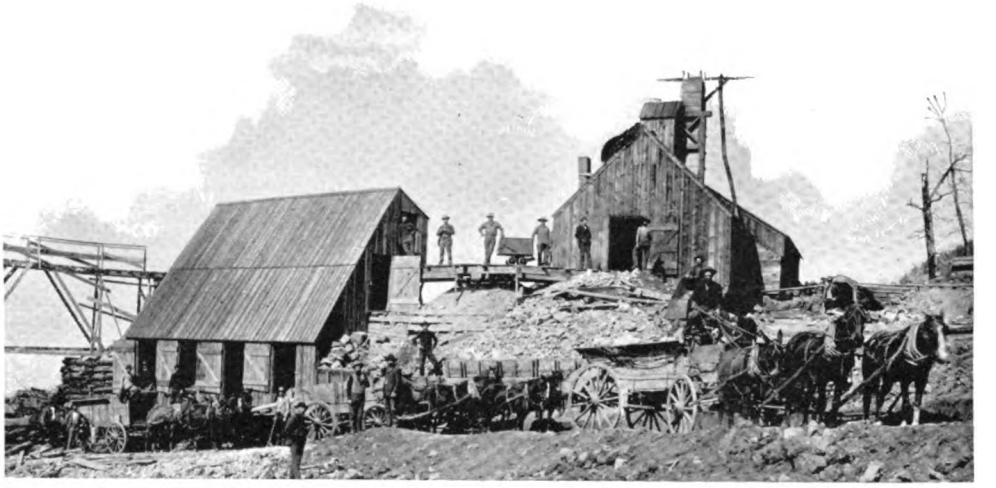


RAGS, THE OLDEST OLD TIMER

of that same andesitic type. The other massive rocks cut the fragmentals as dikes or rocks, but are not shown in sufficiently numerous masses to determine with certainty the sequence in all cases. Phonolite appears to have been the only rock erupted in several periods.

The nepheline-syenite body sends off arms which cut one of the masses of trachytic phonolite above the Legal Tender mine. But all the rocks except the andesite and basalt are closely allied, being very rich in alkalies and poor in lime and magnesia, and constitute one group characterizing the middle period of the volcano. The nepheline-syenite occurrence is of much importance as indicating that at the time of its intrusion the volcanic mountain was large enough to secure for this magma conditions of cooling suitable for the production of the granular structure. It is also probable that the mass lies within, or in close proximity to, the central conduit of the volcano.

ROCK DECOMPOSITION.—The rocks of almost the entire mass of the central volcanic area and of a large area adjoining on the northwest are very much decomposed. The prevalent form of this decomposition is a bleaching by removal of iron bearing minerals, and a kaolinization or muscovitization of the feldspathic constituents.



BATTLE MOUNTAIN. Old Independence.

It is reasonable to assume that both gaseous and aqueous agents were active in producing this decomposition, inasmuch as the phonolite, the principal rock of the volcano, contains fluorine, chlorine, and sulphuric acid, and it is scarcely conceivable that the eruptions of phonolitic magmas containing these elements were not followed by intervals of fumarole and solfataric action. The porous zones in granite adjoining the phonolitic dikes, due to removal of quartz and mica, testify to the action of agents connected with the phonolite magmas.

AGE OF THE VOLCANO—An indirect chain of evidence indicates that the Cripple Creek volcano is of Miocene age. The late Eocene (Oligocene) lake-beds of Florissant are overlain by rhyolite seemingly identical with many other remnants, including those of High Park and Grouse Mountain. As stated above, the phonolite of the latter locality is later than the rhyolite, and, by inference, the volcano is, in part at least, younger than the Eocene, though there are no means of estimating the duration of the volcanic activity.

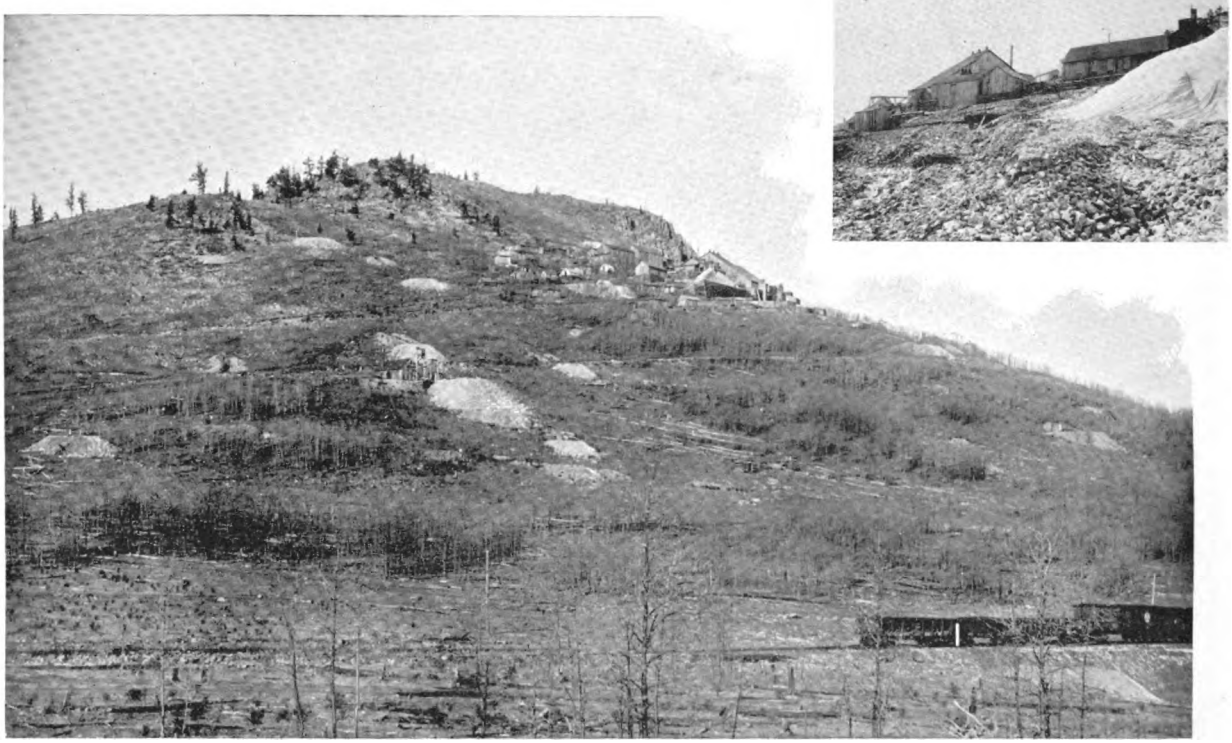
CRIPPLE CREEK. Stock Exchange. First National Bank.

# Economic Geology

R. A. F. PENROSE, JR.

ORES—The ores of the Cripple Creek district are almost exclusively gold ores. A little silver generally occurs in most of them, and in a few cases it is in sufficient quantities to be of importance, but usually it is insignificant. No other metals occur in any of the ores in quantities of commercial value. The ore consists usually of country rock more or less impregnated and replaced by quartz and other minerals, among which the most abundant are fluorite, opaline silica and kaolin with iron pyrites and other iron minerals, manganese oxides, and more rarely small quantities of galena, cerussite, anglesite, malachite, acanthite, tetrahedrite, stibnite, sphalerite, calaverite, native gold, oxidized tellurium minerals, gypsum, calcite and numerous other minerals in still smaller quantities. The stibnite, the sphalerite and the copper minerals, including tetrahedrite, are very rare.

The ores often, though not always, consist simply of country rock, either eruptive materials or granite, containing more or less secondary quartz and associated minerals; instead of, as in many gold districts, and in fact as in part of the Cripple Creek district, consisting of well defined bodies of these materials. A characteristic ore of this district is an intimately mixed mass of quartz and fluorite, prominent in its brilliant purple color.



BULL HILL. NORTH SLOPE

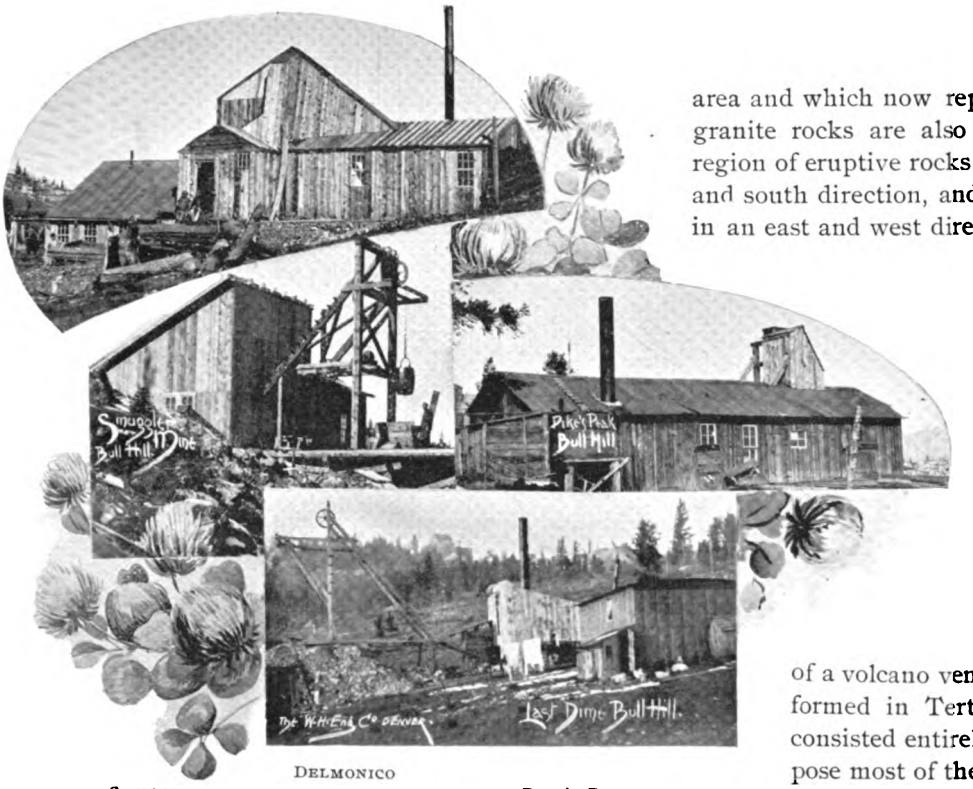
THE VICTOR MINE

GOLD—The gold occurs in the ore as native or free gold, as telluride of gold and possibly as auriferous iron pyrites, the last being the least important form. The native gold is shown by its usually superficial mode of occurrence and its physical condition to be largely derived from the telluride by oxidation, though it is not impossible that some of it may have been derived from auriferous iron pyrites or may have been in the free state since it was deposited. Most of the gold at a depth is in the form of the telluride which has been determined by Dr. Hillebrand to be calaverite, though other tellurides may occur. Iron pyrites is abundant, but rarely, if ever, so far as known, carries any considerable amount of gold.

A GRASSY RESORT

## GEOLOGICAL RELATIONS OF THE GOLD DEPOSITS

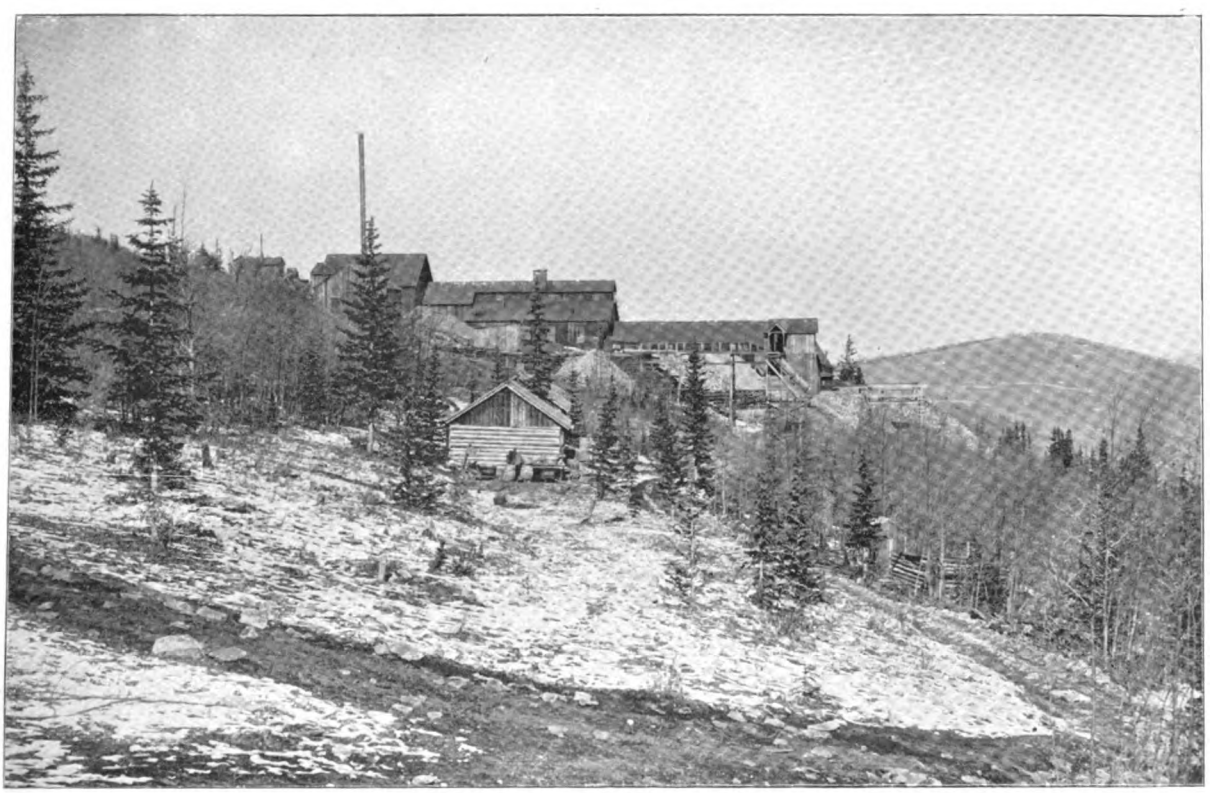
The district is essentially an elevated area of Tertiary volcanic breccia cut by numerous massive eruptive rocks in the form of irregular bodies and dikes, and surrounded on all sides by granite. Besides the intrusive bodies of eruptive rocks, the breccia area also contains massive eruptive rocks which were formed before the breccia



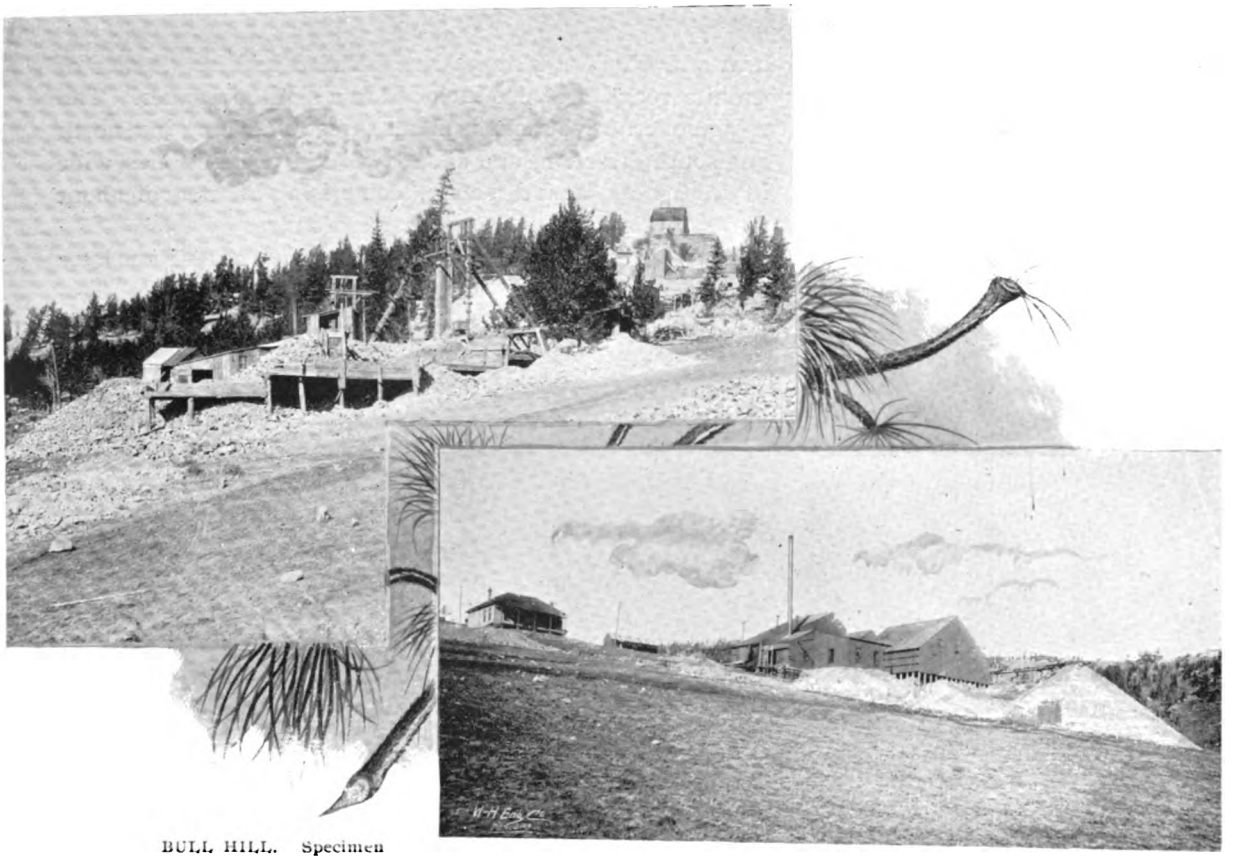

SMUGGLER DELMONICO PIKE'S PEAK LAST DIME BULL HILL

area and which now represent included bodies. Bodies of granite rocks are also included in a similar manner. The region of eruptive rocks is about three miles long in a north and south direction, and about two and a half miles wide in an east and west direction, comprising an area of about seven square miles.

VOLCANIC ACTION—From later Cretaceous, well down into Tertiary times, eruptive outbreaks were active throughout this region, and the vast thickness of lavas, breccias, tuffs and eruptive materials of other kinds found in the Rocky Mountains from Canada to Mexico were poured out largely during this period. The area now occupied by the mining district of Cripple Creek is in part on the site of a volcano vent, or possibly of more than one vent, formed in Tertiary times. The region originally consisted entirely of granite rocks, such as now compose most of the Pike's Peak range; but during the period of volcanic activity a vent or series of vents formed and was the scene of several explosive eruptions which ejected large quantities of eruptive rocks in a fragmental condition, thus forming the volcanic breccia which now comprises the larger part of the district, and which includes bodies of the original eruptive rocks from which it was formed. Much of this breccia was thrown over the immediately surrounding granite, and at the end of the time of eruption the vent or neck itself was filled, choked up as it were, with the same breccia, so that the present area of volcanic materials is underlaid partly by granite and partly by the filled up vent. After and probably during the outbreak of breccia, eruptive masses of andesite, phonolite, and other rocks were intruded into the breccia area, in the form of



BULL HILL. NORTH SLOPE. The Isabella

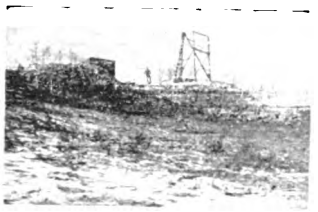


BULL HILL. Specimen

RAVEN HILL. Moose

large, irregular bodies and of dikes. Some of these rocks overflowed a little on the surface, covering limited areas, but some of them as seen now show no overflow, though such may have existed once, and may have since been eroded. The bodies of massive eruptive rocks are not confined to the breccia area alone, but also occur in the surrounding granite area, as seen on Mt. Pisgah, Beacon Hill, Grouse Mountain, Little Pisgah Mountain,

*Eagles* BULL HILL *Orpha May*

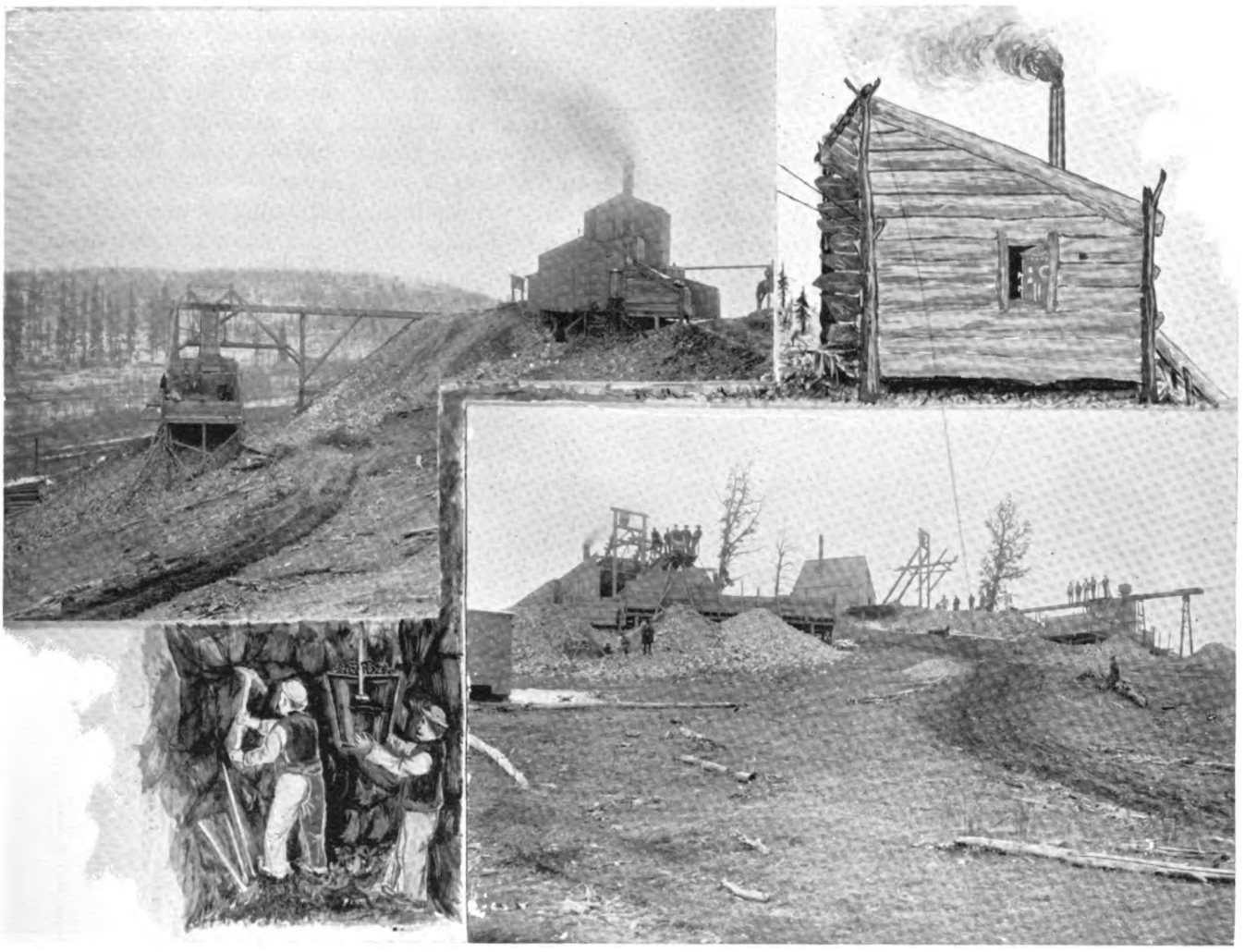


MAID OF ERIN

and elsewhere; while the whole of the immediately surrounding granite area is much cut up by dikes in the same manner as the breccia.

## MODE OF OCCURRENCE OF THE ORES.

GENERAL FEATURES OF THE GOLD DEPOSITS—The gold of the Cripple Creek district occurs both in vein deposits and in placer deposits derived from the decay and erosion of the veins and country rock. Though the placers have produced considerable quantities of gold, the veins are by far more important and supply most of the gold of the district. They occur in fissures in the country rock, which usually represent slight faulting, while more rarely they occur in other positions. The veins intersect all rocks in their course and have been mostly formed by a replacement along the fissures and except to only a very small extent, not by the filling of open gaps.



BULL HILL. SOUTH. The Last Dollars

## THE FISSURES

GENERAL FEATURES—The existence of numerous dikes in the region necessarily indicates the existence of pre-existing fissures, so that a fissuring action undoubtedly began at least sometime before the appearance of dikes; in fact it is natural to suppose that such an action occurred during the whole of the eruptive epoch of the district. In some places the veins may occupy these early fissures, but in a general way the vein fissures do not seem to have been the earliest ones formed, though many of them were produced before the dike action ceased. In the majority of cases which have been examined, however, the fissures occupied by veins were formed after the intrusion of the dikes, as is shown by the fact that they often

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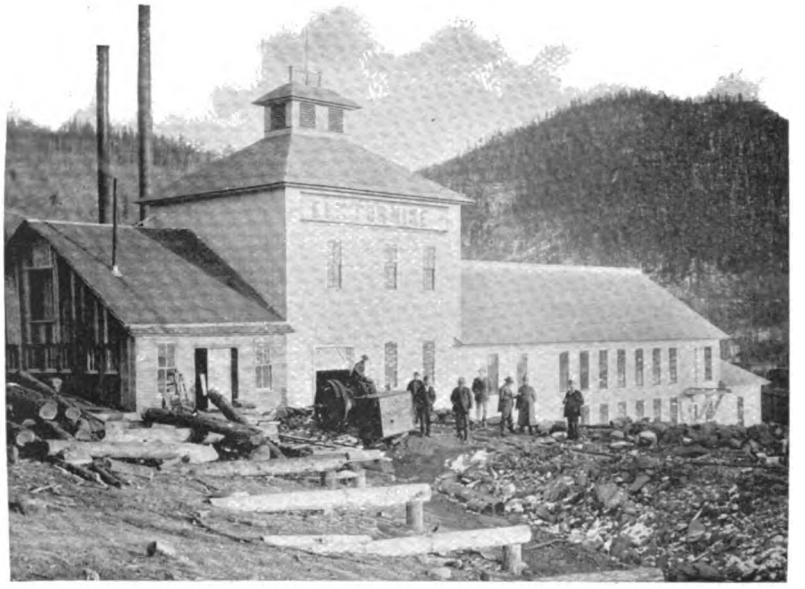
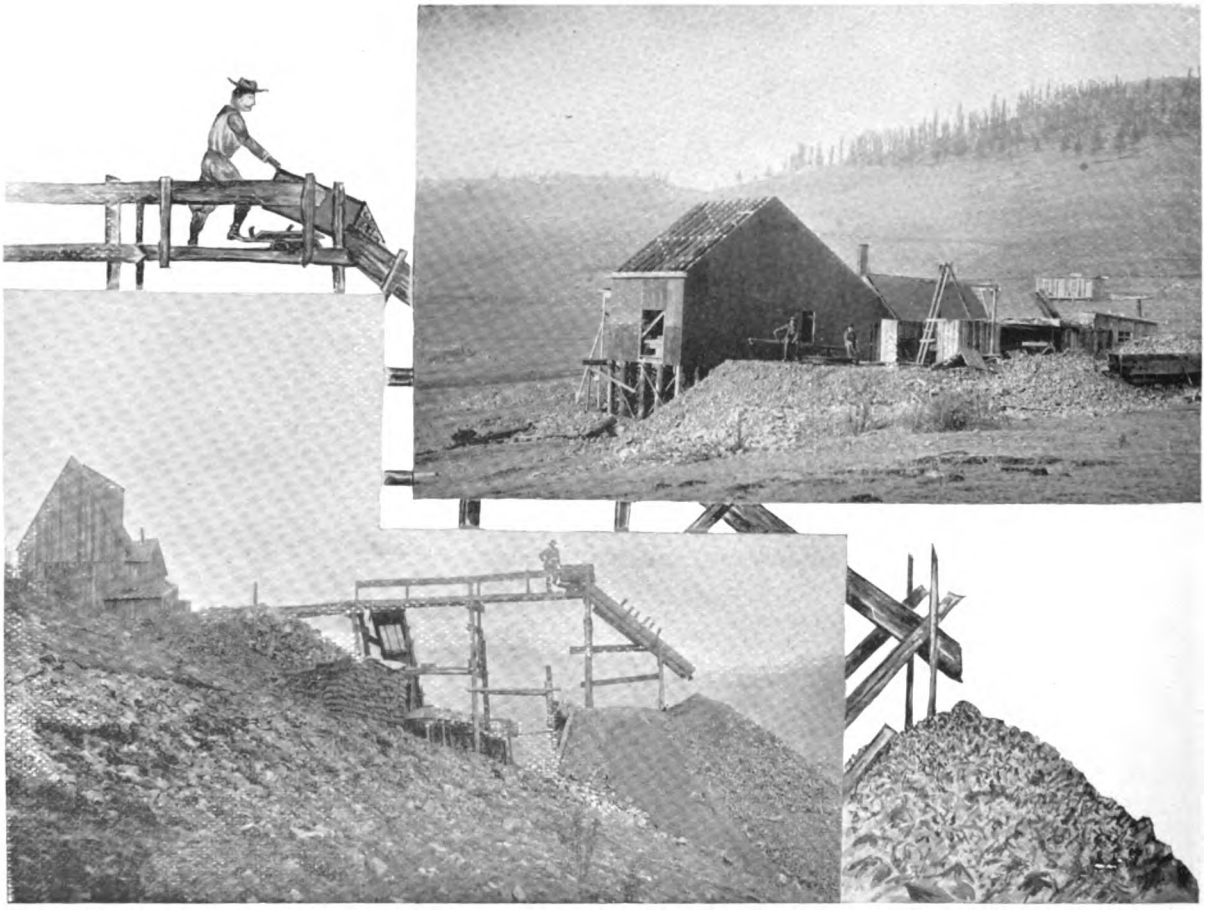


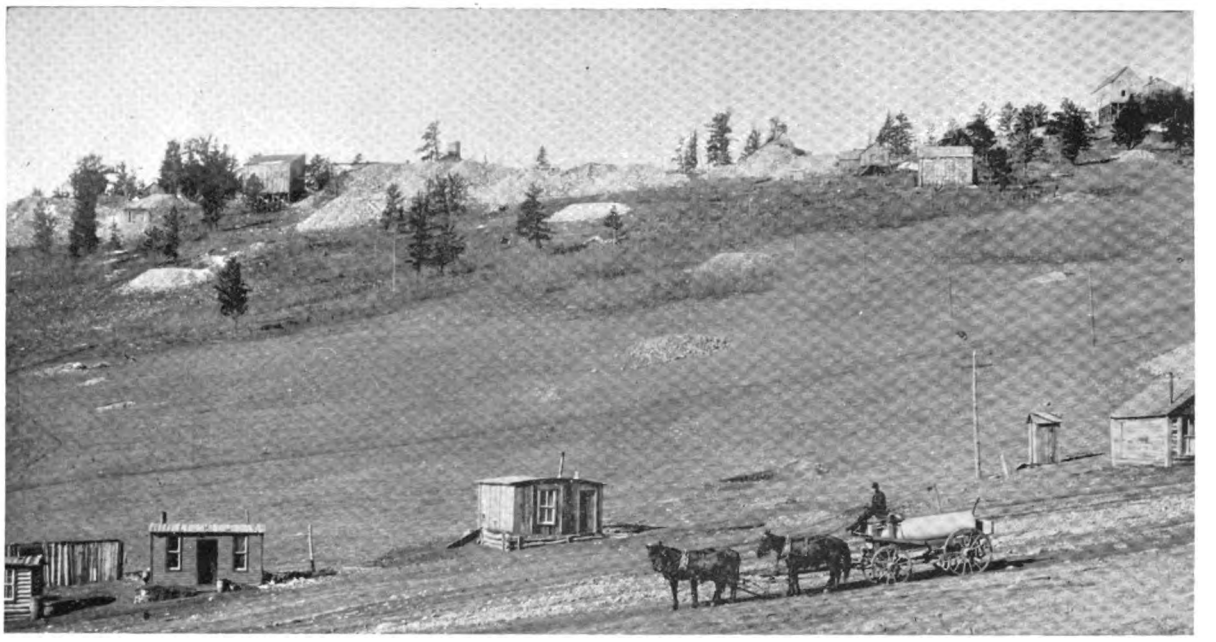
THE ELKTON SHAFT HOUSE

intersect the latter. The fissuring action affected both the volcanic area and the surrounding granite, so that the whole region is much broken by numerous fissures intersecting each other at various angles. In any single locality one general course is usually more prominent than the other courses, though intersecting fissures of less prominence are always present; and in some places there are two or more systems of parallel fissuring. The general course of the fissures carrying the veins of the district, like that of the dikes, varies from northeast to northwest, and in many cases it is only very little removed from due north and south. Some of the fissures occasionally strike nearer east and west, but in most of the important veins, with a few prominent exceptions, the more northerly trend is distinctly characteristic. The fissures are usually represented by one main fracture with numerous subordinate parallel or approximately parallel fractures, though sometimes two or more main fractures occur close together; and frequently there is no one especially well defined break, but a number of closely parallel fissures of about equal magnitude, giving the rock a minutely banded or sheeted structure, and forming a fissured zone.

THE FISSURES AS FAULT PLANES—The fissures are generally the result of movement which probably was generally accompanied by a certain amount of faulting, as is proved by the occasional occurrence of fragments of rock in the better defined fissures and the abundance of grooves or slickensides on the faces of the fissures. The amount of faulting is difficult to determine, as the country rock rarely offers any points by which the amount of throw can be estimated. Where dikes or fissures have been faulted, however, more definite data as to



THERESA BULL HILL. EAST VINDICATOR



*Orpha May* *Pike's Peak* *Garfield-Grouse* *Mineral Rock*
BULL HILL. EAST SLOPE

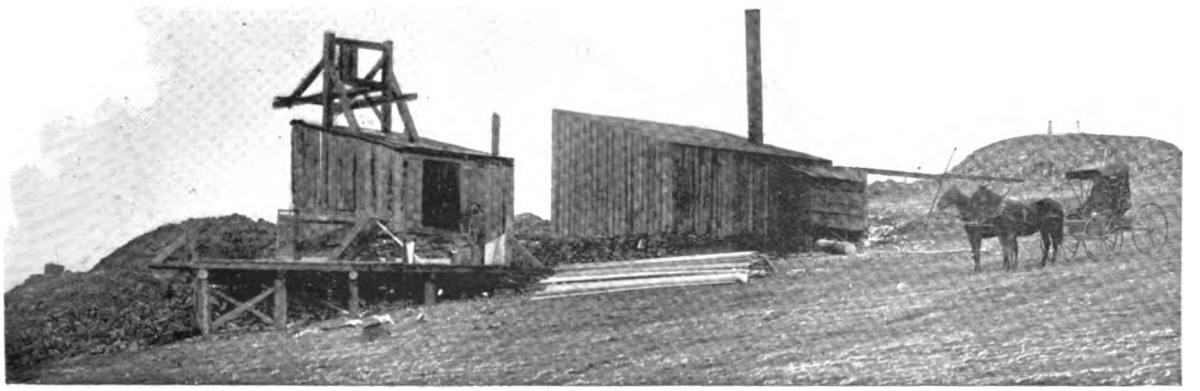
the amount of movement is often available, and the evidence so far obtained from this source goes to show that the faults have throws varying from a fraction of an inch to several feet and possibly sometimes much more. Outside of the immediate Cripple Creek district, however, faults of much greater magnitude, sometimes with a displacement of over 1,000 feet, are described by Dr. Cross.

It has been suggested by some that faulting was the cause of the granitic breccia occurring between the granite rim and the central area of the volcanic breccia. This material forms a belt from a few feet to several hundred feet in width, and is seen at many places where the contact zone of the granite and volcanic breccia is visible; but its character and mode of occurrence makes it evident that it is due to volcanic action and not to faulting, though the material itself is more or less broken by later faults.

EFFECT OF THE COUNTRY ROCK ON THE CHARACTER OF THE FISSURES — The character of the fissures of the district is much affected by the nature of the rocks they intersect. In the massive, hard or brittle rocks, like the granite and some of the massive eruptives, or like some of the hard breccias, the fissures are much sharper and better defined than in the softer and more plastic rocks like the soft breccia, especially that which has been much altered and is tufaceous. Among even the massive rocks the distinctiveness of the fissure varies considerably.

## THE VEINS

GENERAL FEATURES—What has been said of the general mode of occurrence of the fissure holds true of the veins, which are simply bodies of secondary minerals filling the fissures. Sometimes the veins represent



L HILL. Los Angeles

single well defined bodies of ore and sometimes they occur in a number of thin, parrallel seams filling the fissured zones already described. They occur in all the rocks of the district, breccia, massive eruptive rocks and granite. The general character and mode of occurrence of the ore makes it evident that the veins are largely, at least, a replacement of the country rock along very narrow fissures which were hardly more than cracks, though occasionally the ore appears to have locally filled open places among them. In different localities every gradation can be seen from country rock slightly impregnated with ore along a fissure, to country rock completely replaced and converted to a well defined vein.

GOLD HILL. NORTHWEST SLOPE. Anchoria Lelands

RELATION OF VEINS TO DIKES—It is a notable feature throughout the district that veins often follow dikes, either throughout their course or, more commonly, for short distances, and that when a vein meets a dike, though it may cross it directly, it is very likely to be deflected and to follow the dike for greater or less distances. This association of veins and dikes is one of the most prominent features of certain parts of the district, and is attributable mostly to the effect of the dike on the vein fissures and to a less degree to their effect on subsequent ore deposition. Ore deposition was a sequel of the dike action, and as it depended on heated rocks for much of its effect it would be more likely to occur in the region of the latest eruptive rocks, which were the dikes, than elsewhere. The dikes may also have cut water channels existing in the country rock before their intrusion, anp the waters from such channels, thus forced upon the sides of the dikes, might have caused ore deposition. Moreover, the shrinkage cracks formed in the dikes at their contacts with the country rock may in some cases have offered favorable places for ore deposition. These causes have doubtless had in some cases more or less effect in producing a connection between dikes and veins; but in the vast majority of cases where the veins follow dikes the association is clearly due to the purely mechanical effect of the dikes in directing the courses of the later fissures in which many of the veins were afterwards deposited.

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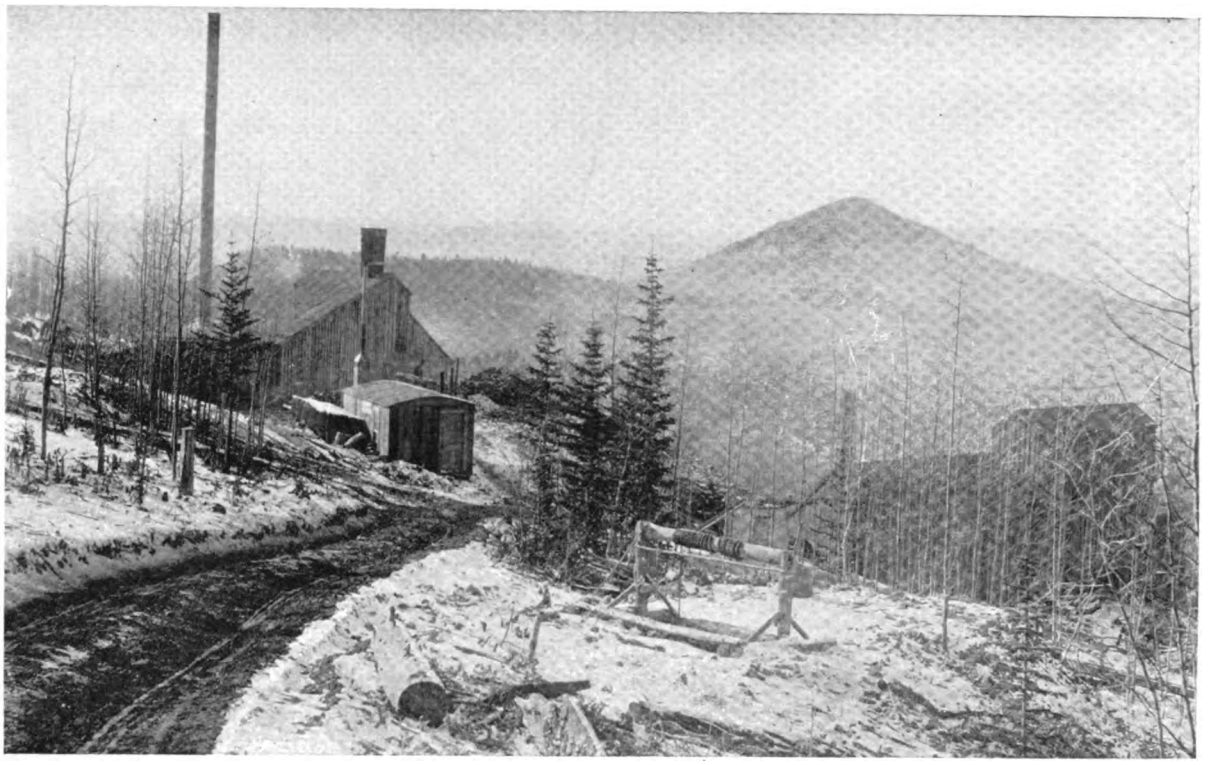
PALACE DRUG STORE, CRIPPLE CREEK

CHANGES IN VEINS AND DIKES AT A DEPTH—It is often noticeable that both the veins and dikes dip at different angles near the surface than at a depth; while veins that occur in one well defined fissure at a depth sometimes fork near the surface and appear in two or more separate outcrops. Both phenomena can be attributed to the fact that the district geologically is comparatively young, and though erosion has caused many changes in topography, yet it has not yet completely obliterated the original character of the upper parts of the formations. The fissures occupied by the dikes or veins were confined to the original line of breakage at a depth on account of the superincumbent pressure, while nearer the surface this pressure was relieved, numerous transverse breaks of a more or less superficial character were encountered and the fissures were more easily deflected or divided than at a depth. Such effects are not seen in all parts of the district or even in most parts, for erosion has usually removed all signs of them; but they are especially noticeable in some of the less eroded places.

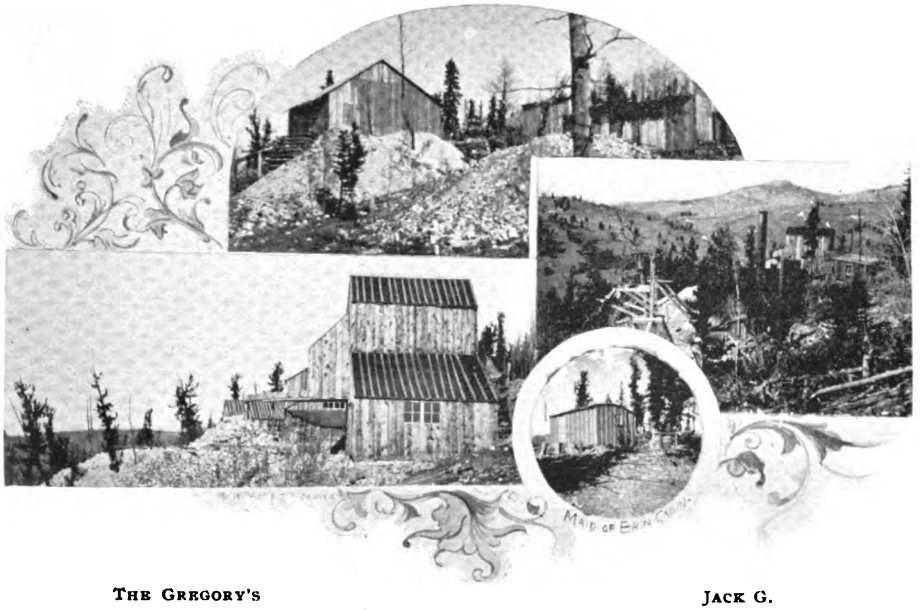


GOLD HILL. NORTH SLOPE. Geneva's

LATER MOVEMENTS IN THE VEINS—After and possibly during the filling of the fissures with ore, more or less movement seems in some places to have occurred along them, for in some of the veins the mineral contents are cut by longitudinal breaks or are slightly shattered and distorted. More or less of a similar movement also seems to have taken place along the minor fractures that cross many of the veins, for the latter are sometimes cut by indistinct cross cracks.

ORE DEPOSITION IN SHRINKAGE CRACKS—Sometimes cracks or sheeted zones occur in dikes at their contacts with the country rock, and follow all the curves in the meanderings of the dikes in a manner that would not be likely to characterize independent and subsequent fissures. The sheeted structure here is probably caused by a shrinkage of the dikes along the contact with the country rock during cooling. The shrinkage cracks are probably not so deep-seated nor so far-reaching as the fissures caused by the later dynamic disturbances and, therefore, when unaffected by such fissures, they probably have rarely, if ever, become the repository of important ore bodies.


ON BENNETT AVENUE



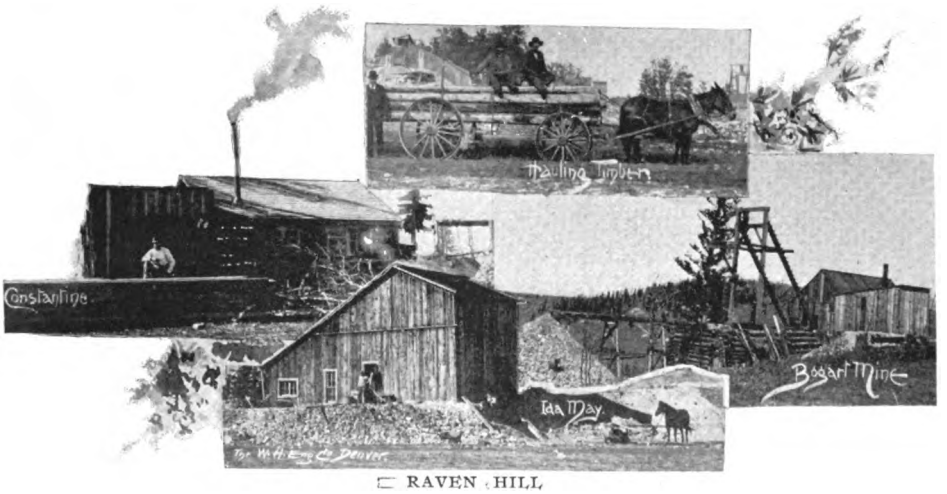

THE GREGORY'S JACK G.

RAVEN HILL. NORTH SLOPE

## PLACER DEPOSITS

Since the time of ore deposition more or less erosion has occurred in the Cripple Creek district, and the veins have been worn down in the same manner as the country rock. The gold in their eroded parts, when freed from the enclosing rock, was concentrated, by virtue of its greater specific gravity, with the gravels in the gulches and low places, thus forming the placer deposits of the Cripple Creek district. The country rock itself may also contain some gold outside of the veins, and this source has possibly supplied a part of the gold in the placer deposits.

The placers that have been worked lie almost immediately north and west of the town of Cripple Creek and occupy hollows in the amphitheatre of hills surrounding the headwaters of the stream of Cripple Creek, though in many other places throughout the district smaller deposits occur and have been operated to a limited extent. The placers have been worked in various ways, by the pan, rocker, sluice and by various forms of dry washers, but have been opened up only superficially. The water used in the wet processes is limited in amount, and therefore no attempt at "hydraulic mining" has been made.




RAVEN HILL

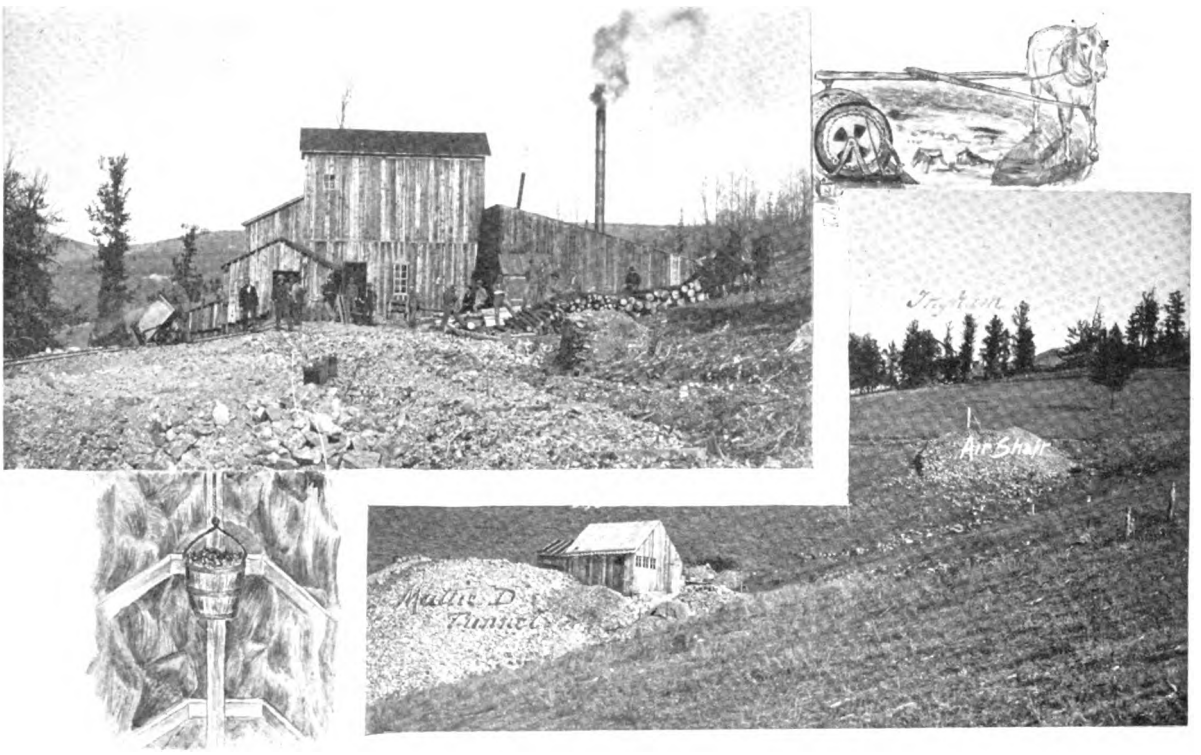
## SOURCE OF THE ORE

GENERAL STATEMENT—The gold and the associated vein materials in the Cripple Creek district have probably been derived from the volcanic rocks and to a less extent from the immediately adjacent granite; and they have probably not come from exclusively deep seated sources nor exclusively shallow sources, nor exclusively from the immediately adjacent rocks, but from the whole area of rock in which the underground drainage was tributary to the fissures at the time of ore deposition. The source of the gold and certain associated materials is ascribed mostly to the eruptive rocks and to a less extent to the granite, more on account of the peculiar environment of the tormer during ore deposition than on account of any definite knowledge at present possessed as to the relative amounts of gold in these rocks when in an unaltered condition. The concentration of gold in fissures requires not only a source of gold but also the reagents, generally hot solvent solutions under pressure, necessary to dissolve the disseminated metal, carry it

DUMP OF THE BOGART

into the fissures in their course and there, by one or more of many methods, deposit it. It is a noticeable fact throughout the Cripple Creek district that the richest veins occur in eruptive rocks or granite in the vicinity of the vent or vents from which the former were produced. In such positions, as the result of subsiding eruptive activity, the rocks were subject to the action of hot waters impregnated with various solutions; and these waters seem to have been the reagents which dissolved the gold and caused its concentration in fissures. Hence the veins are rich in and near the areas of the vents and become poorer as distance increases; and hence also the eruptive rocks probably supplied most of the gold while the immediately adjacent granite may have supplied a certain part.

The other vein materials accompanying the gold have probably come from similar sources, though often in a somewhat different manner. It is probable that the fluorine in the fluorite common in the district originally came into the fissures in a volatile or soluble form, such as hydrofluoric acid or more probably as some of the hydrofluosilicates or as soluble fluorides, and there encountered solutions which carried carbonate of lime derived from the decay of the eruptive rocks or from other sources. The natural result would be in the formation of



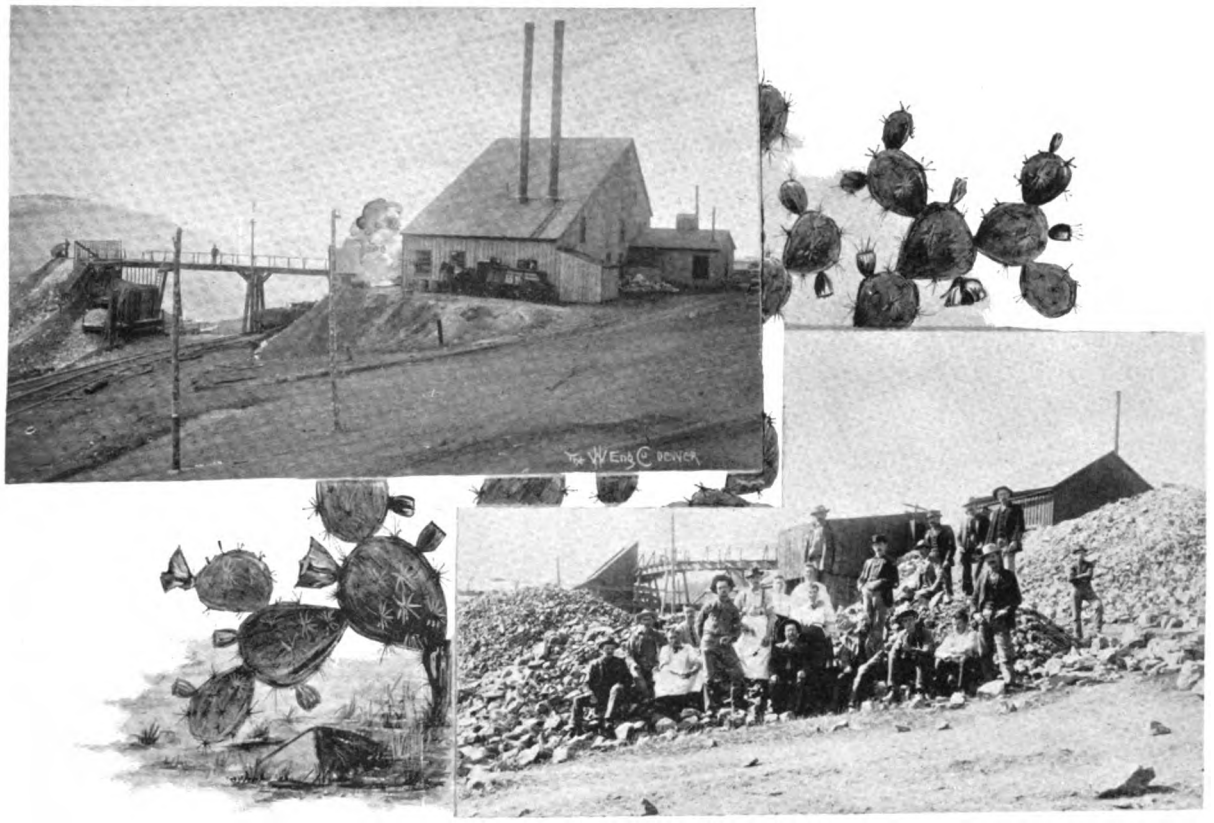

INGHAM RAVEN HILL MATTIE D.

fluoride of calcium (fluorite). If the fluorine had been previously in the form of hydrofluosilicic acid the precipitation of flourite would have been accompanied with a deposition of silica, and as the two materials would thus be formed at approximately the same time the result would be the intimately associated mixture of quartz and fluorite, known as "purple quartz," which is distinctly characteristic of the district.

## ORE CHUTES

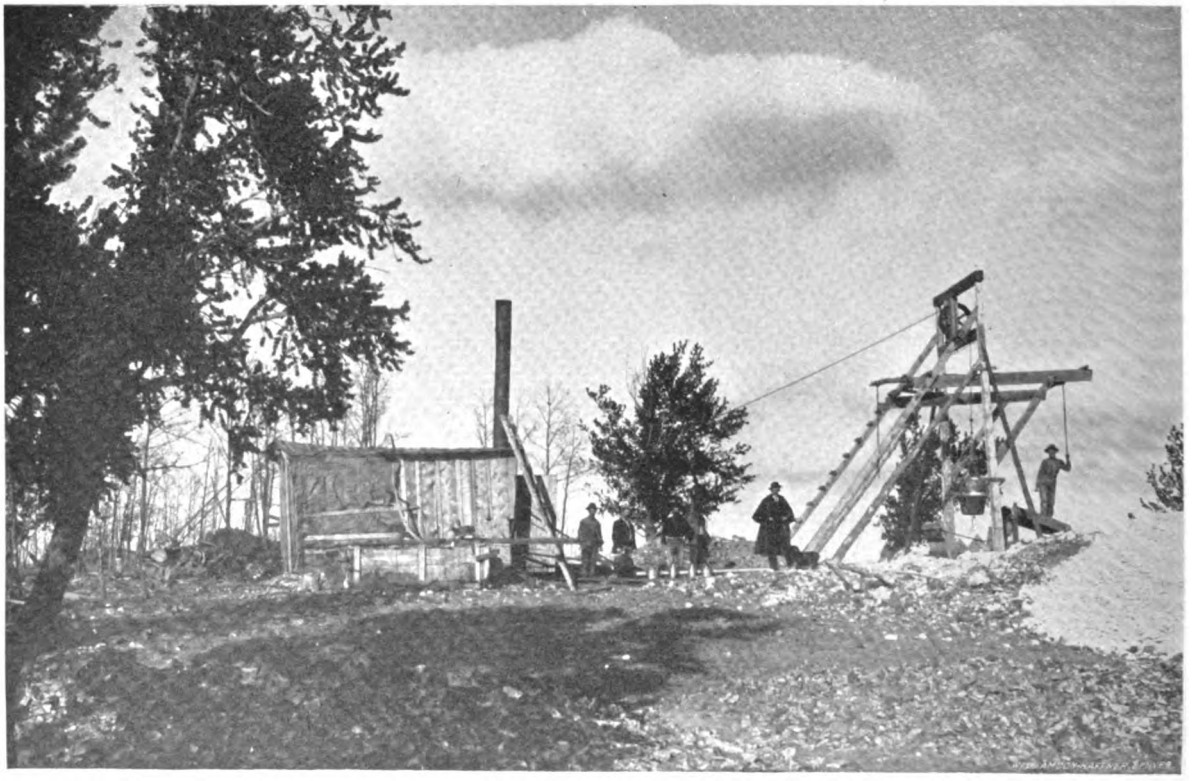
In Cripple Creek, as in other gold districts, the gold is not uniformly distributed throughout the fissures in which the veins occur, but it is concentrated in certain parts of the fissures into bodies of ore of varying shape, size and continuity known as ore chutes or ore courses.

The chutes trend in various directions in the fissures, though in many of them a general southerly pitch down and along the fissure is more common than any other. This is most often noticeable where the course of the chute is guided by certain transverse fissures. Elsewhere the chutes dip vertically, and more rarely a little to the north. They vary from one to several hundred feet in width along the fissures and from a few inches to several feet in thickness. In some places they have a well defined columnar shape, in others they have forms of



BATTLE MOUNTAIN. Independence No. 2

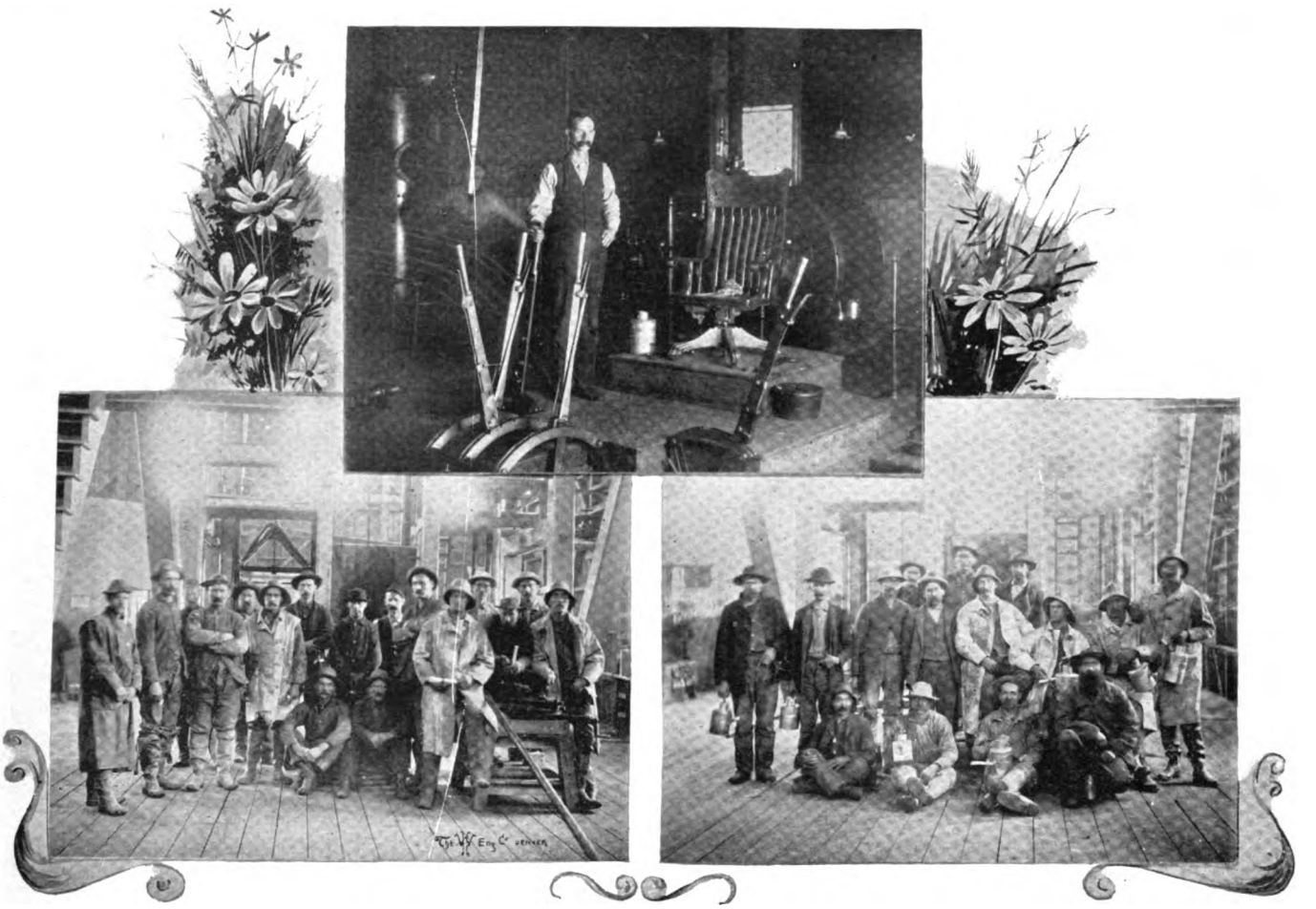
no regularity whatever. In some places they outcrop at the surface, in others their apex is many feet below the surface; in some places they are very continuous in depth and extend as deep as they have yet been followed, in others they come to an end at a comparatively shallow depth, though in some cases these shallow chutes may be replaced by others at a greater depth. The localization of ore in chutes is due in some cases to a restricted circulation of ore-bearing solutions guided by the more permeable places along fissures and by transverse fractures, while in other cases it is due to a variety of other minor causes.



MINERAL HILL New Discovery

# Colorado Scientific Society

In July, 1895, a special meeting of the Colorado Scientific Society was held in Cripple Creek and numerous papers relating to the district were read. The entire procedings of the meeting, which continued for three days, were obtained to add to the interest of these pages. It is not possible to give, in extenso, all the good things that were said of the region at the time, or that were afterwards written by the members and invited guests. Besides the papers that follow, communications were prepared by Professor P. H. Van Diest, Secretary of the Colorado Scientific Society; Professor Charles S. Palmer, University of Colorado; Professor William C. Strong; University of Denver; W. L. Austin, Ph.D., Consulting Metallurgist; Theodore E. Schwarz, Mining Engineer; Edmund R. Kirby, Mining Engineer; Edward E. Chase, Mining Engineer; A. F. Wuensch, Mine Examiner, L. J. W. Jones, Assayer and Chemist; Thomas Charlton, Chemist; W. S. Ward, of the Interior Investment Co.,



INTERIOR OF INDEPENDENCE SHAFT HOUSE

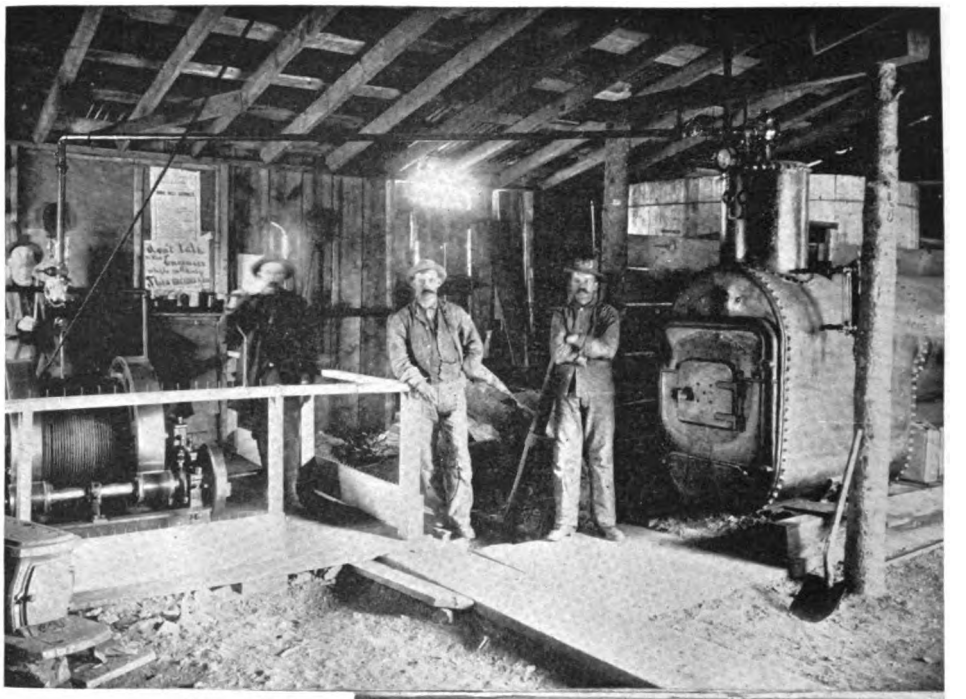
Denver; James A. McClurg, Mining Operator, Denver, and others. With one exception the annexed papers have not before appeared in type. They contain all matters of moment in the proceedings of the special July meeting of the Society that is not fully covered elsewhere in this work.

## BULL HILL AND THE NORTHERN DISTRICT

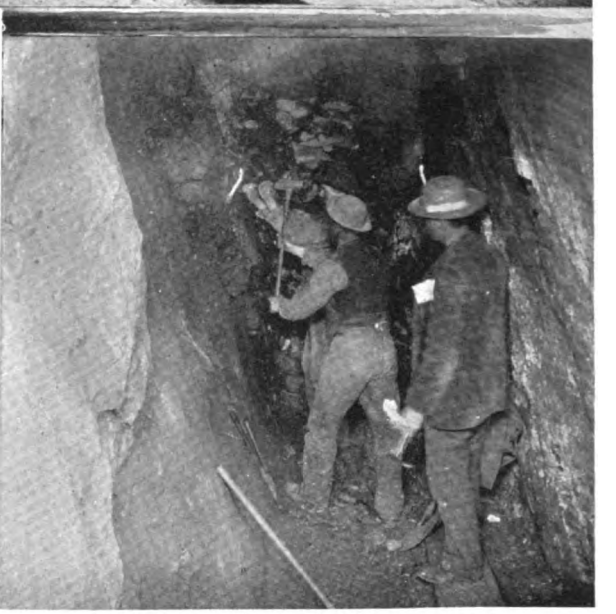
BY FRANCIS T. FREELAND, B. S.

C. S. S., A. I. M. E., A. S. M. E.; General Manager Isabella G. M. Co., Cripple Creek; Durant Mg. Co., Aspen; Aspen Contact M. Co., Lenado, Colo., etc.

GEOLOGY—The northern part of the district, Mineral, Carbonate, Tenderfoot, Gold, Globe, Iron Clad and Bull Hills consist of andesite and andesitic breccia, bounded on the east, north and west by granite and gneiss. A tongue of granite runs into this region from the northeast just west of Bull Hill and covers part of the headwaters of Squaw Gulch. Mineral Hill and Rhyolite Mountain are masses of andesite surrounded by granite. Many of the hills are capped by phonolite flows. Dikes of phonolite are common and in frequent exhibitions of other eruptives may be noticed, among which basalt and diorite have been provisionally determined.



ENGINE ROOM



INGHAM MINE — SECOND LEVEL

ORE DEPOSITS—The ore occurs in fissure veins, as impregnated dikes, as an alteration of the edge of dikes, as chimneys at the intersection of a fissure vein and a dike, and in the joints and cleavages of the country rock near the main fissure.

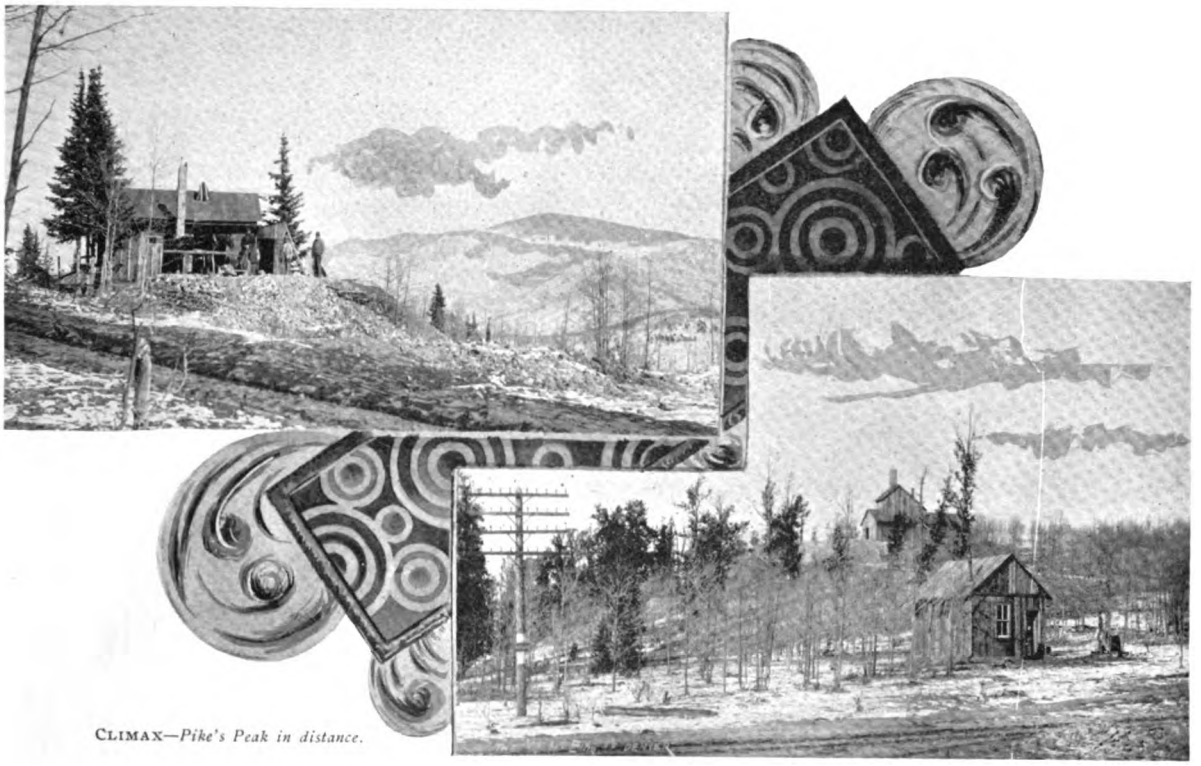
ORES—The valuable metals contained in the ores are gold and silver. Probably about three-fourths of an ounce of silver is mined for each ounce of gold. Some of the gold is free, but with moderate depths the tellurides appear. The country rock shows some pyrite but the veins contain little and that low grade. While some of the ore gives surprisingly rich returns, the product of the camp will probably average three ounces. This is to be considered a very high average grade for a gold camp giving this tonnage.

ASSOCIATED MINERALS—The principal associated mineral is quartz, both crystallized and massive. Some of the dull brown quartz is very rich. The opaque white and blue black quartz is poor. In the deeper workings a gray blue quartz will often show sylvanite on examination. Fluorite is also associated with the ores, and when dark purple or transparent, it is considered a sign of value. The gouge in the fissure veins is usually a brown clay, but sometimes white and rarely black. The gold in the clay and decomposed ores is fairly free. The quartz may be "frozen" to both walls, but in other parts the vein will have a "casing" of decomposing country rock, carrying small values.

DIKES—The impregnated dikes are usually softer than the country rock, and the boundaries of the pay ore often indefinite. The ore occurring as a selvage to a dike in andesite is generally an altered part of the dike and shows a quite uniform grayish yellow color and contains more silica than the country rock. This selvage is locally called "jasper," as in the Moose mine. Such segregations and impregnations are apparently in chimneys associated with a crossing fissure vein. Yet often the fissure and the dike, too, will be barren at some distance from the intersection. The Anna Lee shaft is on such a chimney. It is 760 feet deep and the deepest shaft in the camp at present. The Specimen and Bogart may also be put in this class. The dikes may be traced for considerable distances and show much irregularity in thickness.

FISSURE VEINS—The principal fissure veins in many cases cut through the dikes and are but little affected by them. One vein has been seen to fault another in the Zenobia. Most of the fissures run northwest or roughly parallel to the front range and main drainage system. While the veins maintain a general direction they vary greatly in strike and dip in their different portions. In some mines a particular course will correspond to a particular dip and bear some relation to the size and value of the ore bodies. (See L. Moissenet. Observations on the Rich Parts of the Lodes of Cornwall. Trans. by J. H. Collins, London, 1877.) The Isabella-Victor vein has been opened up for a length of a mile almost continuously and to a depth of five levels at the main shafts, and plainly shows this peculiarity. The Zenobia and Pharmacist veins have also been traced to some distance, the latter to a depth of 520 feet. In Cripple Creek the veins seem in some instances to be

SOME CRIPPLE CREEK HOMES



CLIMAX—*Pike's Peak in distance.*

LONDONDERRY
IRON CLAD HILL. NORTHEAST SLOPE.

in groups forming a plexus of veins with a large body of ore at their intersection. The Summit and Deerhorn mines are of this class. The Portland in the southern district is also a remarkable example. Other peculiarities of fissure veins, such as splits, feeders, robbers, splices, horses and throws may be noticed.

ORE IN GRANITE—The dikes and fissure veins also occur in the granite. In this case the ore is usually an impregnation of the granite for some feet from the fissure, the mica being replaced by the tellurides and the wall not well defined.

MINES IN THE GRANITE AREA—It was thought in the early days of the camp that the dikes and veins in the granite were barren. Recently a pay vein in the granite not associated with a dike has been found in the Home Run claim near Victor, and several veins have been found in the granite on the north slope of Tenderfoot Hill which give promise of turning out well.

GRANITE CONTACT—The normal contact of the andesite with the underlying granite has not been systematically prospected as yet, but should be tried even if at first sight the chances seem to be against finding pay ore. Such a contact, if made by a faulting fissure, has a high prospective value. The large and valuable ore body in the Independence in the southern district seems to fill these conditions.

VALUE IN DEPTH—Among the deeper mines are the Isabella, Victor, Anaconda, Moose, Elkton, Anna Lee, Independence and Portland. While I will not assert that the veins increase in size and value in depth, yet I can say that the deeper workings of the mines mentioned certainly show that the average vein is as profitable below as nearer the surface. The change to unoxidized ore in depth in this district is a matter of little note, for but a small part of the product is free milling ore, hence no check in the output is to be expected such as occurred in Leadville and Central City on reaching sulphides.

GRANITE IN DEPTH—It is probable that a number of vents through which the andesite was thrown up and spread out over the granite exist in the district and they are probably of great extent, so that in many places deep sinking will continue to show andesite. In other parts the granite may be reached. In some of the deeper workings an increase in the included granite may be noticed, indicating an approach to the massive granite. When the veins arrive at the granite, the change of walls may influence the character of the mineralization, but there is no reason to believe that the vein will be cut off by the contact with the granite.


COLORADO LIQUOR HOUSE AND "TIMES" OFFICE.

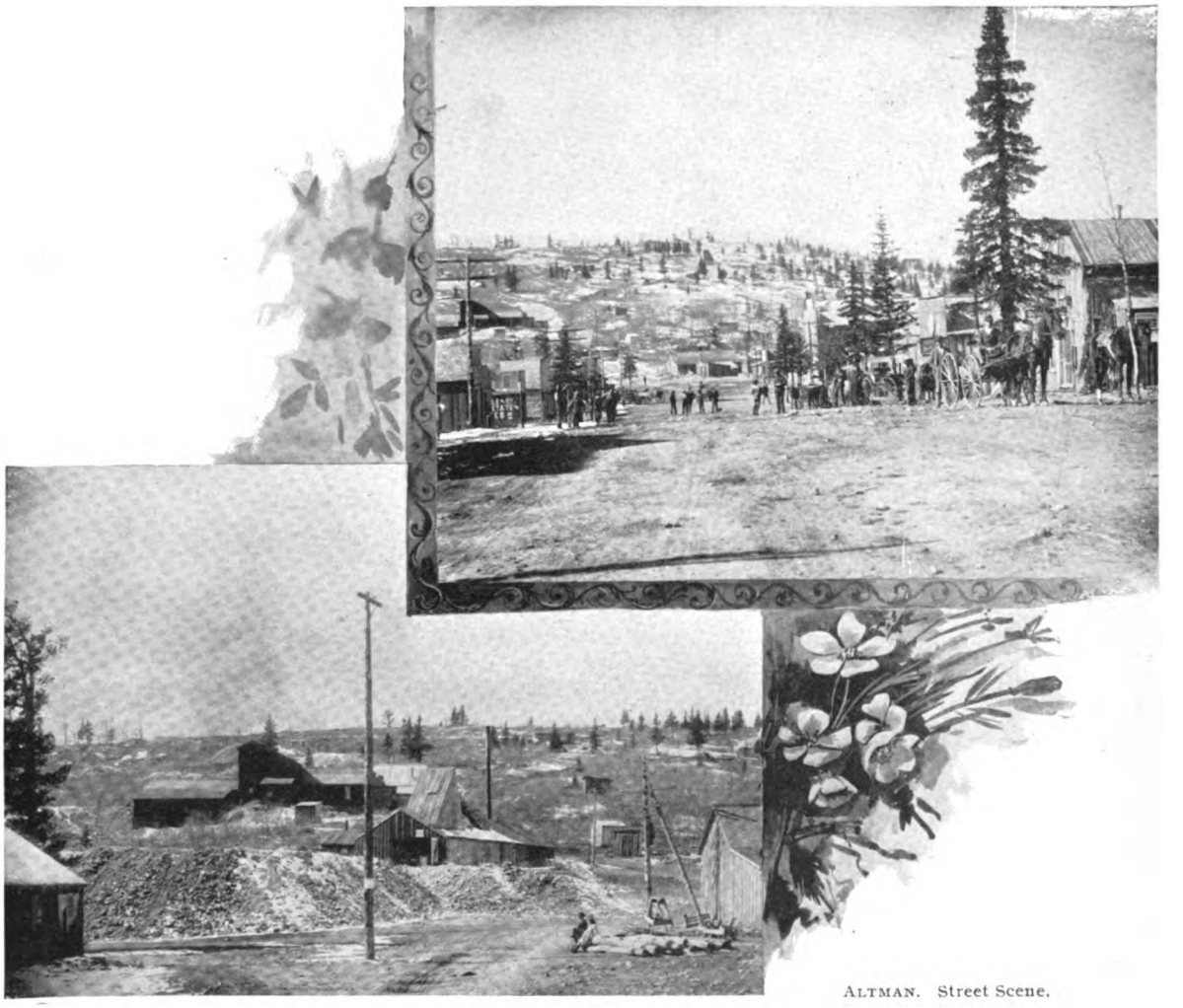
EXTENT OF THE DISTRICT—The boundaries of the district are not yet clearly defined and may be susceptible of considerable extension. Several outlying bodies of andesite are known—the Home Run mentioned above is a pay fissure entirely on the granite—and the new discoveries in the north slope of Mineral Hill on phonolite dikes in the granite add largely to the possibilities in every direction. The territory now being actively worked is about six miles square.

LITERATURE—See Whitman Cross. Geology of the Cripple Creek Gold Mining District.

R. H. F. Penrose, Jr. The Ore Deposits of Cripple Creek.

Dr. Richard Pearce. The Mode of Occurrence of Gold in the Ores of the Cripple Creek District.

All in Transactions of the Colorado Scientific Society, 1894, Denver, Colo.



ALTMAN. Street Scene.

ZENOBIA. PHARMACIST BULL HILL

PROGRESS IN 1895—For a time the wonderful discoveries in the southern portion of the district somewhat overshadowed the northern region, but during the current year a great increase in activity here has been noticed. The older mines such as the Isabella, Victor, Gold King, Union and others are sinking additional shafts, putting in heavier machinery, perfecting their surface improvements by extending their ore bins and sorting houses, and pushing extensive development work. Many new and important discoveries have been made, among which are the Brooklyn, Anchors, Midget and Geneva. More than a dozen new steam hoists have been erected on Gold Hill since last February. The output, both in tonnage and total value, is steadily increasing and bids fair to double the product of the State in gold.

ORE TREATMENT—The camp is exceptionally well provided with facilities for the transportation and reduction of ore. The higher grade rock is sold to the great lead smelters at Denver and Pueblo. The medium grade product is sold to the two chlorination works at Gillett and Lawrence, and the two cyanide plants at Florence

GOLD HILL. Lone Star No. 2.

and Mound City. The low grade surface ores are worked up in the local custom stamp mills by amalgamation and concentration with a fair degree of success. Transportation is provided by two railroads and good wagon roads in every direction.

CONCLUSION—To one looking back but a few years the change from a peaceful cattle range to a group of a dozen cities and villages with a population of 18,000, the surrounding hills dotted with puffing hoists and substantial buildings, the air rent by the sharp blasts of giant powder and the roads blocked with endless processions of four-horse quartz teams is marvel-

GOLD HILL. NORTHWEST SLOPE. New Moon. Temomj Anchor.

ous, and a monument to Western, and principally local, mining energy. The camp attracted but little attention in its beginning, partly on account of the fruitless stampede to "West 4-mile," called the Mount Pisgah district, some ten miles west, in 1884. But an output of over $300,000.00 from one mine in one month, and over $8,000,000.00 in gold in a year from the district indicates the cause of this wonderful transformation.

CRIPPLE CREEK STORES

# CRIPPLE CREEK MINING DISTRICT

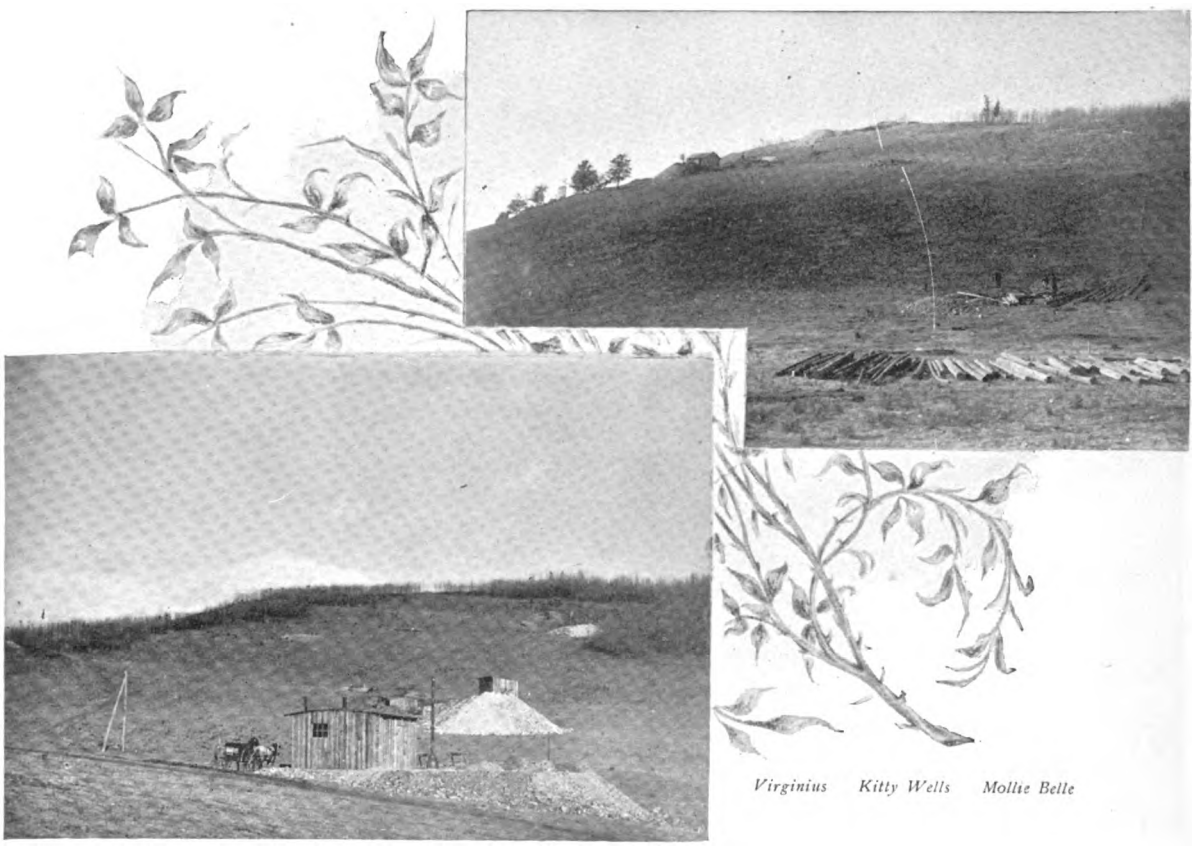
By CHARLES J. MOORE,

Civil and Mining Engineer, U. S. Dep. Min. Surveyor, Consulting Engineer to the Independence and Independence No. 2 mines, etc., Member C. S. S. and Am. Inst. M. E., etc.

In view of the many matters of interest to be seen by the Society and the exceedingly limited time for examination of the district, it seems advisable to make this address somewhat informal and general, and to call attention of the members to special features of interest which will come within their purview to-morrow, rather than devote the time this evening to the many features of purely scientific interest, some of which will, however, be indicated in the course of these remarks and which could very profitably occupy the attention of the Society for two or three consecutive meetings.

For the same reason and of the presence of so many invited citizens of this district and town as guests of the Society, purely technical language will be eschewed as far as possible.

General Description—The district comprises an area eleven miles square or 132 square miles in extent, of granite and gneissoid rocks penetrated with various dikes of phonolites, basalt and diabase (the first named being the most numerous), and containing near its center an extensive area of volcanic breccia and tuff mainly




*New Hope* *Croxton*

CARBONATE HILL. NORTH AND SOUTH SLOPES

andesitic. The northeast corner of this extensive area bears about four miles southwest from the summit of Pike's Peak, and very nearly all the prospecting of the region would be considered to be within this area, which is well marked by the mammæ-like forms of Rhyolite Mountain, 10,700 feet above sea level, on the north, and Nipple Mountain, 10,068 feet high, on the south, the distance between these mountains being ten miles on an air line, with a course of S. 12° 50′ E., passing a little east of Squaw Mountain, 10,200 feet high and equidistant from the other two.

The chief prospecting, however, is confined to a section 8x7 miles, or 56 square miles in area, being 42 per cent of the whole, and in the center of this an area 6x4 miles, or 24 square miles in extent (being 18 per cent only of the whole), is that which the Society will inspect to-morrow and within which are found all the paying mines to date. These paying mines are comprised within an area of 7.2 square miles, being less than six per cent of the entire 132 square miles, or 30 per cent of the central 24 square miles area.

NORTH OF TENDERFOOT HILL. A. P. Mine

GEOLOGY—The general geology has been very carefully stated in Dr. Whitman Cross' paper, read before the Society, July 4, 1894, and the geology of the ore deposits by Prof. Penrose on the same date, also in the Pike's Peak Folio of the United States Geology Atlas, prepared by Dr. Cross and published by the government last winter, 1894-5.

The brief statements in F. T. Freeland's paper on Bull Hill and the northern part of the district, to which you have just listened, are fully in accord therewith, also with my own observations, which may all be summarized as follows:

1. The central portion of the district is occupied by a volcanic breccia, chiefly andesite, but containing also fragments of phonolite, this breccia being "the product of explosive eruption from a local vent, beneath some portion of the mass now seen (Cross)." I would here remark that my own observations tend to prove several sources for this breccia, several vents, in fact, a geyser region similar to Yellowstone Park, rather than a single volcanic vent. The rounded hills and narrow valleys forming the topography of the district, grassy slopes varying from 6° to 35°, and picturesque groves of pine, spruce and aspens are all within the breccia area, commonly called "porphyry" by the miners, and several hills show evidence of a vent in some portion of their extent, chiefly in the center. This breccia contains massive rocks in places, such as andesite and phonolite, the latter being shown on the geological map in no less than six places as irregular areas within the breccia mass. In the Deerhorn mine a remarkable mass of gypsum is included in the breccia and the drift driven round it on two sides proves it to be over 60 feet in length, over 200 feet in width and over 100 feet in thickness; no limits to this mass have yet been reached.

I judge this to be a fragment of one of the ancient Algonkian limestones, altered into gypsum.

The breccia varies from a very fine tuff to a very coarse agglomorate, silicified in many cases by additions from solfataric waters, and in other places disintegrated in a general loosened mass, or even decomposed into clay.

2. "Massive rocks cut this breccia as dikes, the most important of these latter rocks being phonolite (Cross)." To this should be added the green dikes recently determined by Dr. Cross to be nepheline-basalt, of which you will see three excellent samples to-morrow at the Raven and Elkton and Moose mines on Raven Hill, and Black Diamond and Anna Lee on Battle Mountain. These basalt dikes have been proven on their course for two miles in length, passing from breccia into granite without any break.

3. Breccia has been largely decomposed "by gaseous and aqueous agencies, so that the original character of the material is much obscured." (Cross.)

4. "The ore deposition was probably the last phase of the period of permeation by circulating waters (Cross)," and most of "the gold bearing veins thus far discovered occur near, or in the immediate vicinity of the volcanic rocks."

5. The veins occur in cracks or fissures of great length, extending where developments have sufficiently proven without a break from the porphyry or breccia, into the granite and gneissoid rocks. Though doubtless many are mere cooling cracks in the breccia, yet the chief ore bearing veins are undoubtedly great fissures of dynamic origin, extending even far beyond the greatest limits of the district hereinbefore described.

Besides the great extent in length, they are also extensive in depth. The deepest shaft in the region is the Anna Lee, on Battle Mountain, which is now 800 feet deep and shows no diminution in the vein, either in size or the grade of its contents.

WELLS FARGO EXPRESS WITH GUARD

6. The veins run generally in systems, that is, a series of three, four or more may be discovered running say northwesterly.

On tracing these along their course, they will be found to be intersected by another series with say a northerly course, and these in turn, if followed on their course, intersected by another series with a northeastern course. These in turn by another series with eastern course, etc. At these numerous points of intersection ore chimneys have been deposited, of which you will find the most noticeable example in the Portland mine, and at this mine also you will notice the behavior of two dikes, phonolite and basalt. Ore chutes and pockets are also found in this vein even where not intersected by transverse fissures. The Buena Vista and Victor mines which you will see to-morrow are fine examples of this.

Another class of veins are those formed by mineralized dikes, of which the Elkton, Raven, Moose and Anna Lee will be the most prominent examples.

Another class consists of those which have a dike almost continually for one wall of the vein, the gangue being chiefly the altered country adjoining to which a certain portion of silica is added from the waters circulating

*Vindicator* *La Belle* *Christmas*

BULL HILL. SOUTH SLOPE

in the fissure. The famous Independence—the King of the District as the Portland is the Queen—is an excellent example of this class of veins. The Independence dike is phonolite, and has been traced in the granite over a mile and one-half with great regularity in course, which is north and south. As it enters the breccia it splits and becomes more irregular both in size and course. The width varies from a maximum of twelve feet on the surface in the granite to only four inches in thickness in the the granite at the 400-foot level. The vein has an average vertical dip, and courses north and south in the granite for a distance of 500 feet southward from the contact line, thence S. 6° E. 2,000 feet. In the breccia country the vein has been proved thus far 900 feet in length with a course N. 25° W., and a depth of 420 feet at the Independence shaft to 575 feet at the Portland No. 2 shaft. The thickness of the ore body varies from two feet to eighteen and one-half feet, being greatest at the line of contact between breccia and granite, but showing little inclination to spread along the contact planes except in the fourth level, on which the contact is mineralized by alteration of the granite country, *not the breccia*, for a distance of ninety-four feet. The main ore chute pitches northward in the vein and passes from granite into breccia on its downward course without break or displacement of any kind. The width

THE VICTOR DUMP

of this chute has not been well determined so far as developed, but measures 350 feet horizontally along the course of the vein, or 180 feet normal to the pitch, the whole of this great ore body being "pay" of various grades, and the average so high as to be phenomenal.

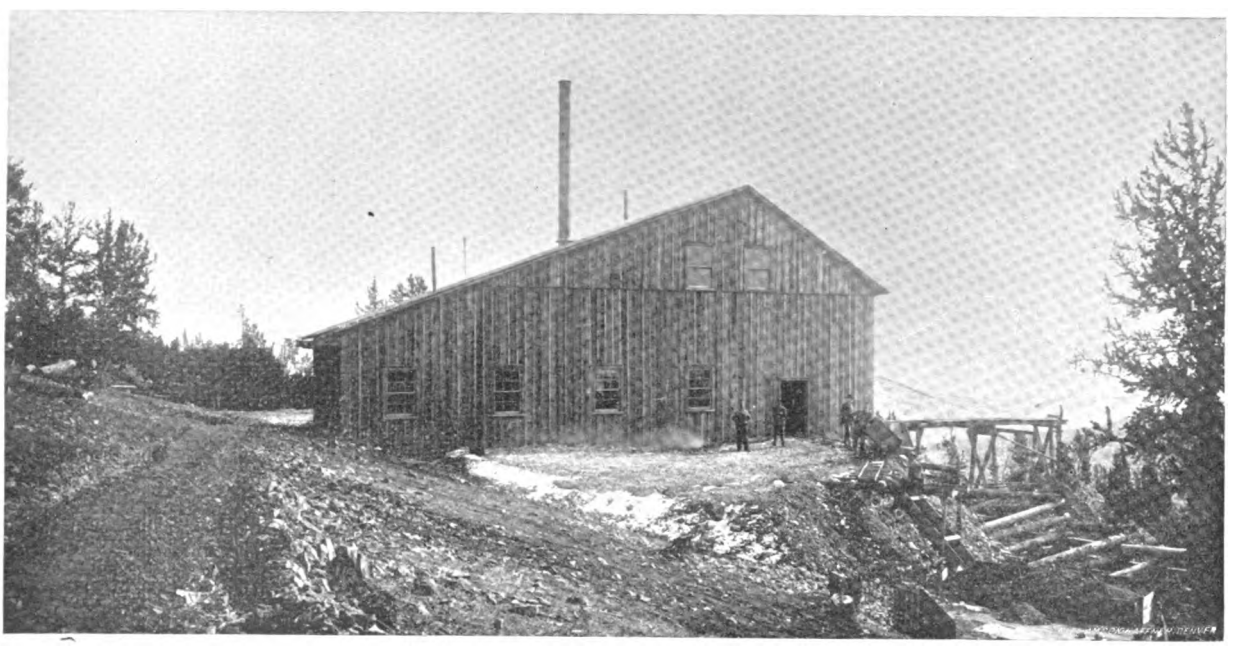
The contact of granite and breccia has been explored in this mine for 460 feet in depth and shows the following average slopes and distances beginning at the surface and dipping northward, viz: 127 feet of 48.5°, 124 feet of 60.5°, 104 feet of 66.5° and 101 feet of 72°. The increase in pitch downward indicates a crater-like form to the granite basin underlying the breccia, but the rapid increase in granite fragments in the breccia in the lowest workings of Portland, Bobtail No. 2 and other shafts also indicate an approach to a granite floor on which the breccia lies. The exact form of this floor is an interesting speculation; I agree with Dr. Cross that it is most probably an exceedingly irregular surface, very similar to the topography of the present day, but in general reversed thereto, so that the deepst portions of the granite basins will be found under the summits of the present hills, and thus the breccia country will be found to be of great depth.

BULL HILL. SOUTHWEST SLOPE. Dante

The Independence mine workings in brief consist of the following: Original or whim shaft, 73 feet deep; main shaft, 420 feet deep at date with four levels at 109 feet, 209 feet, 307 feet and 404 feet, depth from collar. These levels have lengths respectively of 300 feet, 350 feet, 936 feet, and 550 feet, the two latter having cross-cuts to the extent of 482 feet and 332 feet, respectively.

These workings are connected with those of the Independence No. 2 shaft (also belonging to Mr. W. S. Stratton, owner of the Independence), which at present is 550 feet deep, 860 feet distant northerly from the main Independence shaft and the collar 126 feet vertically above the latter. The four levels at 103 feet, 203 feet, 303 feet and 428 feet depths have the following lengths: No. 1, 402 feet, cross cut, 170 feet; No. 2, 204 feet, cross-cut, 100 feet; No. 3, 84 feet, cross-cut 230 feet; No. 4, 200 feet, cross-cut and drift, 460 feet.

At 290 feet northwesterly from the Portland No. 2 shaft and 52 feet higher up the hill is the Black Diamond shaft, 334 feet deep, with an incline starting at 184 feet from the collar, following the dip of the vein



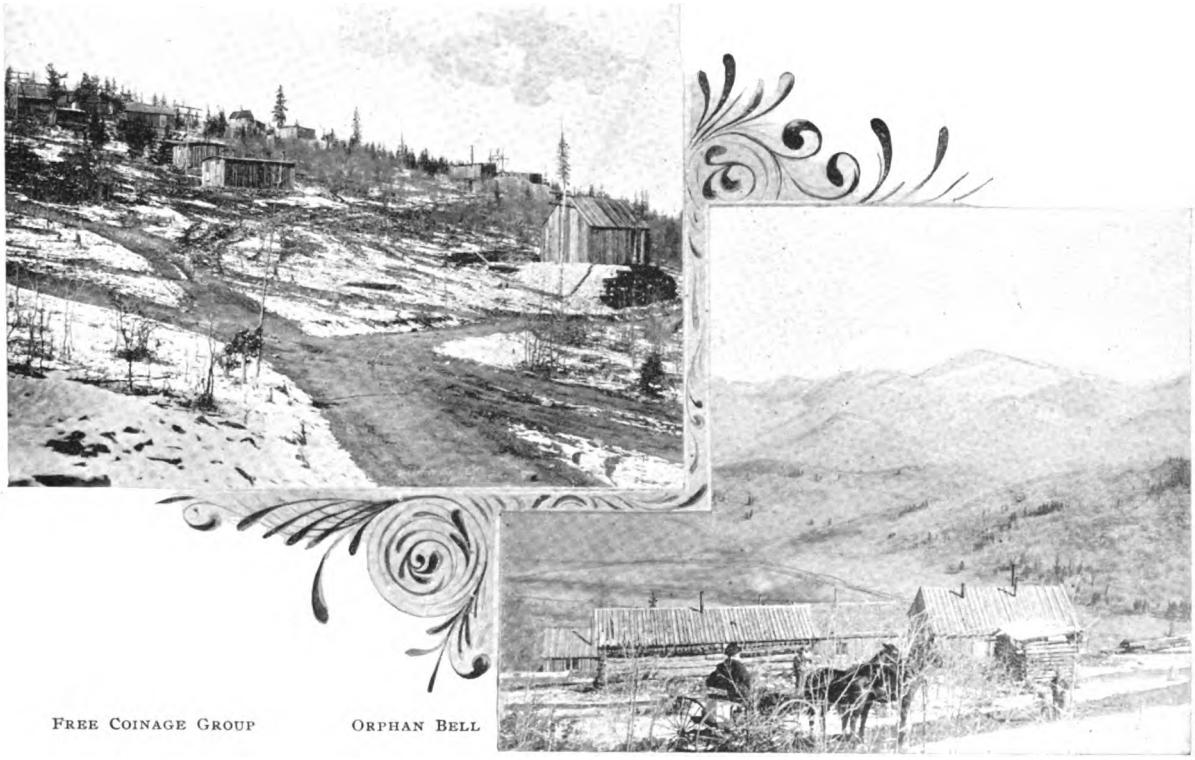
BULL HILL. SOUTHWEST SLOPE. John A. Logan

for 146 feet westward. As these varying dips are typical of many of the veins of this district, I give them in detail, starting at the shaft: 26 feet, 40°; 18 feet, 54°; 11 feet, 46°; 14 feet, 41°; 16 feet, 42.5°; 11 feet, 53°; 16 feet, 69.5°; 14 feet, 73.5°; 20 feet, 69°. Level No. 1 is 240 feet long, and No. 2 at bottom of shaft 140 feet long. Cross-cut at bottom of shaft, 143 feet long.

Nearly due north from the Black Diamond shaft at a distance of 160 feet and 41 feet higher is the Portland working shaft, which is sunk vertical for 150 feet, thence on an incline following one of the veins on its dip 300 feet deeper to the bottom, the dips varying from 59° at the 150 foot level to 75° at the bottom. The various levels from this shaft are as follows:

Level No. 1, at 55 feet deep, 540 feet long; No. 2, 100 feet deep, 340 feet long; No. 3, 150 feet deep, 320 feet long; No. 4, 200 feet deep, 580 feet long; No. 5, 271 feet deep, 90 feet long; No. 6, 332 feet deep, 503 feet long; No. 7, 381 feet deep, 100 feet long; No. 8, 450 feet deep, 150 feet long. These workings with the White House shaft 80 feet deep and level 168 feet long, are the southernmost of the famous Portland mine.

At 310 feet north and up the hillside from the Portland shaft is the Scranton shaft, 309 feet deep, connected with Portland by the first and second levels, and having an independent level 168 feet long.



FREE COINAGE GROUP ORPHAN BELL

SMUGGLER BOARDING HOUSES—*Pike's Peak in distance*
BULL HILL, NORTH SLOPE

West from the Scranton 380 feet and northwest 425 feet from the Portland shaft is the Bobtail No. 2 shaft, 425 feet deep, with levels as follows: No. 1, 140 feet long; No. 2, 120 feet; No. 3, 124 feet, and No. 4, 250 feet, which is being driven southward to connect with Portland No. 6 level now driving northwestward.

At 400 feet N. 16.5° E. from the Bobtail No. 2 shaft is the Anna Lee shaft, the northernmost of the Portland Company's main shafts, which also bears N. 22° W. 1,910 feet from Independence main shaft, and is 377 feet vertically higher than the latter.

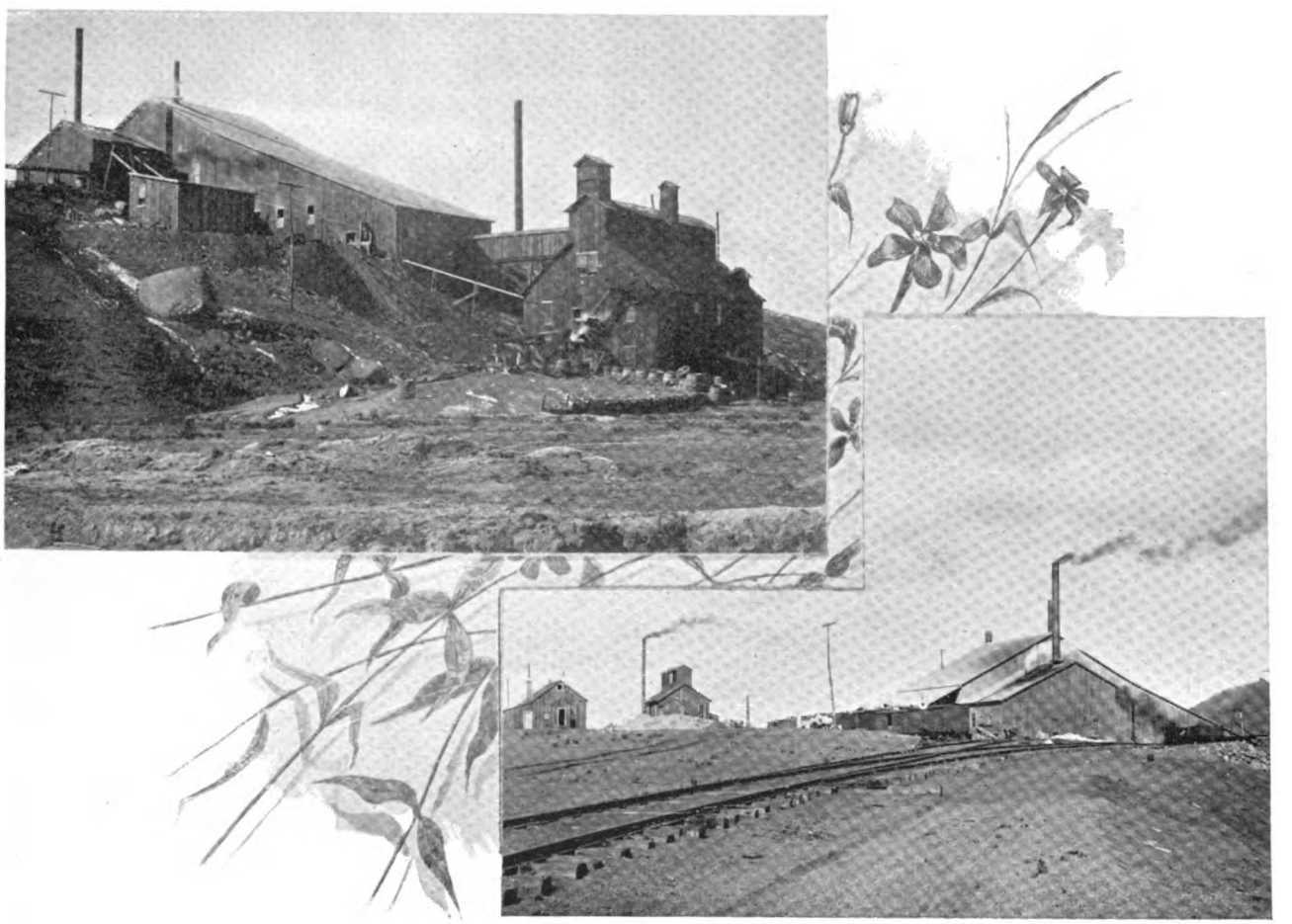
This shaft was sunk upon an ore chimney from the surface to the eighth level, thence it pitched slightly northward so that each level now reaches it by drifting twenty to fifty feet. That shaft is now 800 feet deep, and there are fifteen levels.

The average daily production of the Portland property from all these shafts is about 180 tons, and the average grade $71, or say 3.5 ounces gold, of which the Anna Lee will average 2.1 ounces gold.

The ultimate main working shaft of the whole Portland property is being sunk half way between the Portland and Bobtail No. 2 shafts, and is 13.5x4.5 feet in size and 315 feet deep, September 1, 1895.,

The Portland mine is a fine example of a great ore chute at the intersection of four veins, varying in course from N. 17° W. to N. 73° W. This has been proven a total depth of 460 feet, and the width from six inches to one foot at the surface has enlarged to 30 feet in width in the intersection of three veins at 330 feet in depth, all of which, except about 10 per cent. of waste, is paying ore. The continuity of the main Portland vein has been proven on its course a total distance of 2,400 feet and in depth 500 feet. Phonolite and basalt dikes accompany the Portland veins.

The Anna Lee is an example of an ore chimney formed along a dike of basalt, and apparently occupies one of the solfataric vents. The central dike is from two feet to three feet wide and has a course varying from N. 50° W. on the south of the ore chimney to N. 10° W. on the north side. The average size of the ore chimney is 25 feet from north to south by 16 feet from east to west, and the ore is formed by complete alteration of the dike and some of the country surrounding, a great portion of this being very coarse fragments of breccia, both angular and rounded in form, chiefly the latter.



EL PASO REDUCTION COMPANY'S WORKS, GILLETT

I have given the above figures regarding the Independence and Portland properties at considerable length, as they have never been published before, and you all doubtless came to the district with the express purpose of visiting these famous mines.

As examples of fissure veins in the granite entirely unconnected with any eruptive dike, thus far developed, may be mentioned the Home Run, Climax, and Santa Rita veins, on the south slope and spurs of Squaw Mountain.

The paying fissure veins in the granite follow, as a rule, the line of ridges having a general north and south trend or are parallel thereto, rather than the valley lines of the topography.

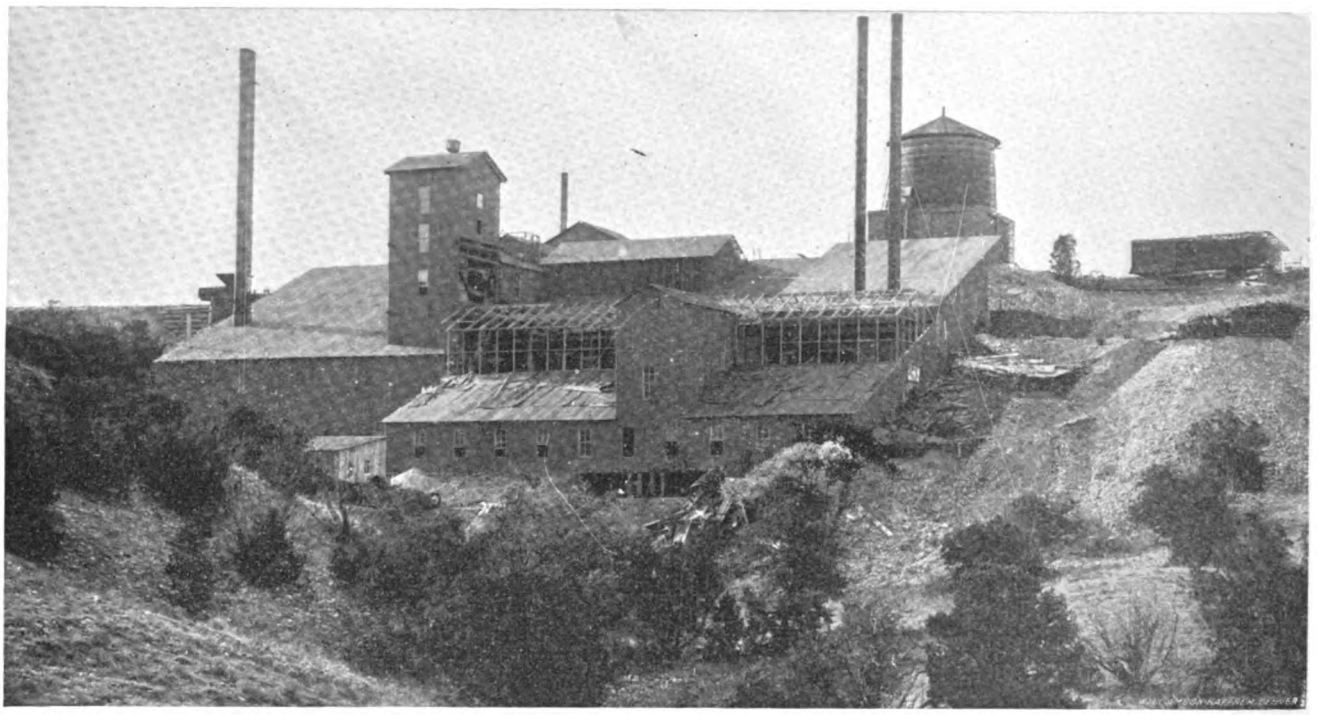
In addition to all the mines above named which will be visited to-morrow, the Anaconda tunnel, 1,100 feet long and 500 feet below ground surface at the face, situated in Squaw gulch, will be visited to gain an idea of the

character of the breccia country; also the Chicago & Cripple Creek tunnel, situate in Poverty Gulch, 1,000 feet long, for the same purpose; also the strong surface outcrop of the Summit mine on Globe Hill; also the Brodie mill of 50 tons capacity extracting values by the cyanide process, situate at Mound City on Squaw Gulch, and on your return to Denver the El Paso Reduction Works at Gillett, extracting values by chlorination, with a capacity of 75 tons daily.

In reference to the ore deposition, I am firmly inclined to the ascension theory rather than that of lateral secretion. It is true that much of the country yields appreciable values in gold on assay, but *not* universally, and the values are derived more probably from the numerous veins and veinlets rather than from original impregnation of the whole country, especially as we find much of the country entirely barren, and I think as a general fact it may be stated that the country in the immediate vicinity of rich and strong veins is richer than the more remote.

In conclusion, all evidence goes to prove the following important facts with reference to the permanency of this mining district, viz:

1. The main veins are true fissures extending for great length throughout both granite and breccia area; proved by Independence, Strong, and other veins on the southern portion of the district and the Galena vein 3.5 miles northwest of the town of Cripple Creek.



AMERICAN REDUCTION COMPANY'S WORKS (Dioxide-Cyanide), FLORENCE

2. The veins continue downward as deep as any known veins elsewhere can be profitably worked.

3. In most cases the veins show increased size and value in depth.

4. While the paying veins and fissures are most abundant in the breccia areas, there are paying fissures found both in the granite and outlying phonolite areas, all of which justify vigorous prospecting in those regions.

5. The most promising area in the district is by no means fully worked. The paying veins thus far opened only occupy 30 per cent of the central 24 square miles of the district. Of this 24 square miles, 10.5 only are breccia, and in one square mile is included phonolite areas of various sizes and six in number (see geological map), and 3¼ square miles are outlying phonolite areas, all of which are promising prospecting territory. Consequently there can be no fear of the exhaustion of this as a gold bearing district of exceptional richness for twenty-five years at least.

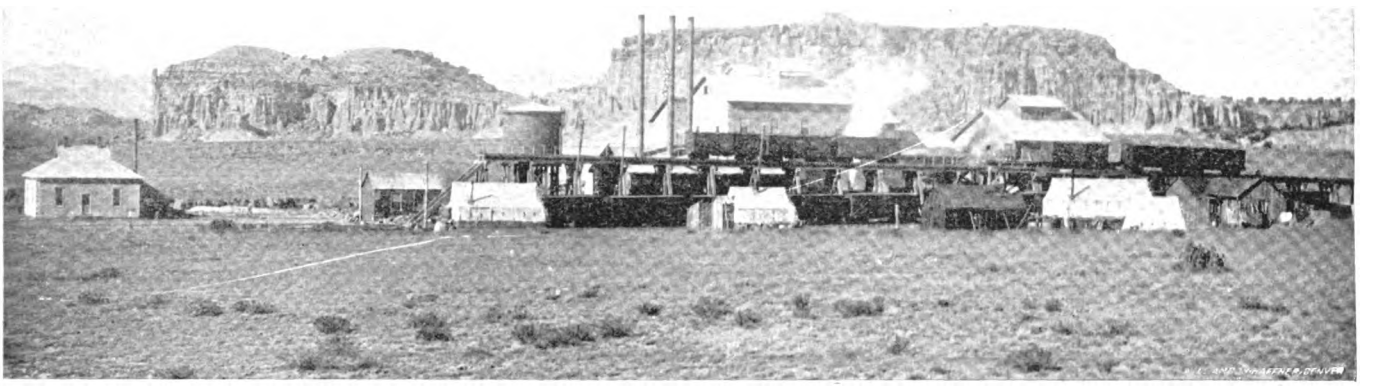
## CHLORINATION OF CRIPPLE CREEK TELLURIDES

BY J. D. HAWKINS

When it was known that the region was capable of producing gold tellurides in quantity the problem was presented to find a treatment more economical than smelting, particularly for medium grade ores. The traditional stamp mill, with plate amalgamation and concentrators, was first tried with but partial temporary success. As soon as the oxidized surface mineral gave place to the unoxidized refractory vein filling the percentage of gold saved became so low as to be very unsatisfactory. It is, of course, needless to state that gold tellurides are not decomposed by mercury, and their being very friable renders concentration exceedingly difficult, if not impossible.

With the end in view of obtaining a satisfactory and economical method of reduction for these ores, I devoted several months to a series of experiments, on raw and roasted ores treated with cyanide of potassium and chlorine. The conclusion arrived at was that the chlorination treatment of roasted ores was the best method of uniformly securing a high percentage saving of metallic gold. Briefly outlined, the method of procedure adopted in the working of the chlorination mills of the district is as follows.

After a very careful sampling, the ore is dried, preparatory to being crushed. The crushing is accomplished by the use of several pairs of rolls, and the pulp is then roasted dead in some form of calcining furnace. Great care is required in this latter operation.



METALLIC EXTRACTION COMPANY'S WORKS. CYANIDE, NEAR FLORENCE

The ore is now ready for the chlorine treatment, which is effected in lead lined steel cylinders, so constructed as to be able to be hermetically sealed. These are ordinarily known as the chlorination barrels, and are provided inside with a filter in order that after the chlorination of the charge is complete, the gold solution may be satisfactorily removed from the pulp. The barrel is first charged with an amount of water approximating about 45 per cent. of the weight of the ore, the sulphuric acid is then added, then the ore, the average charge being about five tons. Bleaching powder is then introduced on top of the ore, the barrel closed up and started revolving. The revolution is kept up for between three and four hours, the barrel then stopped, the water connections made, and water forced in under a pressure of from twenty to forty pounds to the square inch. In from two to four hours the leaching will be complete. The pulp is then discharged from the barrel which is then ready for a new charge.

The gold liquor as it comes from the barrel contains a small amount of sediment and it is therefore necessary to allow this to settle in order that the solution may be perfectly clear before precipitation. The precipitation of the gold is best effected by the use of hydrogen sulphide gas ($H_2S$), which throws the metal down perfectly as a flocculent sulphide, easily collected.

The precipitation is most satisfactorily effected by first combining the free chlorine by passing sulphurous acid gas, produced by burning sulphur in air, through the solution, then passing in a current of hydrogen sulphide until the liquor shows no gold in solution. The liquor is then passed through a filter-press, by means

of which all the solid particles are retained, only the clear liquor escaping. When a sufficient amount of sulphides has accumulated in the press, it is opened, and the cakes removed. These sulphides, running in value from forty to seventy per cent. gold, are dried, roasted, pulverized and mixed with borax and soda, and melted down to an ingot of gold. The results obtained in this process are very satisfactory when conditions are properly complied with, and throughout it is based on scientific and metallurgical considerations, and when properly handled will give constant results.

## CYANIDE

BY PHILIP ARGALL

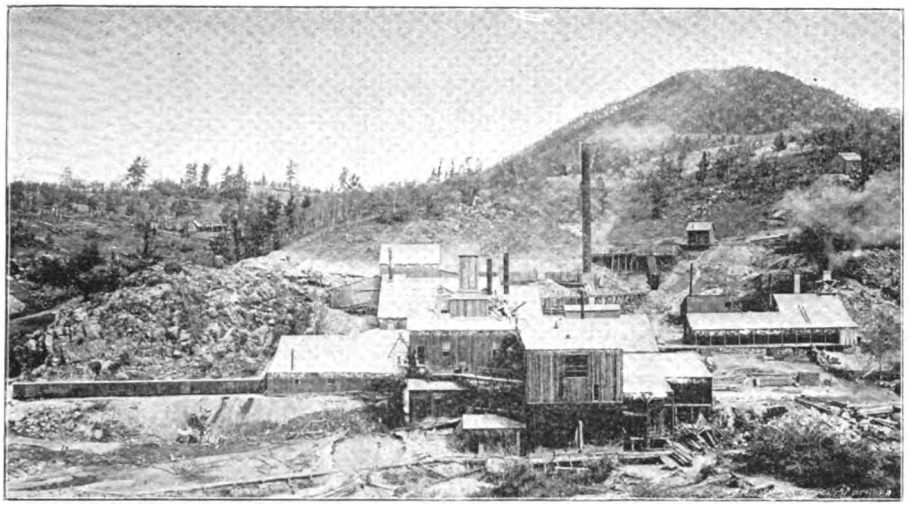
Superintendent Metallic Extraction Co., Florence, Colo. Address at the Banquet, July 2, 1895.

The toast to which I am asked to respond is at once peculiar and mysterious. What am I to understand by it? I am, for example, well acquainted with a flag station on the Florence & Cripple Creek Railroad, called Cyanide, but I presume that you are not interested in the history of a small way station. Again, I have some little knowledge of the cyanogen compounds, usually called cyanides, but here I am again confronted with

THE BRODIE GOLD REDUCTION COMPANY'S WORKS, MOUND CITY, CRIPPLE CREEK

difficulties. You are all aware that the word "cyanogen" is derived from two Greek words which mean "blue I produce." Now, I could never forgive myself if I inadvertently became the instrument through which any person at this festive board should receive the slightest fit of blues. There remains a process for the extraction of gold from its ores, commonly called the "Cyanide Process," regarding which I can claim some little knowledge, and with your permission will offer a few remarks.

Towards the close of 1893 I made quite a series of experiments on the low grade oxidized ores of Cripple Creek, in order to determine the best method for their beneficiation. I found that bromination and chlorination were very successful, but on the whole cyanidation seemed to me to promise the best commercial results. In looking further into the merits of this process, however, I found that many of the cyanide mills in the United States had scored failures because of the difficulties encountered in leaching raw ores; while turning to the large cyanide plants erected in South Africa to treat the tailings from stamp amalgamation mills, I found that the slimes which formed 30 per cent. of the total product discharged from the batteries, could not be treated by the cyanide process



THE LAWRENCE GOLD EXTRACTION COMPANY'S WORKS, LAWRENCE

and were consequently lost. Experiments on Cripple Creek ore showed that the finer it was pulverized the higher the extraction became, though the leaching difficulties increased, and finally, at 60 to 80 mesh, depending on the ore, satisfactory leaching was impossible.

Here, then, I was confronted with serious difficulties. Remembering, however, the old rule for keeping books, "Never lend them," it struck me that the easiest way to treat slimes was not to make them. To this end, it became necessary to see what could be done in fine crushing with improved machines working in series, or crushed by successive comminution. The pulp produced in this way was very granular, and contained little dust, giving in most cases an easily leached product. On some of the very soft ores, however, it was found necessary to separate a certain portion of the fine dust from the pulp, so as to give a good leaching product, then the separated dust was formed into briquettes, burned, and afterwards coarsely crushed and leached in the usual manner. In this way the leaching problem was solved.

In the spring of '94 I was engaged by the owner of the Brodie Cyanide Mill to put in an experimental plant, to check, on a working scale, the results of laboratory experiments, and so determine if the cyanide process, which had hitherto proven unsatisfactory, could be successfully adapted to the treatment of Cripple Creek ores. This plant was an entire success. Crushing to 40 mesh, the leaching rate was all that could be desired, while the average results were more favorable than the laboratory experiments led us to expect. Particularly was this the case in the consumption of cyanide, which was 40 per cent. less than our preliminary experiments indicated as necessary. The Brodie Mill was shortly afterwards enlarged and improved, so that we now find it running at a stated capacity of fifty tons per day, treating ores purchased from various mines in competition with the other mills.

The results of the Brodie Mill tests were in time laid before local capitalists, who had large interests in Cripple Creek mines. These gentlemen decided to erect a 100-ton cyanide mill, so arranged that it could be easily increased to 300 tons daily capacity. A careful examination into all the conditions incident to the economic operation of such a plant, led me to select a site in the Valley of the Arkansas, about thirty-eight miles by rail from Cripple Creek, and two miles from Florence. Here we find abundance of water, cheap fuel, both coal and oil, a plentiful labor supply, and magnificent railroad connections with the principal mines of Cripple Creek. In a word, just the conditions necessary to build up a large metallurgical enterprise.

Ground was broken late in November last, and the works completed and ready to receive ore early in May. This plant, owned and operated by The Metallic Extraction Company, embodies all the recent improvements in the cyanide process, and is probably the most complete and perfect cyanide plant in existence.

Anything in the nature of a detailed description of the works would be entirely out of place, but it may be permissible to give a brief outline of the treatment to which the ore is subjected. In the sampling works it is crushed to pass a 2-mesh sieve and sampled automatically. It is next dried and crushed in rolls to 40-mesh, thence charged into steel leaching tanks holding 100 tons each. Here the ore is subjected to weak cyanide solutions, which dissolve the gold. The gold-bearing solutions are then passed over zinc shavings, on which the gold is deposited as a fine, dark-colored precipitate. This precipitate is cleaned up from time to time, treated with sulphuric acid to remove the excess of zinc, the residue smelted and shipped to the Mint in Denver in the shape of gold bars. The cyanide solution, freed from gold in the precipitation boxes, is pumped back to the storage tanks, brought up to strength by the addition of fresh cyanide, and again sent to the leaching tanks to dissolve the gold from another charge of ore.

The Metallic Extraction Works is running night and day treating ores from every part of the Cripple Creek mining district, with results satisfactory to all interested. The ore supply is apparently unlimited. We have not solicited shipments from any mine, but nevertheless receive all the ore we can handle, and to keep up with the supply additional fine crushing machinery is now being placed in position in the mill, while the directors are at present considering the advisability of increasing the works in the near future to a capacity of 300 tons per day. I do not wish to be understood as advocating the cyanide process for the treatment of all classes of Cripple Creek ore. The high grade ores will invariably go to the smelters, while some of the low grade tellurium ores

may require a preliminary roasting before subjecting them to cyanide treatment. On this point we are still in the experimental stage, but the experiments are entirely successful. I will say, however, that more than half the present output of low grade oxidized ores is being treated by the cyanide process, and I have, therefore, no hesitation in stating that the cyanide process has not only "come to stay," but that it now *is*, and will continue to be, one of the principal methods for the beneficiation of these low grade ores.

A little over a year ago ores running 1 oz. in gold left no profit to the Cripple Creek miner, while to-day ½-oz. ores leave a substantial margin of profit, and as further improvements are introduced in the metallurgical treatment of the ores, the miner will, as usual, receive *all* the benefit. We can, therefore, confidently predict a continuous lowering of the treatment charge on low grade oxidized ores, as each new metallurgical improvement is perfected.

It may be that in years to come, when the numerous hills of this wonderful mining district shall have yielded their golden harvest to the ever active miner, and shall have become catacombed with workings, some future metallurgist may treat them en masse with dilute cyanide solutions, and so leach out rich gleanings from the country rock, which, I am informed, will everywhere run a few dollars per ton.

## Views of a Conservative

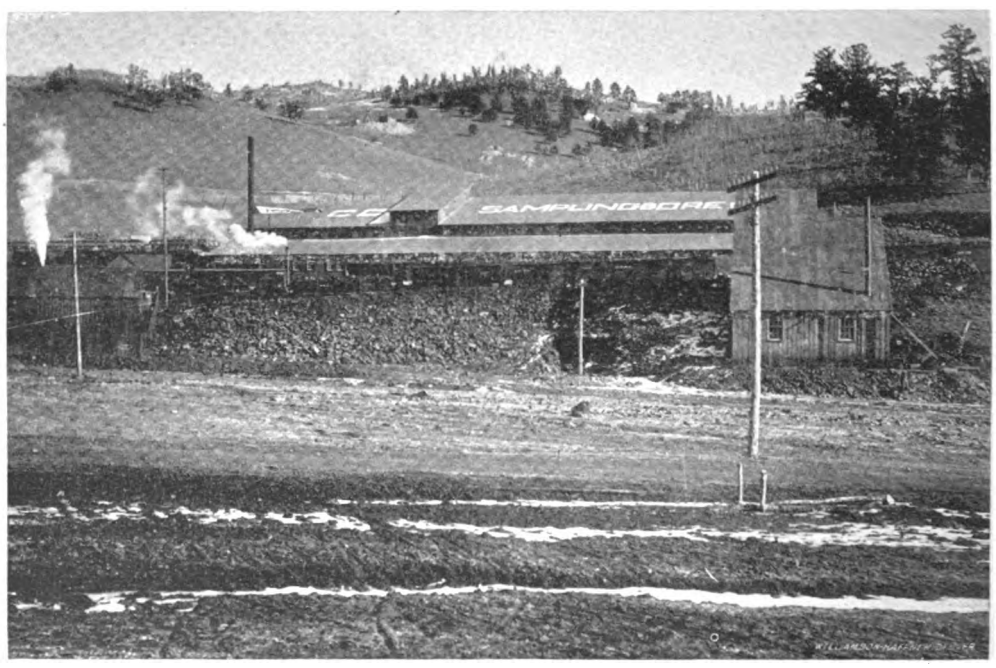
RICHARD PEARCE

It is hardly worth while to reproduce the paper by Dr. Richard Pearce entitled, "Occurrence of Tellurium in Oxidized Form Associated with Gold," read before the Colorado Scientific Society, in Denver, April 1, 1895, as it is too technical for the general reader. He was not present at the special July meeting, his first visit to the district being in November last. As the manager of the Boston & Colorado Smelting Company, whose extensive works are at Argo, near Denver, Dr. Pearce has long been recognized as one of the foremost metallurgists and geologists. He is ultra conservative in giving expression to his views in regard to the worth of new mining regions, and for this reason the following comment on Cripple Creek, after his first visit, is of more than ordinary moment.

"I had only one full day to spend in the camp, and therefore I could not give as much time to an examination of the whole district as I would have liked, but I have been well acquainted with the ores from a smelting point of view for years. I studied the district through the ores received at the smelter, and my visit to the camp was to find out whether the opinions I had formed after a study of the ores would be borne out by a personal inspection. I can say that the few remarks I have made regarding the district have been fully corroborated by a personal inspection.

"I believe the camp is destined to improve from year to year and to continue. I am fully impressed with the permanency of the deposits, and there is no doubt in the world that the deposits come from below. It will be a steady producer for years. What impressed me most was the area, taken together with the value of the ores. It differs from other districts in the extent of the deposits. The ore, generally speaking, is a telluride, and while it is found in Transylvania and in other portions of this state besides Cripple Creek, it is in small deposits, but in Cripple Creek it occurs on an enormous scale and in a wide area. What the extent of the area is would be hard to conjecture. About a quarter of a mile away from the eruptive porphyry district there is another district purely of granite, from which I had some remarkably rich specimens.

"I had not the time to examine the workings of the mines, but I saw the ores and looked over the dumps of the



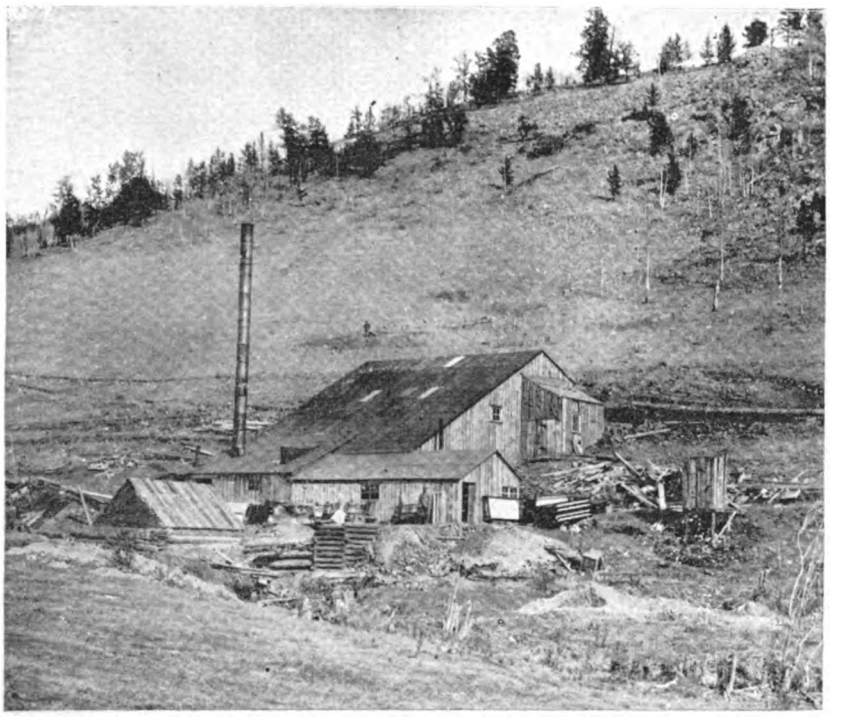

CRIPPLE CREEK SAMPLING AND ORE COMPANY

most important mines. I visited the Independence, and the Portland extension, and the Anaconda, and one or two mines on Raven Hill. I was much interested in the Anaconda, it being the oldest mine of any size in the district, and I saw some beautiful specimens of telluride ores at the Elkton.

"One great feature of the camp is the immense quantities of low grade ores to be found. The works at Florence, where fuel is much cheaper than in camp, and where the wages are slightly lower, are treating considerable quantities and intend to double their capacities, I understand, and there are some well equipped mills in camp, but there is still a great quantity of ore not touched.

"If water could be found in abundance the low-grade ores could be treated with profit. I have no doubt that from year to year, with more economical processes of treatment, the amount of this class of ores which will be handled in the camp will greatly increase. There should be an increase in the number of mills and in their capacity in the near future, and there will always be a large quantity of ores that must be sent to the smelters.

"My belief is that it is essentially a telluride camp, and the developments have demonstrated that there is not any depreciation in the ores with depth. I have no doubt that the area will extend. There is scarcely an outcropping, as is the rule in other camps, and one must dig trenches to discover the vein. But Cripple Creek can be depended on for many years to come, and the output will continue to grow. I went there with high expectations, but found it to be altogether beyond what I had ever imagined. It is prosperous in every way, and new discoveries are being recorded every other day, and the older mines are doing well, if not better, with depth."



GOLD GEYSER MILL, CRIPPLE CREEK

# The Prospector---Prospects and Mines

HARRY A. LEE
State Commissioner of Mines.

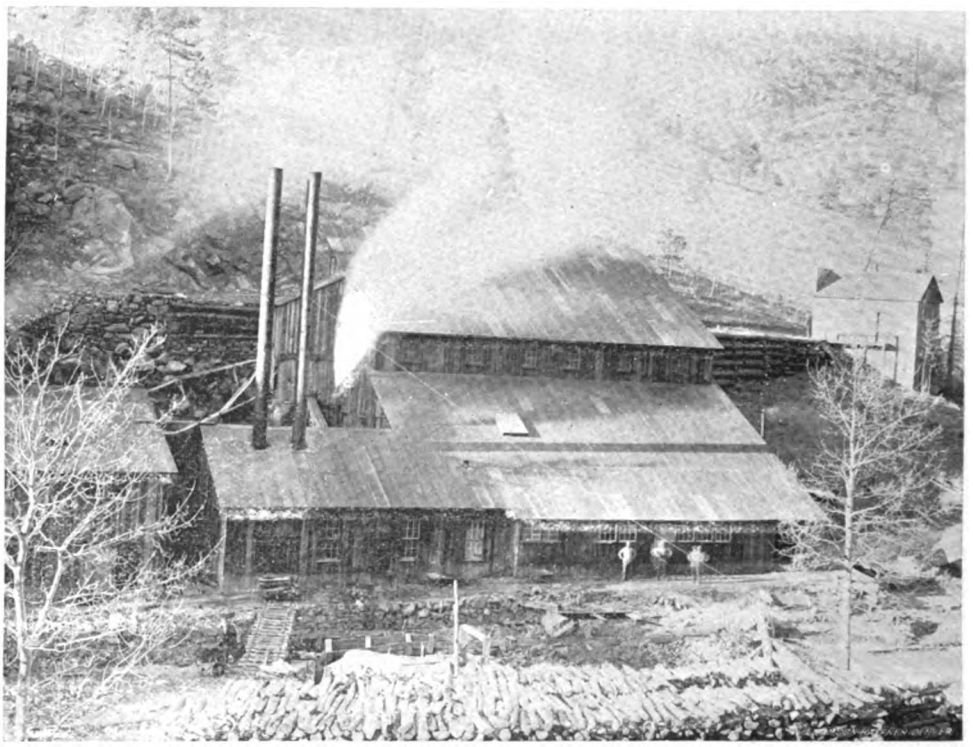
If the past be taken as a criterion for the future, the greatness of Colorado's mineral resources is yet unknown, and the mining industry of the State is in its infancy. The forerunner of Colorado civilization, viz, the prospector, has been trailed from Pike's Peak to Cherry Creek, Clear Creek to Gilpin County, California Gulch to Washington Gulch, Boulder County to the San Juan, Lake County to the Gunnison, and back to Pike's Peak again.

While the history of Colorado records many achievements, one of the greatest monuments to the patience, perseverance and persistency of the prospector, is what is now known as the Cripple Creek district. Since the excitement at Pike's Peak early in the history of the State, this district has been the occasional abode of the prospector. The prospectors who made their homes at Colorado Springs, after spending the summer season in the new fields, would drift into the Cripple Creek district for a few months in the winter season and continue their research. Each winter produced its bubble of excitement, which was soon forgotten and accepted in the light of an old story. It is a fact that the Cripple Creek of to-day is a monument to the Colorado Springs prospector and the Colorado Springs enterprise. It is also a fact, however, that the prospector had harder work to convince his home people that he had something worthy of investigation, than was common to his lot. The first practical demonstration of values was made by the prospector, and a great change followed. Propositions for aid in development before scorned, were now eagerly sought after. The untiring energy displayed by the prospector of this district, in soliciting financial assistance prior to demonstrating values is worthy of comment, if the number of people who to-day bemoan the loss of fortunes by not accepting the prospector's propositions, and getting in on the "ground floor," can be accredited.

The first excitement resulted in a scramble for territory and considerable development. The results were not very satisfactory, and many who deemed they had fortunes within their grasp left the field disgusted. A portion remained and continued work with very satisfactory results. With more extended exploitation followed

a better understanding of the geological formation and the manner of ore occurrence. Strike succeeded strike. Those who had abandoned the camp returned, and the excitement of a few years ago is forgotten in the busy whirl of to-day.

In the number of producers proportioned to the amount of development done, Cripple Creek district excels any camp before discovered in the State and possibly in the world. It does not follow that all prospects will develop into paying mines. In area the district already exceeds the expectations of the most sanguine. It will doubtless extend still farther, but it it well to bear in mind that there is a limit to the boundary. The tendency of the present time is possession of any mining stock bearing the name of Cripple Creek or that vicinity. Many good stocks exist, and may be had at fair prices. The best interests of legitimate mining and the ultimate welfare of the district demands, that the placing of stock upon the open market, the value of which is entirely prospective, should be deprecated. The enterprise of this camp, the State press, and the various mining exchanges have kept the public well advised as to the actual conditions and values. So thoroughly and conscientiously has this been done that no legitimate investor need be deceived. To those who enter the mining arena and invest their money as a "flyer, or a gamble," little can be said. Having determined in their own minds to gamble, warnings are of no avail. If successful, which may be among the possibilities, it will demonstrate the superior wisdom of the buyer or gambler. If unsuccessful, it will prove to *his* mind, at least, that mining is an unsafe business.

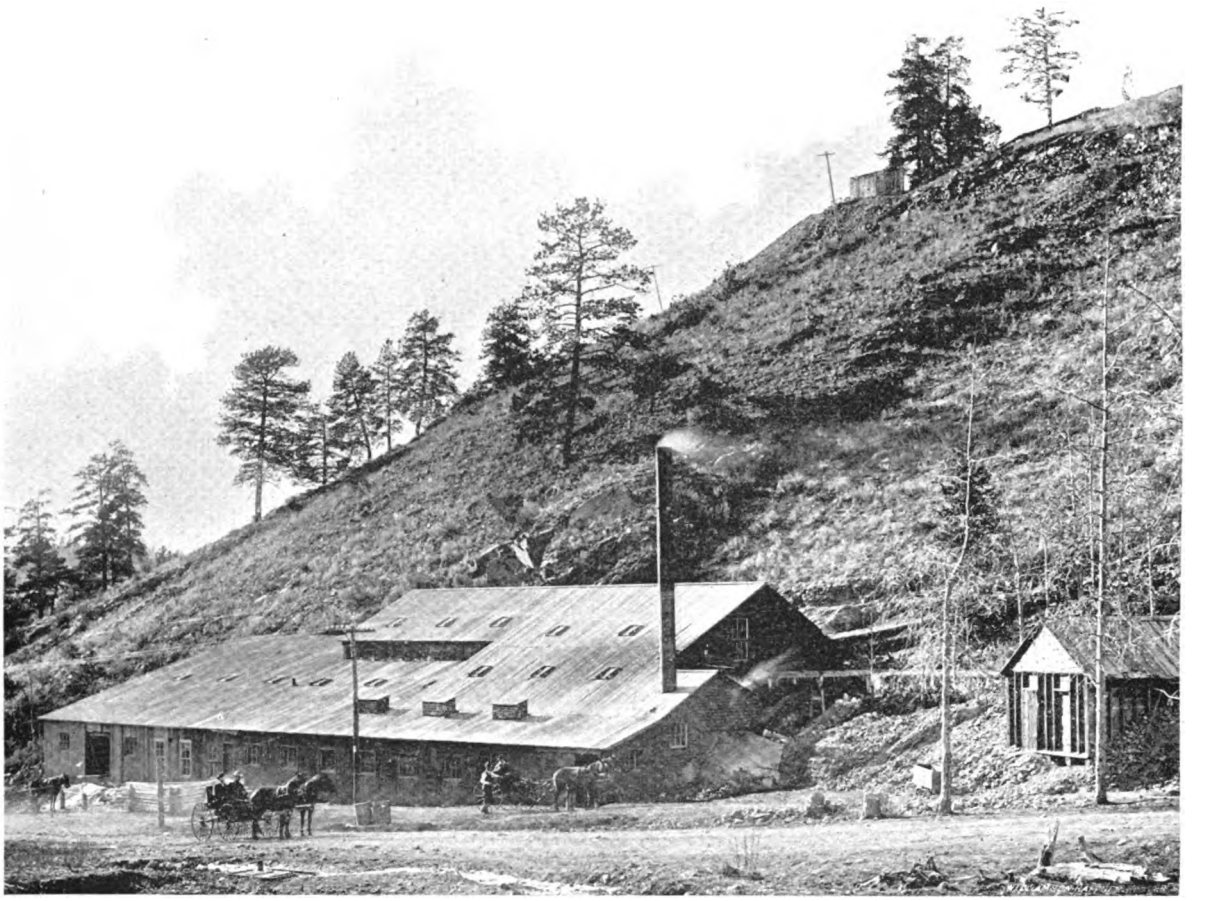


GOLD AND GLOBE MILL, CRIPPLE CREEK

In addition to the high percentage of producers in the Cripple Creek district for the amount of exploiting done, the gold produced is exceptionally high grade, some being worth as much as $20.25 per ounce, which is unusually fine. The district produces a large amount of high grade ore in the form of tellurides. This character of ore is much sought after and a small quantity yields large cash returns. Eventually the greatest commercial value of the district will be found in what is now termed the low grade ores. A number of reduction plants have already been constructed and are being successfully operated. Plans for construction now known to be under consideration will by next summer care for a tonnage of from 750 to 1,000 tons per day. Even this will prove inadequate to the demand, for with present development there is no doubt of the ability of the large mines alone to produce this amount of ore. With ample milling facilities it will be found that ore having a value as low as $8 to $10 per ton will be mined and treated at a profit. The great importance of this to the district, and the great value to the owner, to be able to develop property with this grade of ore, cannot be overestimated. Finally the frequency of ore occurrence, the strength of ore bodies, demonstrated by actual development in various places, fully establishes the permanency of the mines in this district.

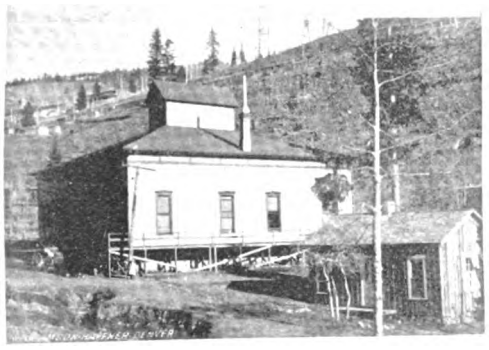
# Achievements of the Mines

AN effort was made to obtain data from the smelters and other reduction plants, showing the number of tons of ore treated each month and the number of ounces of gold extracted therefrom during the first eleven months of 1895, that would materially add to the completeness of this narrative. There could be no more forceful object lesson than a presentation of these figures, particularly as nothing of the kind, up to date, has been attempted. Unfortunately it was necessary that this book should go to press in the first days of December, as a large portion of the edition was subscribed for on condition of the delivery of the copies at least five days prior to Christmas. With two exceptions, the smelters, when asked for the desired information, replied that the request could not conveniently be complied with until the closing days of the year, when the figures will be made public. As it is thus impossible to give the ore record for the district in precise detail, some general facts must suffice.



HARTZELL MILL, ANACONDA, CRIPPLE CREEK *Blue Bell Mine*

The winter of 1894-95 was a discouraging period in the annals of the development of the mines. In June, 1894, the memorable strike terminated and for some time the owners of properties showed but slight haste in resuming active operations. Very little systematic prospecting was attempted until the closing weeks of the year, and no new producers appeared on the list of regular shippers. Matters remained in this unsatisfactory condition as 1895 was ushered in. For January the gold yield was about $350,000, while most of the many new finds chronicled proved later to be but small pockets—some exclusively confined to scenery—a series of delusions and disappointments. Still more finds were recorded during February, and, although the newspapers made capital of them, the great majority of onlookers winked the other eye, confident that these would prove of the same brand as those of the few months previous. Happily, in the main, the local press was correct, and from the latter part of February, surprise has followed surprise in rapid order. Gold Hill was the first locality to attract special



ANACONDA SCHOOL HOUSE

attention, and the Anchoria-Leland territory has the distinction of furnishing the first impetus to renewed exploration in all portions of the district. These ventures have been generously rewarded, there being a higher percentage of discoveries of paying ore than is to be found in the history of other fissure vein gold fields.

It was not till March that the monthly output began to show a substantial increase. Probably not less than $425,000 was produced in that month. Since then the yield has steadily climbed, reaching the maximum in October, in which month the million dollar mark was overtopped. While there was a greater tonnage of ore mined in November than in the month previous, it was not all marketed, due to the fact that the smelters raised the treatment tariff from ten to fifteen per centum. Even at the higher charges the smelters are not anxious for the silicious Cripple Creek ores, as they are receiving an abundant supply of more desirable furnace products. Moreover, it is given out that a still further increase in the schedule of treatment of silicious ores is to go into effect for 1896.

Many enthusiasts place the 1895 yield for Cripple Creek at $12,000,000 to $15,000,000. They are either novices in regard to the district, or those who simply throw out grandiloquent allegations without a second thought as to accuracy. For the first eight months of 1895 the gold product was not more than $4,000,000. The yield for the remaining four months will be found to be a little larger than the total from January 1st to the

EQUITABLE BUILDING. THE HOME OF DENVER'S SECOND MINING EXCHANGE

CRIPPLE CREEK STORES

end of August. When the official figures of the gold product of the country for 1895 are all compiled—and scaled down as the United States Mint is in the habit of doing—there will be placed to the credit of the camp in the neighborhood of $8,000,000.

Fully half the treasure for the last calendar year came from two properties on Battle Mountain, the Independence and the Portland. There is every reason to believe that their yields will increase rather than diminish in 1896. Gold Hill will furnish a candidate for first position—the Anchoria-Leland—for the new year, the sixth in the life of the camp. Raven Hill's gold product has not been helped out during the last dozen months in any considerable degree by its great mine, the Raven, which gave the name to this important locality. The property has been practically idle owing to a pending sale, which is now consummated, and hereafter this magnificent property will be energetically and systematically worked. Mr. Hamilton Smith, the noted London expert, has expressed the opinion that the Raven fissure is yet to prove the mother vein of the district. Be that as it may, it is a remarkable storehouse of treasure. The writer hazards the forecast that the Independence, Portland, Anchoria-Leland and Raven, united, in 1896 will contribute to the world's gold supply an amount equal to the total production of the entire region the previous year.

During the last five weeks the ore output has been 700 tons a day. This yield not only can be steadily maintained, but from developments already accomplished, can be considerably augmented without overtaxing the reserves. In January, 1895, the output was under 300 tons a day.

Various estimates have been made of the average value of the ore, per ton, shipped during the past twelve months. The figures generally accepted are $60 or $65. The Omaha and Grant Smelter, at Denver, has probably handled more Cripple Creek ore than any of its competitors, and the average metallic extraction was in excess of $78 a ton. Many will be surprised at this record, which is here made known for the first time.

In the past, fully nine-tenths of the gold produced was obtained from shipping, or smelting, products. For the first two years of the life of the camp a $50-ore was the lowest that could be profitably marketed in this way. To-day, owing to convenient railroad transportation and other causes, a $25-ore is a remunerative smelting product, and even $20-mineral, now and then, during the past year, has gone to the smelters. Ordinarily, however, anything below thirty dollars a ton can best be treated nearer the mines. For every ton of shipping ore there are from twenty to fifty tons of rock mined carrying from $8 to $30 a ton in gold. The enlarged future production of the region is to come from the mining of this vast store of treasure; a problem already solved through the medium of chlorination or cyaniding. The summer of 1896 will witness reduction plants in successful operation capable of treating daily 650 tons of mineral of th s character, and by January, 1897, this treatment capacity will be fully 800 tons. Hitherto not to exceed 250 tons in 24 hours, under the most favorable conditions, has been thus treated. Here is an increment to the production that should be accorded due consideration.

Most of the remarkable uncoverings of treasure in 1895 were made by lessees, and this method of carrying on mining operations has brought development forward in a wonderful degree, contributing fully a fourth of the gold product of the last twelve months. A word on the leasing system will be appreciated by many of the readers of these pages. When the owners of claims have not the means, or, as is frequently the case, lack sufficient faith in the worth of their ground to assume the risk and cost of development, miners are readily found who will take leases on claims, or parts of claims, for periods varying from six months to two years, paying the owners royalties of from ten to thirty per centum on the returns of all ore marketed. In this way the owners incur no expense and frequently have valuable producing mines opened, which they operate at profit on the expiration of the leases.

Another feature meriting a word in commenting on the achievements of the mines is the time required in effecting suitable surface plants of buildings and machinery to economically handle large ore tonnages after rich rock in quantity has been proven. The output of a number of the leading mines was greatly curtailed in 1895 on this account; notably the Portland, Anchoria-Leland, Gold King, Rebecca, Moose, Elkton, Rubicon and others.

Prior to last spring Cripple Creek was known as a dry district. With the exception of surface water in the spring and early summer no annoyance or expense was incurred, worth mentioning, from this source. This is no longer true. In the changed condition from dry to wet workings fortune has smiled on the district, as the richest mines, the Portland and Independence, on Battle Mountain, are situated at the lower elevations and their workings are the deepest of the producing area. These mines have been obliged to put in pumps and at present handle water that otherwise would be a source of cost and vexation to properties above them. The expense is an insignificant tax to the two foremost bonanzas, though it would be burdensome to other mines.

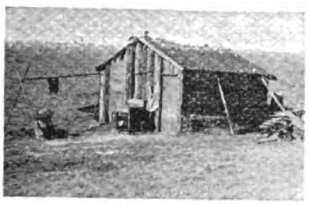
In the outlines of companies that follow, brief sketches are given of the larger portion of the mines. Many excellent properties, however, are owned by individuals, rather than by incorporated companies, concerning which the public is given but little information. While quite a number of this class merit notice, they must be

passed over, though one, the Independence, is so remarkable as to deserve a paragraph. An account of this mine, in a semi-technical way, is given in Mr. Charles J. Moore's paper read before the Colorado Scientific Society. The following more familiar account was prepared by the writer for one of the several small manuals of the district recently issued:

"The Independence is to-day the most noteworthy gold mine of the Western Hemisphere, if not of the world. It is a phenomenon and the plain, hard, unadorned facts told of its resources sound like Munchausen tales. There appear to be no boundaries to the pay ore below 300 feet, as no matter where the drifts are run, whether in eruptive rock or granite, they tell the same story of gold, gold, and still more gold everywhere. The vein is unique and there is nothing known in the way of valuable ore masses with which to compare it. Now in granite and now in porphyry; the best idea is perhaps conveyed by saying that it is in the uncertain area dividing the two formations—porphyry to the north and granite to the south—one mingling with the other, tying the country rock all up in a tangled snarl. Possibly gold telluride was employed as a sort of cementing material; at


CHAMBER OF COMMERCE, DENVER. HOME OF THE BOURSE

all events it was apparently carelessly spilled around in quantities ample for this purpose. Here are a few simple statements of the mine's development and production: The main shaft is sunk to a depth of 415 feet, and the 400-foot level is the scene of most extensive exploitation, drifts being run by the aid of power drills on a systematic plan to thoroughly test the ground. In the 300-foot level the first marvelous gold depository was exposed. Here was found a chamber from eight to thirty feet wide, of sylvanite that runs from $250 to several thousand dollars a ton. For two months the average ore shipped without sorting returned over $400 a ton. During the first four months of this present year of 1895, more than $650,000 was produced, and prior to January 1st, the yield, all told, while the mine was being opened up, as it were, exceeded $1,500,000. At present, the sole owner, W. S. Stratton, has curtailed his Independence income to $120,000 a month, and hopes to be able to still further reduce it, as more wealth is coming from this rock-bound safe depository than he has any earthly use for. On a most conservative basis it has been calculated that there are gold reserves blocked out of $2,500,000, and in addition, exploitation in all directions is daily augmenting this total."



CABIN, GILLETT

CRIPPLE CREEK STORES

WATER WORKS

# Outlines of Companies



MANY of the readers of these pages own shares in one or more companies carrying on mining operations in the Cripple Creek Gold Fields, while others are liable to, and it will undoubtedly be of interest to outline their salient features. Brief sketches follow of all the companies, up to date, the shares of which are traded in on the different exchanges, as well as many of less consequence that are inquired about from time to time. There are in the neighborhood of 950 incorporated companies organized to operate in the Cripple Creek district, proper, or within the limits of the Greater Gold Belt adjoining it, though there are fewer than 200 whose shares are bought and sold in Colorado. While ordinarily the companies are capitalized at generous figures, prices rule very closely according to the worth of the holdings and the character of the management. Shares in a prospective venture, ground unpatented, risk extra-hazardous, sell from $2 to $8 per 1,000-share lots. From this, the lowest round of the ladder, the steps upward are of varying lengths, to stocks above their par value. In each instance the speculator can readily ascertain exactly what he is purchasing. To further protect investors, arrangements were consummated in the first days of December to register the more desirable active stocks with a responsible financial institution, the International Trust Company, which has established quarters in Colorado Springs and in Denver, so that any possible over-issue of shares will be prevented. In the past, without this desirable system of checking, there have been only in rare instances cases of excess stock issues, for which the watchfulness of the reputable brokers of Colorado Springs is to be accorded due credit.

MINING EXCHANGE BUILDING, DENVER

A Cripple Creek full lode mining claim is 1,500 feet by 300 feet, a fraction more than ten acres. Often owing to conflicts with overlapping claims and other causes, when a United States patent is secured, a claim has its dimensions greatly reduced, occasionally securing title to less than an acre. Sometimes a group of adjoining claims belongs to one company, and in other instances several widely separated claims form a company's holdings. Of the 950 companies, fully one-half have made no serious attempt to develop their ground, and many have hardly a shadow of a title to the claims they profess to own. A few companies of prospective worth are not given, as sufficient particulars relative to them were not obtainable.

The topographic map, entitled, The Cripple Creek Gold Fields, at the front of the book, gives quite a correct idea, not only of the Cripple Creek district proper, but of the present limits of the Greater Gold Belt. No attempt has been made to note the location of even all the properties of some consequence, particularly in the central area, where it would be impossible to give this information intelligibly on a map of this scale. Rather the intent has been to convey a general idea of the territory, and the relative situation of the different hills and small pockets, while the properties indicated serve as ties for others near by.

ADDIE C. MINING CO.—Incorporated 1893; 500,000 shares, par $1. Principal office, Denver. F. C. Kearney, president; C. C. Lunt, secretary. Annual meeting, first Monday in February. In treasury, 50,000 shares; no debt.

Patented claim: Addie C., 10 acres, on Mineral Hill. Owns, also, half Charles and half Harry, full claims, on Tenderfoot. Addie C. is bonded for $25,000 to August, 1897. This ground has shown some promising ore, but not in quantity.

ADDIE E. MINING AND MILLING CO. — Incorporated, March, 1892; 1,250,000 shares, par $1. Principal office, Colorado Springs. E. J. Eaton, president; J. E. Rockwell, secretary. Annual meeting, first Monday in June. In treasury, 250,000 shares; no debt.

Patented claims: Hill Top, Big Chief, Little Chief; 30 acres in a group, on Big Bull Mountain. A vein is exposed in granite, showing low grade. The company is advancing development.

ÆTNA GOLD MINING CO.—Incorporated November, 1895; 1,500,000 shares, par $1. Principal office, Colorado Springs. F. C. Goudy, president; Charles R. Burger, secretary. Annual meeting, first Tuesday in December. In treasury, 500,000 shares; $2,000; no debt.

Claims: Bourse, Ethel H., Marguerite, Oro Fino, Brazos, Mariposa, Moonshiner, Overland, Old Year, New Year, Black Hawk, Red Cloud; 117.68 acres, on east side of Nipple Mountain, on which patents are in progress, A recent enterprise pushing exploration in the southern part of the greater gold belt.

AJAX GOLD MINING CO.—Incorporated May, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. J. L. Sallee, president; R. A. Christy, secretary. Annual meeting, third Tuesday in March. In treasury, 325,000 shares; no debt.

Patented claims: Apex, Mammoth Pearl, Monarch, 21 acres on Battle Mountain. Patent is in progress on Champion, 2½ acres, on Battle. Several veins proven with stringers of good mineral. Further development will be advanced by lessees.

ALAMO MINING CO.—Incorporated April, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. John W. Proudfit, president; F. J. Hobbs, secretary. Annual meeting, second Tuesday in January. In treasury, 15,000 shares; no debt.

Patented claims: White Elephant, Fraction No. 1, Happy Day, Little Huckleberry, 25 acres in one body, on Gold Hill, west of Anaconda ground. There are eight leases being worked, which run from May, 1896, to March, 1897. Much serious prospecting is evident from numerous shafts and tunnels. There seems to be substantial foundation for the advance and firmness of these shares.

ALBEMARLE GOLD MINING AND MILLING CO.—Incorporated December, 1895; 1,000,000 shares; par $1. Principal office, Colorado Springs. B. P. Anderson, president; W. H. Metz, secretary. Annual meeting, first Monday in January. In treasury, 200,000 shares; $1,800; no debt.

Patented claim: Black Walnut, 9½ acres, on Rhyolite Mountain. Amazon, 8 acres, on Rhyolite, is being patented. Clover Leaf, a full claim on Aspen Mountain. A good vein is exposed on Black Walnut.

ALICE GRAY GOLD MINING CO. — Incorporated November, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. R. T. Fahey, president; John Bridge, secretary. Annual meeting, last Thursday in November. In treasury, 250,000 shares; $500; no debt.

Claims: Five on Straub Mountain, one of which is patented, 36 acres all told. Development is being advanced by the company with very hopeful showings.

ALLIANCE GOLD MINING CO.—Incorporated March, 1895; 500,000 shares, par $1. Principal office, Pueblo. O. H. P. Baxter, president; L. S. McLain, secretary. Annual meeting, March 25. In treasury, 50,000 shares, no debt.

Patented claim: One-half Gold King, on Gold Hill, 5 acres, a part of which is leased to January next. This ground is surrounded by shipping mines and is also a fair producer.

ALPHA GOLD MINING CO.—Incorporated November, 1895; 1,000,000 shares, par $1. Principal office, Denver. P. Reynolds, president; C. A. Stern, secretary. Annual meeting, third Wednesday in November. In treasury, 450,000 shares, no debt.

Patented claim: Alpha 9½ acres, on Squaw Mountain. Other desirable territory is being acquired. A good vein opened. Of the many new incorporated enterprises this is one of the most alluring.

ALPHA TUNNEL AND GOLD MINING CO. — Incorporated September, 1895; 2,000,000 shares, par $1. Principal office, Cripple Creek; general business and transfer office, Boston, 15 Court Square. Amos W. Downing, president; Wm. H. Damon, secretary. Annual meeting October 11.

Owns the Alpha tunnel and tunnel site under Gold Hill, an enterprise of which little is known and none of the stock has so far been handled on this market.

ALTA MONT GOLD MINING CO.—Incorporated October, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. William A. Otis, president; James C. Connor, secretary. Annual meeting, first Tuesday after first Monday in November. No treasury stock; no debt.

Patented claims: Hill Top, Hill Top Nos. 2 and 3, Sarah Bell, Laurence Worden, on Tenderfoot, 39.3 acres; formerly the property of the Raymond Gold Mining Co. Worth of the claims being tested by lessees.

AMARILLO GOLD MINING CO.—Incorporated September, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. F. G. Doyle, president; K. McMillan, secretary. Annual meeting, second Tuesday in September. In treasury, 200,000 shares; no debt.

Claims: Amarillo, Texas, about 17 acres, on Iron Mt.; Dinkey, probably 9 acres, on Mineral Hill; Annis K., 9 acres, on Tenderfoot Hill; all in process of patent. A promising vein opened with encouraging amount of medium grade mineral.

AMAZON MINING CO.—Incorporated April, 1892; 600,000 shares, par $1. Principal office, Colorado Springs. J. F. Burns, president; F. G. Peck, secretary. Annual meeting, . No treasury stock; no debt.

Patented claims: Providence, 6 acres, in town of Victor. Also owns Confidence, 8 acres, on Battle Mountain and Colorado City, 6 acres, on southeast slope of Bull Hill; on both of which patents are under way. Confidence is leased to October, 1896, and Colorado City to September, 1896. The latter has shipped considerable ore.

AMERICAN CONSOLIDATED MINING AND MILLING CO.—Incorporated September, 1892. Principal office, Colorado Springs, John J. Cranmer, president; Naomi J. Altman, secretary. Annual meeting October 11. In treasury, 40,000 shares; no debt.

Patented claim: Bessie Y, 4¼ acres, on Squaw Mt. Claims in process of patent: Black Diamond, probably 10.3 acres; Orbit, 8½ acres, both on Squaw Mt.; Gracie Darling, 3½ acres, on Battle Mt.; Prospect, 10.3 acres, on Big Bull Hill; Last Stake, 8½ acres, in the town limits of Victor; Nelly Bly, 8.5 acres on Beacon Hill. Black Diamond and Gracie Darling leased to April, and Orbit to June next; Prospect to January, 1897; Nellie Bly to June, 1897. An excellent selection of widely separated holdings.

ANACONDA GOLD MINING CO.—Incorporated June, 1892; 1,000,000 shares, par $5. Principal office, Denver. D. H. Moffat, president; R. H. Reid, secretary. Annual meeting, first Monday in August. No treasury stock; debt, $30,000.

Patented claims: Anaconda, Superior, Grand View, Excelsior, Rustler, Puffer, Grover Cleveland, Oro Fino, Lone Star, Lone Star Nos. 1, 2 and 3, Kittie M., Little Mac No. 2, Free Milling, No Name, Ivy Wild, Napoleon, Sarah B., Two Fractions, 145 acres in a connected body, on Gold Hill. The mammoth Anaconda vein has been traced for three quarters of a mile, varies between walls from 4 to over 30 feet, and contains a vast store of low-grade mineral. Numerous seams of rich ore have yielded many carloads. At Anaconda, above the track of the Florence and Cripple Creek Railroad, is the mouth of the main working tunnel, 2,000 feet long, the last 1,400 feet on the vein; where the tunnel meets the vein connection with the upper workings was made, a vertical distance of 440 feet. Main tunnel is being advanced by power drills, which are also employed for systematic and extensive exploration work. There are at least two veins parallel to the Anaconda which can be relied upon for a handsome ore out-

put. Recently a number of shipments of choice high-grade have been forwarded to the smelters and the indications are that these will be maintained. The medium and low-grade products are treated at the Metallic Extraction plant—cyaniding—at Florence. Until the additions now in progress are completed only 50 tons daily can thus be marketed. The mine can readily, without overcrowding, output 200 tons a day of mineral carrying from $9 to $20 a ton. Under different regimes the present Anaconda territory has contributed $400,000 to the credit of Colorado's gold yield.

ANACONDA EXTENSION GOLD MINING CO. — Incorporated July, 1892; 1,000,000 shares, par $1. Principal office, Denver. O. H. P. Baxter, president; John H. Olmes, secretary. Annual meeting, July 22. In treasury, 25,000 shares, no debt.

Patented claim: Fairview, on Gold Hill, 7 acres. More or less prospecting has been done. The numerous remarkable discoveries during the last six months in this neighborhood lend interest to this ground.

ANCHOR GOLD MINING AND MILLING CO. — Incorporated May, 1894, 500,000 shares, par $1. Principal office, Pueblo. L. C. Weyand, president; Geo. F. Dayton, secretary. Annual meeting, third Monday in August. In treasury, 93,900 shares; no debt.

Patented claim: Maggie, on Tenderfoot, 6½ acres. Patent is in progress for Edith May, Consul, Doctor, Virginia and Anchor Mill site, between Straub and Nipple Mountains, 45 acres. Maggie has a vein of promise, and there are good showings on the other ground.

ANCHORIA-LELAND MINING AND MILLING CO.—Incorporated June, 1892; 600,000 shares, par $1. Principal office, Colorado Springs. Irving Howbert, president; C. W. Howbert, secretary. Annual meeting, second Tuesday in May. No treasury stock; no debt.

Patented claims: Anchor, Anchor No. 2, Lillian Leland Midland, Conundrum, Chance and First National; 39 acres on Gold Hill. Recently Cotton Tail and City View, 5 acres near the original ground, were purchased, on which patents are under way. All but 5 acres are worked under leases that expire from February to May 1, 1896. A year ago this territory was looked upon as of doubtful value; to-day it is a storehouse of treasure. There are five separate veins, from two of which wonderfully rich ore in quantity is being taken. In the closing days of November the famous Chance vein again emphatically demonstrated the appropriateness in the name "Gold Hill." At depths of 200 and 250 feet sylvanite and free gold were found in quantity. Between walls the vein is five feet, and four-fifths of all mineral broken is high-grade smelting ore, much of it running in dollars to the pound. In all the workings of this territory, development has shown a constant improvement as lower horizons were reached. When the books are closed for 1896 Anchoria-Leland will have a notable record among the big gold mines of the world. A year ago it was not numbered among the producers.

ANNIE GOLD MINING CO.—Incorporated November, 1895; 500,000 shares, par $1. Principal office, Cripple Creek. Chas. L. Tutt, president; Spencer Penrose, secretary. Annual meeting second Tuesday in April. In treasury 100,000 shares; no debt.

Patented claim: Annie, 7 acres, on Gold Hill. But little development accomplished. A recent incorporation. Its shares liable to spring into favor, due to the many uncoverings of bonanza ore near by.

AOLA GOLD MINING CO.—Incorporated September, 1893; 1.000,000 shares, par $1. Principal office, Colorado Springs. Herman Bruen, president; H. V. Wandell, secretary. Annual meeting last Saturday in August. In treasury, 25,000 shares; no debt.

Patented claims: Something Good, Gold Cup, on Raven, 5 acres. The former is leased to April 20, 1896. Though favorably situated, exploitation has so far failed to discover any considerable bodies of paying mineral. The signs are that by the time this book comes from the printer a far different story will be told.

APPIE ELLEN GOLD MINING CO.—Incorporated July, 1894; 600,000 shares, par $1. Principal office, Colorado Springs. J. E. McIntire, president; J. Straughan Hall, secretary. Annual meeting, last Wednesday in February. In treasury, 80,000 shares; no debt.

Claim: Appie Ellen No. 2, two acres, on Raven Hill, in process of patent. Though the area is small, it is a most desirable location. There is a vein from which some rich ore has been taken.

ARVILLA TUNNEL AND MINING CO.—Incorporated, September, 1892; 1,250,000 shares, par $1. Principal office, Denver. M. J. McNamara, president; C. D. Wood, secretary. Annual meeting, . In treasury, 20,000 shares; no debt.

Patented claims: Cactus, Clionian, Little Ella, Minnie, Lee, on Bull Hill, 31 acres. This ground is north and east of the Victor mine, and it will be strange indeed if it does not prove of value.

ATLANTA MINING AND MILLING CO. — Incorporated August, 1895; 1,000,000 shares; par $1. Principal office, Colorado Springs. W. J. Vickers, president; F. A. Morath, secretary. Annual meeting, . In treasury, 250,000 shares; no debt.

Claims: Final Success, White Fawn, on Little Bull Hill; American Girl, Union, on Galena Mountain; Keokuk on Cow Mountain. A new company testing the worth of sections heretofore unproductive.

ATLANTIC AND PACIFIC GOLD MINING AND MILLING CO.—Incorporated October, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. Frank Cotton, president; E. H. Hutchins, secretary. Annual meeting first Tuesday in November. In treasury 400,000 shares; no debt.

Patented claim: Lilly, on Big Bull Mt., 10 acres. Little Prince, Surprise, adjoining Lilly, about 17 acres, in process of patent; are other claims. Lilly is being worked by company. A vein big with promise has been uncovered.

BANKERS GOLD MINING AND MILLING CO. — Incorporated September, 1892; 1,250,000 shares, par $1. Principal office, Denver. E. H. Webb, president; G. G. Newcomb, secretary. Annual meeting . In treasury 32,000 shares; debt, $2,500.

Patented claims: Grouse, Shertloff and one-half of Star of Bethlehem, 18 acres on Bull Hill. An important asset is 580,000 shares of the capital stock of the Mineral Rock Mining and Milling Company. There are five leases that expire from December, 1895, to January, 1897. This ground has produced fully $20,000, and it is known that other large ore bodies exist in this territory.

BASIL DUKE MINING AND MILLING CO. — Incorporated September, 1895. Principal office, Cripple Creek. J. B. Hutchins, president; Warren Weaver, secretary. Annual meeting May 15. In treasury 300,000 shares, no debt.

Claims: Four, names not furnished, near base of Rhyolite Mt. Shaft 50 feet; tunnel 30 feet. A vein encountered carrying small bunches of ore. Interesting as an indication of the extension of the Golden Circle to the north.

BAY STATE GOLD MINING AND MILLING CO.—Incorporated September, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. John Williams, president; G. W. Logan, secretary. Annual meeting first Monday in November. In treasury 1,250,000 shares; no debt.

Claims: Aspen, Gillette, Delfina Nos. 1 and 2, northeast of Grassy station adjoining school section. A new enterprise, testing untried ground, with an encouraging outlook.

BEN HUR MINING AND MILLING CO. — Incorporated June, 1892; 900,000 shares, par $1. Principal office, Cripple Creek; transfer office, Colorado Springs. J. R. McKinnie, president; F. H. Pettingell, secretary. Annual meeting last Saturday in August. No treasury stock; no debt.

Patented claims: Optimus, east side of Gold Hill, 1.88 acres; Little King and Queen, west side of Gold Hill, 10.2 acres. Tejon, foot of Squaw Mt., 8.3 acres. Patents are under way for Enterprise, 6 acres, and Bon Ton, 9 acres, both foot of Squaw Mt.; Minnie H and Moss Back, summit of Globe Hill, 5.5 acres. There are four leases on Queen and one on Little King that expire April 1, 1896. Gold Hill ground is big with promise. Company is advancing development on Minnie H. and on the Squaw Mountain territory.

BIG HORN GOLD MINING CO.—Incorporated July, 1892; 1,250,000 shares, par $1. Principal office, Colorado Springs. Matthew Kennedy, president; H. V. Wandell, secretary. Annual meeting, last Wednesday in February. In treasury, 500,000 shares; no debt.

Claims: Big Horn, on Big Horn Mountain; Bovine, northeast of Cow Mountain; Amavit, near Beaver Park townsite; Gilt Edge, '92 No. 1, Bald Eagle, southeast of Cow Mountain; all full claims.

BLACKSTONE GOLD MINING CO. — Incorporated June, 1895; 800,000 shares, par $1. Principal office, Colorado Springs. H. Hutchinson, president; E. R. Whitmarsh, secretary. Annual meeting, second Tuesday in July. In treasury 200,000 shares; no debt.

Patent is in progress for Jamie placer, southeast slope of Bull Hill, 17 acres. Cog Road, Last Shot, Peak View, on Cow Mountain, 30 acres, are claims soon to be patented. Jamie placer is being developed.

BLACK WONDER GOLD MINING CO. — Incorporated December, 1894; 500,000 shares, par $1. Principal office, Colorado Springs. J. N. Kimzey, president; G. M. Carter, secretary. Annual meeting, second Monday in January. In treasury, 53,000 shares; no debt.

Patented claims: Black Wonder, Black Wonder No. 2, 10.9 acres, on Bull Hill, 800 feet south of Victor mine. There is a lease on five acres to August next, and the company proposes to develop the remainder of the territory.

BOB LEE GOLD MINING CO. — Incorporated January, 1894; 1,200,000 shares, par $1. Principal office, Colorado Springs. H. S. Ervay, president; W. G. McCall, secretary. Annual meeting first Monday in January. In treasury 50,000 shares; no debt.

Patented claims: Bob Lee, Little Joe, Solitaire, 15 acres together, on Tenderfoot Hill. Little Eva, on east slope of Bull Hill; Widow, Belle of the West and Golden Eagle, north of Grassy, are claims on which patents are not under way. At present no prospecting is in progress.

BOMBAY GOLD MINING CO. — Incorporated December, 1895; 2,000,000 shares, par $1. Principal office, Colorado Springs. A. A. Carnduff, president; H. H. Dorsey, secretary. Annual meeting, second Tuesday in December. In treasury, 500,000 shares; no debt.

Claims: Oneida Chief, H. D. S., Two Strike, Amelia, Julia Castle, Whistle, Badger, Gold Reserve, 93 acres on southern slope of Cow Mountain. Systematic exploration is to be speedily set on foot.

BONANZA CRIPPLE CREEK GOLD MINING CO.—Incorporated May, 1895; 50,000 shares, par $10. Principal office, Chicago. R. Modjeski, president; Henry Lubienski, secretary. Annual meeting, second Tuesday in June. In treasury, 14,000 shares; no debt.

Patented claims: Violet, Garland, 20 acres, on Straub Mountain. Maria, Bourgoyne, 20 acres probably, on Grouse Mountain, are in process of patent. Deepest shaft, 96 feet. Company is advancing exploration on Violet and Garland.

BONANZA KING GOLD MINING AND MILLING CO. — Incorporated July, 1895; 700,000 shares, par $1. Principal office, Colorado Springs. J. C. Manchester, president; M. J. Burgdorf, secretary. Annual meeting. January 31. In treasury 150,000 shares; no debt.

Patented claims: Bonanza King Nos. 1 and 2, 15 acres, on Tenderfoot Hill. Company prosecuting development. Deepest shaft 50 feet. Achievements to date are of no special moment.

BOSTON AND CRIPPLE CREEK GOLD MINING CO. — Incorporated April, 1895; 200,000 shares, par $1. Principal office, Cripple Creek; transfer and business office, Boston. Samuel Snow, president; Frederick Beck, secretary. In treasury, 30,000 shares; no debt.

Claims: Boston, Leonard C, Agnes, Ontario, Etta E, on Tenderfoot Hill, 27 acres in connected body, on which patent is in progress. Though the ground is not of proven worth, these shares have been boomed in Boston as of great intrinsic value. Exploration is now actively under way.

BOSTON-COLORADO CONSOLIDATED GOLD MINING CO. —Incorporated August, 1895; 1,300,000 shares, par $1. Principal office, Colorado Springs. Francis D. Pastorius, president; R. W. Griswold, secretary. Annual meeting, September 16. In treasury, 758,400 shares; no debt.

Patented claim: Midland, on Bull Hill, half acre. Claims in process of patent: Climax, Anna B, south slope Squaw Mountain, about 12 acres; First Chance, in Arequa Gulch, 4 acres. Other claims are Boston, Polaris No. 3, in Arequa Gulch, 5½ acres; Bandero, Medina, east slope of Bull Hill, 12 acres; Gold Belt, west of Kismet, 6 acres. Anna B is leased to October 1, 1896. Climax is leased and bonded for $4,000 to July 1, 1896. The company is working Boston. Treasury stock is to be devoted to securing other claims and in perfecting titles.

BROKEN HILL GOLD MINING CO. — Incorporated June, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. John E. Phillips, president; F. H. Pettingell, secretary. Annual meeting, second Wednesday in June. In treasury 90,000 shares; no debt.

Patented claim: Maggie, southern slope of Battle Mountain, 6 acres. Patent is in progress for Ram's Horn, on Globe Hill. The former is bonded for $20.000 to June, 1896. No uncovering of mineral has as yet been accomplished.

BUCKEYE GOLD MINING CO. — Incorporated October, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. A. T. Gunnell, president; E. S. Johnson, secretary. Annual meeting, October 21.

Claims: Hidden Treasure, Whale, about 15 acres, on Bull Hill, in process of patent. Ground in excellent neighborhood; more liable than not to prove valuable with energetic and well directed prospecting.

BUCKHORN GOLD MINING CO.—Incorporated July, 1892; 900,000 shares, par $1. Principal office, Colorado Springs. F. E. Robinson, president; F. P. Buck, secretary. Annual meeting, April 29. In treasury, 6,000 shares; no debt.

Patented claims: Last Chance, Cheyenne, Grass, on south slope of Bull Hill, 29 acres; Combination, Mule, on north side of Bull Hill, 18 acres; Whippoorwill, near top of Bull Hill, 3½ acres. Jeannette, on north side of Bull Hill, is an unpatented claim. The John Wolfe tunnel and tunnel site, on north side of Bull Hill, is in about 200 feet, on which work is being maintained. Whippoorwill is bonded for $40,000 to April, 1896; Grass for $30,000 to July, and Combination for $25,000 to February, 1896. During the past summer Whippoorwill has been added to the list of shipping mines.

BULL HILL GOLD MINING AND TUNNEL CO.—Incorporated October, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. E. D. Lowe, president; J. M. Harden, secretary. Annual Meeting, first Saturday in November. In treasury, 150,000 shares; no debt.

Claims: Shakespeare, Great West, east side of Bull Hill, patent under way. M. E. Coxey, on east side of Saddle Mountain. The Saddle Mountain tunnel and tunnel site is also a holding of the company.

BULL HILL GOLD MINING CO.—Incorporated October, 1895; 1,000,000 shares, par $1. Principal office, Aspen, Colorado. C. E. Palmer, president; E. L. Ogden, secretary. Annual meeting, second Tuesday in October. In treasury 500,000 shares; no debt.

Patented claims: Little Dan, Ogden, Fraction, 30.43 acres, on south slope of Bull Hill. A recent company. Development is to be advanced as speedily as may be. Ground admirably situated. Outlook flattering.

BULL HILL GOLD TUNNEL CO.—Incorporated September, 1893; 2,500,000 shares, par $1. Principal office, Denver. G. W. E. Griffith, president; George B. Mechem, secretary, Annual meeting, February 9. In treasury, 350,000 shares; no debt.

Holdings consist of a tunnel and tunnel site location; the tunnel penetrates Bull Hill, and is in 700 feet. Sufficient work has been maintained to make the title secure.

CALUMET MINING AND MILLING CO.—Incorporated January, 1892; 1,400,000 shares, par $1. Principal office, Colorado Springs. F. E. Robinson, president; J. Straughan Hall' secretary. Annual meeting, fourth Monday in January. Debt over $30,000.

Patented claims: Burns, Morning Star, two full claims on Bull Hill. Mining has mostly been confined to Burns, which joins the Pharmacist, where the vein has been tested a depth of 140 feet. Shipping mineral also brought to light on Morning Star. Production not less than $25,000. Early management of affairs was bad and the property was sold in June under trust deed. The company must redeem this present month of December or title cannot be recovered. A re-organization plan is underway with a fair promise of success.

CARBONATE HILL GOLD MINING AND MILLING CO.—Incorporated November, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. William Clark, president; C. H. Frowine, secretary. Annual meeting, first Thursday in December. In treasury, 300,000 shares. No debt.

Claims: Royal Nibs, on Carbonate Hill; Iron Springs, on Mineral Hill; New Years, T. and P., Hustler, on Copper Mountain. All full claims. It is proposed to do sufficient work for patents as soon as may be.

CARRIE S. GOLD MINING CO.—Incorporated September 1895; 2,000,000 shares, par $1. Principal office, Council Bluffs, Iowa; general and transfer office, Colorado Springs. J. M. Parker, president; Henry C. Hall, secretary. In treasury, 224,273 shares; no debt.

Claims: Pactolus, Pactolus Nos. 2, 3, 4, 5, Midas No. 2, Liberty, Old Dominion, Nos. 1, 2, James River, about 80 acres, on Carbonate Hill and Poverty Gulch, all in process of patent. This section is each week more highly thought of.

CHAMPAGNE MINING AND MILLING CO.—Incorporated March, 1894; 1,250,000 shares, par $1. Principal office, Colorado Springs. E. M. Couch, president; C. L. Johnson, secretary. Annual meeting, second Saturday in March. In treasury, 70,000 shares; no debt.

Patents are in progress on Deadwoods Nos. 1, 2, 3 and 4, at head of Poverty Gulch, probable area 35 acres. Deadwoods Nos. 2 and 4 leased and bonded to September 26, 1896, for $30,000.

CHARLEVOIX GOLD MINING CO. — Incorporated December, 1894; 500,000 shares, par $1. Principal office, Colorado Springs. W. H. Bacon, president; L. E. Sherman, secretary. Annual meeting, second Tuesday in December. In treasury, 84,360 shares; no debt.

Claims: Charlevoix, O. B. D., S. K., Springfield, 41 acres, on Barnard Creek, northwest of Cripple Creek City, on which patents have just been started.

CHICAGO-CRIPPLE CREEK GOLD MINING CO.—Incorporated June, 1892; 2,000,000 shares, par $1. Principal office, Pueblo. W. O. Rice, president; Geo. B. Mechem, secretary. Annual meeting, July 11. In treasury, 100,000 shares; debt $5,000.

Owns the oldest tunnel site in the district, under Globe Hill, starting from Poverty Gulch, and also four claims on Globe Hill. The tunnel has been driven 1,000 feet, crossing six veins. Has promise of proving a valuable property.

CHIMBORAZO MINING CO. — Incorporated July, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. John T. Voss, president; A. O. Downs, secretary. Annual meeting, August 1. In treasury, 200,000 shares; no debt.

Claims: First Chance, 3 acres, California, Leland Stanford, 8 acres; together on east slope of Bull, patent in progress on all. Ellis, 3 acres, Whistler, 3 acres, Concord, 3½ acres; on north slope Bull. Also two full claims on Big Bull Mountain. Deepest shaft, 35 feet.

C. K. & N. MINING CO. — Incorporated March, 1894; 1,250,000 shares, par $1. Principal office, Colorado Springs. W. H. Gowdy, president; D. H. Imler, secretary. Annual meeting, first week in December. In treasury, 150,000 shares; no debt.

Patented claims: Free Coinage, Kate, on Bull Hill, 10 acres. Raaler, on Beacon, a full claim, is being patented. The Bull Hill ground is bonded for $10,000 to September next. Development thus far has yielded no profitable returns.

C. O. D. GOLD MINING CO. — Incorporated February, 1891; 500,000 shares, par $1. Principal office, Colorado Springs. Charles. L. Tutt, president; Spencer Penrose, secretary. Annual meeting . In treasury, 47,000 shares; no debt.

Patents are under way for Rosario, Mollie Noble, Vindicator, C. O. D. No. 2, on Bull Hill, 17 acres. Berkley and My Choice, south of Grassy are located claims of the company. A tract 600 feet square, west end of C. O. D. No. 2, and Vindicator is bonded for $10,000 to December next. For further particulars see Vindicator Mining Co.

COLFAX MINING CO.—Incorporated March, 1892; 1,000,000 shares, par $1. Principal office, Colorado City. Squire Pond, president; T. A. Wintermitz, secretary. In treasury, 300,000 shares; no debt.

Patented claim: Mammoth, 10 acres, on Mineral Hill. Buffalo, Elk, Antelope, Blacktail, Moose, Twenty Seven, Jno. R. Wot, Caribou, Harry Owen, Deer, about 80 acres, on Mineral Hill. Several strong veins exposed.

COLORADO CITY AND MANITOU PROSPECTING AND MINING CO.—Incorporated November, 1891; 2,000,000 shares, par $1. Principal office, Colorado City. A. Z. Sheldon, president; John M. Jackson, secretary. Annual meeting, . In treasury, 120,000 shares; no debt.

Patented claims: Iron King, Little Ella, Red Rock, Genoa, Frank Lee, a 40-acre group, at head of Poverty Gulch; M. W. S., Little Allie, Two Earls, Good Luck, Tom Patterson, Buckhorn No. 2, on Bull Hill, 50 acres; Jeannette, Little Maggie, north of Grassy Gulch, 19 acres. Since securing titles but slight exploration has been accomplished. Portions of these ample holdings are in demand.

COLUMBINE GOLD MINING CO.—Incorporated May, 1893; 1,000,000 shares, par $1. Principal office, Colorado Springs. Warren Woods, president; F. M. Woods, secretary. Annual meeting, . No treasury stock; no debt.

Claims: Panther, Panther No. 2, Requa Monarch, Monte Cristo, Lady Emma, in Requa Gulch, 32 acres; Florissant, on Squaw Mountain, 8 acres. Title is secure, and receiver's receipt for land will be shortly issued. Bond for $35,000 on 500 feet of Panther No. 2, due in October, and remainder of claim leased to September next. Considerable exploration accomprished, so far affording no profitable returns.

COLUMBINE VICTOR DEEP MINING GOLD TUNNEL CO.—Incorporated July, 1893; 2,000,000 shares, par $1. Principal office, Colorado Springs. Warren Woods, president; F. M. Woods, secretary. Annual meeting, . In treasury, 350,000 shares; no debt.

Claims: M. K. and T., May B., Brunette, Zitella, Windy, Little Maggie, Rose Bud, Ethel, Newmarket, Bonanza, Thanksgiving, Hartford, Deadwood, in process of patent, 50 acres certain, and probably 75 acres; Mt. Rosa No. 2, New Year, Daphne Odoro, Junietta, Dorothy, Hattie M., Clemma E., Kate W., Columbine Nos. 1 and 2, all in a group, on Squaw Mountain; also, and the most important, the Columbine Victor tunnel and tunnel site under Squaw Mountain, from Victor on east to Requa Gulch on west, which is driven from both ends. M. K. and T. is leased to July and May B. to November next.

COPPER MOUNTAIN GOLD MINING CO.-Incorporated June, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. J. K. Vanatta, president; M. C. Meek, secretary. Annual meeting, second Monday in June. In treasury, 2,000 shares; no debt.

Patents are in progress on Minnesota, Anna C., Lost Lillie, Bill Nye, Artic, on north slope of Spring Creek, 47 acres. There are no conflicting claims, and title will be secured for entire area. Here is a choice lead-smelting proposition, the first discovery of that kind in the district. The vein is wide and strong, from 15 to 20 feet, between walls, dipping but a few degrees from the horizontal. Paying chute a foot thick; galena with gold and silver. Some 375 feet of development indicate a persistent vein.

CREEDE AND CRIPPLE CREEK MINING AND MILLING CO.—Incorporated March, 1892; 800,000 shares, par $1. Principal office, Colorado Springs. S. R. Bartlett, president; Charles Farnsworth, secretary. Annual meeting, first Monday in January. No treasury stock; no debt.

Patented claims: Little Mary, Ocean Wave, on Battle Mountain, 9.8 acres. Patent is under way on Hillside, on Gold Hill, 7½ acres. Ocean Wave is bonded for $50,000 to December, 1896. There are numerous applications for leases

on the other claims. Several claims at Creede have been abandoned, due to deep mining and the status of silver.

CRIPPLE CREEK CONSOLIDATED MINING CO.— Incorporated November, 1891; 2,000,000 shares, par $1. Principal office, Colorado Springs. H. S. Ervay, president; Horace H. Mitchell, secretary. Annual meeting, first Monday in December. In treasury, 18,000 shares; no debt.

Patented claims: Geneva, on Gold Hill, 10 acres; Dead Horse, May Queen, on Poverty Gulch, 20 acres; Colorado Boss Nos. 1, 2 and 3, Alpine, Viola, Andrews, on Squaw Gulch, 43 acres; American Girl, one-half Æneid, on Bull Hill, 11 acres; Little Montana, south end of Battle Mountain, 7 acres. For Florence, on Battle Mountain, 6½ acres, patent in progress. Geneva is leased to May; two leases on Dead Horse to May and October; May Queen leased to March; three leases on Colorado Boss Nos. 1 and 2 to July; Boss No. 3 bonded for $50,000 to October next; two leases on American Girl to August; two leases on Florence to April. All leases expire in 1896. No ground worked by company. Last spring Geneva became a shipper and its strong vein is one of the notable finds of the present year. May Queen has lately uncovered a rich vein.

CRIPPLE CREEK GOLD EXPLORATION CO.—Incorporated August, 1895; 1.800,000 shares, par $1. Principal office, Council Bluffs, Ia.; general and transfer office, Colorado Springs. Walter F. Crosby, president; Louis R. Ehrich, secretary. In treasury, 225,000 shares—$23,511; no debt.

Patented ground, 140 acres, at foot of Squaw and Battle Mountains, known as Lawrence townsite. Already several veins have been opened, and there is strong likelihood of more than one proving a mine of consequence. There is an intrusion of a phonolite dyke in the granite on this territory—a hopeful indication of paying mineral in quantity.

CRIPPLE CREEK GOLD MILLING CO.—Incorporated October, 1893; 1,000,000 shares, par $1. Principal office, Denver. J. R. McKinnie, president; H. W. Patterson, secretary. In treasury, 25,000 shares; no debt.

Patented ground: World's Fair placer, 24.74 acres, on Cripple Creek; site of Gold and Globe 40-stamp mill. A chlorination annex was last year added to the plant, which is to prove one of the highly successful gold extraction enterprises of the district. It will be strikingly heard from before the new year is far advanced.

CRIPPLE CREEK GOLD MINING AND TUNNEL CO. — Incorporated 1895; 2,000,000 shares, par $1. Principal office, Colorado Springs. A. G. Stith, president; D. H. McLelland, secretary. Annual meeting, first Saturday in November. In treasury, 800,000 shares; no debt.

A new company, having a tunnel and tunnel site location to test the worth of Tenderfoot Hill. The "treasury stock is preferred at a 5 per cent. dividend," and is being sold in the East and in London.

CRŒSUS GOLD MINING AND TUNNEL CO.— Incorporated September, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. William P. Bonbright, president; J. Arthur Connell, secretary. Annual meeting, first Monday in October. In treasury, 264,500 shares; no debt.

Claims: Sunset, Lone Pine, Little Chief, 17 acres, west of Mound City; Mocking Bird, Silent Parot, about 20 acres; Esmeralda Nos. 1, 2, 3 and 4, northeast of Rhyolite Mountain, and a fraction on Beacon Hill, making a total probable area of 77 acres; all in process of patent. Other valuable holdings are Diamond Joe and Croesus tunnels and tunnel sites under Granite Hill. A new enterprise very liable to occasion considerable of a stir.

CURRENCY MINING CO.—Incorporated May, 1892; 1,250,000 shares, par $1. Principal office, Colorado Springs. William A. Otis, president; J. C. Connor, secretary. Annual meeting, first Monday in May. In treasury, 100,000 shares; no debt.

Patented claims: Fairfax, on Raven Hill, 5 acres; one-half Index, on Gold Hill, 4 acres; Amy, on Guyot Hill, 5 acres. Patent in progress on Hale and Holmes, on Squaw Mountain, 5 acres; Printer, 9 acres, Benton, 6 acres, at head of Poverty Gulch; Amity, on Lawrence Mountain, 10 acres; Engineer, on Guyot Hill, 4 acres; Modoc and Phœnix, on Beacon Hill, 11 acres; York, on Raven, nearly an acre. All told about 56 acres. Half of Index is bonded for $25,000 and Hale and Holmes for $100,000; both bonds due August next. Latter is a shipper. These separate tracts are all in desirable neighborhoods.

DANTE GOLD MINING CO. — Incorporated September, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. Sylvester Johnson, president; Ira P. Trickey, secretary. Annual metting, fourth Monday in September. In treasury, 250,000 shares; no debt.

Patented claims: Dante, on Bull Hill, 10 acres, one of the oldest locations. Until two months ago but little development had been done, though a marked change has since taken place. Two phonolite dikes cross this ground, which is hemmed in by good mines. It is an attractive proposition.

DEFENDER GOLD MINING CO.—Incorporated September, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. Edwin Arkell, president; R. H. Loper, secretary. Annual meeting, . In treasury, 250,000 shares; no debt.

Claims: Defender, Broadmore, Cascade, Mandolin, Parquet, on Calf Mountain, 45 acres, work being done to secure patents. An intrusion of phonolite gives promise of value to this hitherto unexplored territory.

DEL CORONADO GOLD MINING CO.—Incorporated November, 1895; 900,000 shares, par $1. Principal office, Colorado Springs. G. B. Bish, president; L. R. Decker, secretary. Annual meeting, second Saturday in November. In treasury, 200,000 shares; no debt.

Claims: Lulo, Rock Island, on Big Bull, 20 acres, patents in progress. Leases are soon to be closed on each. A new prospective venture of promise.

DES MOINES GOLD MINING CO.—Incorporated October, 1892; 500,000 shares, par $1. B. B. Grover, president; Robert Waugh, secretary. Annual meeting, second Saturday in December. In treasury, 16,000 shares; no debt.

Patented claims: Mud Hen and Bobtail, 20 acres, on Raven Hill. Bobtail bonded to December 15, 1895, for $40,000; Mud Hen for $50,000 to December 1, 1897. Good veins brought to light with some fair grade paying mineral.

DOLD MINING AND MILLING CO.—Incorporated October, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. Oris. L. Benton, president; C. B. Gunn, secretary. Annual meeting, . In treasury, 100,000 shares; no debt.

Patented claims: Mt. Forrest, Great Eastern, Spring Gulch, in a group, on Carbonate Hill, 28 acres. Lonely Maid, on Iron Clad Hill, is an unpatented claim. Quite a little development accomplished; a vein uncovered on Great Eastern.

EASTER BELL GOLD MINING AND MILLING CO.—Incorporated October, 1895; 3,000,000 shares, par $1. Principal office, Denver. J. J. Brown, president; Robert J. Coleman, secretary. Annual meeting, last Wednesday in November. In treasury, 600,000 shares; no debt.

Patented claims: Easter Bell, Burlington, Hawkeye Nos. 1 and 2; about 35 acres, on east slope of Bull Hill. Also owns Yellow Jacket and Fractional, adjoining the preceding, on which patents have not been started. Some 250 feet of development work has been done.

ECLIPSE DEVELOPMENT CO.—Incorporated October, 1895; 500,000 shares, par $1. Principal office, Pueblo. T. W. Robinson, president; W. H. Hunter, secretary. Annual meeting, first Monday in November. In treasury, 249,000 shares; $4,000; no debt.

Holdings consist of a bond on the Eclipse for $63,000, due April 12, 1897. This property has contributed $40,000 to the production of the district.

ECLIPSE MINING AND MILLING CO.—Incorporated January, 1893; 1,000,000 shares, par $1. Principal office, Denver. E. W. Bement, president; C. C. Lunt, secretary. Annual meeting in February. In treasury, 45,000 shares; $1,000; no debt.

Claims: Rarick, 1½ acres, on Gold; Aricular, 3 acres, on Requa Gulch; both in process of patent; Sunshine, Bertha C,

Mabel L, 30 acres, on Rhyolite Mountain; Loretta, a full claim, Little Pearl, on Iron Mountain; Quartz placer, 100 acres, on Bernard Creek. Exploration is being advanced on the Rhyolite territory.

EDWIN BOOTH GOLD MINING CO.—Incorporated August, 1893; 1,000,000 shares, par $1. Principal office, Denver. , president: E. R. Argersinger, secretary. Status of treasury stock or financial condition not obtainable.

Alleged holdings embrace Hale and Holmes, Adelaide, Alta, Lucetta, Edith May; all near the territory of the Cripple Creek Gold Exploration Company. All efforts to obtain information are abortive and the office of the secretary seems to be abandoned.

EL DORADO GOLD MINING AND MILLING CO. — Incorporated April, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. W. H. McIntire, president; J. F. Maybury, secretary. Annual meeting, second Tuesday in January. In treasury, 162,000 shares; no debt.

Patented claim: El Dorado, 10 acres, north of Poverty Gulch, near the El Paso, of the Gold King Co. Cripple Creek placer, about 15 acres, junction of Cripple Creek and Arequa gulch, is in process of patent. But slight exploration accomplished. El Dorado is in a section that is in high favor.

ELECTRIC TRAMWAY AND TUNNEL CO.—Incorporated December, 1895; 1,200,000 shares, par $1. Principle office, Cripple Creek. C. M. Rice, president; Owen Prentiss, secretary. Annual meeting, first Monday in December. In treasury, 400,000 shares; $16,000; debt $5,000.

Claims: Fleming, Freeport, 12 acres, on east side of Bull Hill, patent applied for. The chief holding is the Electric-Tramway tunnel and tunnel site, located November, 1892, on eastern slope of Bull Hill, penetrating same. Tunnel has been driven 460 feet.

ELKTON MINING AND MILLING CO.—Incorporated June, 1892; 500,000 shares, par $1. Principal office, Colorado Springs. George Bernard, president; S. S. Bernard, secretary. Annual meeting, June 13. No treasury stock; no debt. Paid $45,000 in dividends.

Patented claims: Elkton, Kentucky Bill, 13 acres, on Raven Hill. There is a strong vein; shaft 320 feet deep with three levels. Lowest workings show improvement in ore body. Gold production $250,000. A valuable Elkton asset is 250,000 shares of the capital stock of the Walter Gold Mining Co., owning an adjoining mine operated through the Elkton shaft.

EL PASO GOLD MINING CO.—Incorporated 1894; 650,000 shares, par $1. Principal office, Colorado Springs. George Bernard, president; S. S. Bernard, secretary. Annual meeting in April. In treasury, 250,000 shares; no debt.

Patented claims: Orizaba Nos. 1 and 2, 11 acres, on Beacon. Leased to October, 1896. A low grade ore chute opened in a good vein that gives evidence of improving. This is a close corporation and the shares are rarely traded in.

EMMA AIMEE GOLD MINING CO.—Incorporated November, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. E. W. Case, president; Will J. Mathews, secretary. Annual meeting, first Monday in December. In treasury, 250,000 shares; no debt.

Patented claim: Emma Aimee, 6 acres, at junction of Raven and Iron Clad Hills. Leora V, about 5 acres, same location, is being patented. Company advancing development on each claim with flattering indications of a bright outcome.

ENTERPRISING MINING AND LAND CO. — Incorporated February, 1892; 800,000 shares, par $1. Principal office, Colorado Springs. A. M. Ripley, president; J. A. Wright, secretary. Annual meeting, first Saturday in January. No treasury stock; no debt; reserve fund $6,000. Paid one dividend, $3,600.

Patented claims: Dolly Varden, Morning Star, Christie, Squaw Gulch, 30 acres, on north side Raven Hill; Oak, 9½ acres, on Iron Clad. Dolly Varden was made a promising mine by lessees in the early months of 1895. It is now worked by the company and has produced $60,000 all told. Other ground is being tested by lessees, who have opened a good ore body in Morning Stars. Affairs are excellently managed, outlook roseate. Dolly Varden uncovered a second rich ore chute in the first days of December.

ERIE GOLD MINING CO.—Incorporated November, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. A. F. Seymour, president; D. H. Imler, secretary. Annual meeting, second Tuesday in November. In treasury, 82,000 shares; $4,000; no debt.

Claims: Alice, Fearless, Small Hopes, about 25 acres, northwest of Mineral Hill, for which a patent is being obtained as speedily as possible. There is a large contact vein of porphyry and granite carrying stringers and pockets of medium grade mineral.

ESTELLINE GOLD MINING CO. — Incorporated January, 1893; 200,000 shares, par $1. Principal office, Denver. George W. Kramer, president; J. B. Andrews, secretary. Annual meeting, second Tuesday in January. No treasury stock; no debt.

Patented claim: Estelline, 8½ acres, south of Battle Mountain, below Washington. Two fine appearing veins exposed; one believed to be extension of famed Independence. Deepest shaft 80 feet. As yet no paying ore in quantity discovered.

EUREKA GOLD MINING CO.—Incorporated March, 1894; 750,000 shares, par $1. Principal office, Colorado Springs. G. M. Carter, president; H. A. Young, secretary. Annual meeting, third Wednesday in March. In treasury 40,000 shares; no debt.

Patented claim: Northwestern, 10 acres, on Iron Clad. Claims in process of patent are Kaolinite, 10 acres probably, on east side Bull Hill; Early Bird, Little Giant, Best Friend, 11 acres, between Tenderfoot and Mineral Hills. The 11-acre tract is bonded to October next for $30,000.

FANNIE B. MINING AND MILLING CO. — Incorporated December, 1893; 1,000,000 shares, par $1. Principal office, Colorado Springs. John Williams, president; G. A. Y. Reeds, secretary. Annual meeting first Thursday in December. In treasury, 150,000 shares; no debt.

Patent is in progress for Fannie B, 9½ acres probably, on Beacon Hill. This ground is bonded for $30,000 to June, 1896. Recently there has been a renewed activity in this locality and systematic prospecting is being rewarded.

FAVORITE GOLD MINING CO.—Incorporated March, 1894; 1,200,000 shares, par $1. Principal office, Colorado Springs. H. K. Devereux, president; J. K. Miller, secretary. Annual meeting, first Saturday in April. In treasury, 200,000 shares; no debt.

Patented claim: Favorite, 9 acres, on Bull Hill. Ground leased to February 1, 1896. Main shaft 80 feet, with 225 feet of levels and drifts. One of the latest finds made known is on this tract. Production, $7,000.

FRANKLIN GOLD MINING CO.—Incorporated April, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. W. L. Cook, president; S. B. Dickens, secretary. Annual meeting, April 16. In treasury, 160,000 shares; no debt.

Patented claim: Franklin, 8 acres, north side of Bull Hill. Other claims: Gorilla, A. C. Gillam, east of Rhyolite Mountain. Franklin is leased to September, 1896. The profit-yielding boundaries of the district are extending toward Franklin ground.

FREE COINAGE GOLD MINING CO. — Incorporated May, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. Both, S. I. Altman and J. T. Reed lay claim to the presidency, while either Ella Altman or L. E. Reed is secretary. The Altmans have possession of the company books. Annual meeting, May 10.

Patented claims: Bison, Pinto, Rising Sun, Pueblo, on which is the town of Altman, on the Ridge of Bull Hill, and Wilson, 35 acres. Wilson is a shipping mine, with a production of about $15,000. There are several veins at Altman, but no valuable ore chute has been brought to light.

FRISCO AND CRIPPLE CREEK GOLD MINING CO. — Incorporated December, 1895; 1,500,000 shares, par $1. Principal office, Cripple Creek. J. M. Parker, president; E. N. Bement, secretary. Annual meeting, second Thursday in December. In treasury, 500,000 shares; no debt.

Claims: Darlington, Midnight, Annie G., Bed Rock, 40 acres, on Big Bull Mountain, now being surveyed for patent. A promising proposition of the Greater Gold Belt.

GARFIELD-GROUSE GOLD MINING CO. — Incorporated February, 1894; 1,200,000 shares, par $1. Principal office, Denver. E. H. Webb, president; R. W. Curtis, secretary. Annual meeting in January. In treasury, 50,000 shares; no debt.

Patented claims: Part of Garfield and Grouse, about 3 acres, on Bull Hill. Leased to December 1, 1896. Main shaft, 150 feet; tunnel, 150 feet, and two levels, aggregating 300 feet. Small rich vein. Gold yield in excess of $30,000.

GAULT MINING AND MILLING CO. — Incorporated November, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. Wm. Clark, president; W. A. Davis, secretary. Annual meeting, first Monday in December. In treasury, 250,000 shares; no debt.

Claims: Alta, Golden Eagle, on Iron Clad; Bovine, Toten, on Tenderfoot: all full claims. The company states that work is soon to be begun on these tracts.

GILT EDGE MINING, LEASING AND BONDING CO. — Incorporated November, 1895; 750,000 shares, par $1. Principle office, Colorado Springs. Reuben Berry, president; J. K. Brunner, secretary. Annual meeting, fourth Thursday in November. In treasury 300,000 shares; no debt.

Holdings consist of lease to December, 1896, on half the Badger Boy of the Ivanhoe company; also lease and bond for $50,000 due in two years on the Mud Hen of the Des Moines company.

GLADYS A. MINING CO. — Incorporated December, 1895; 500,000 shares, par $1. Principal office, Colorado Springs. Louis Reif, president; J. M. Harden, secretary. Annual meeting, December 16. In treasury, 80,000 shares, no debt.

Claims: Vesper Bell, Greeley, Oldtown, Iowa, Miss S. 40 acres, a mile east of Victor. Miss S. bonded for $10,000, due, April 1896. The company is developing its other claims.

GOLD AND GLOBE HILL MINING CO.— Incorporated December, 1891; 750,0000 shares, par $1. Principal office, Colorado Springs. S. R. McKinnie, president; W. H. Gowdy, secretary. Annual meeting first Saturday in December. No treasury stock; no debt.

Patented claims: New Moon, half Gold King, 12 acres, on Gold Hill; Iron King, 10 acres on Iron Clad; Contact, 10 acres, on Rattlesnake Mountain. West 700 feet of Gold King was sold for $12,000, and 500 feet of east end is bonded for $25,000. New Moon is leased to March next. It is one of the new shipping propositions of the current year, and is equipped with three steam hoists. Production, $25,000.

GOLD CRATER MINING CO. — Incorporated November, 1895; 100,000 shares, par $5. Principal office, Colorado Springs. W. S. Stratton, president; H. C. McCreery, secretary. Annual meeting, November 7. No treasury stock; reserve fund, $15,000; no debt. A consolidation of Summit Mining and Milling and Premium Gold Mining companies perfected in November, 1895.

Patented claims: Globe, Lady Stith, Close Shave, Deerhorn, Deerhorn No. 2, Pride of the Rockies, 35 acres on Globe Hill; Callie, 5 acres, on Gold Hill. Deepest workings, 300 feet. Large amount of development. The company is well named, as there appears to be a mammoth crater of gold-bearing mineral in this choice territory. Gold production in excess of $200,000. Hereafter it will occupy a prominent place on list of shippers.

GOLDEN AGE GOLD MINING CO.—Incorporated May, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. H. E. Insley, president; H. H. Dorsey, secretary. Annual meeting, first Wednesday in May. In treasury, 90,000 shares; no debt.

Patented claims: Little Daisy, Dolphin, Sylvanite, 12 acres, on Globe Hill. All are leased to November next. Dolphin shows a well marked vein, carrying $10 to $20 ore. Here and on the other claims judicious exploration is in progress.

GOLDEN DALE MINING AND MILLING CO.—Incorporated August, 1893; 2,000,000 shares, par $1. Principal office, Colorado Springs. F. H. Pettingell, president; A. B Noxon, secretary. Annual meeting, first Thursday after first Tuesday in December. Stock overissue, 496,000 shares.

Patented claim: Alsa R., 7½ acres, in Arequa Gulch. Bonded for $25,000; $5,000 due September, 1896, and $5,000 each 60 days thereafter. Encouraging indications that this ground will yield handsomely. The affairs of the company have been miserably managed.

GOLDEN FLEECE PLACER MINING CO. — Incorporated October, 1895; 150,000 shares, par $1. Principal office, Colorado Springs. Henry B. Hayden, president; H. W. Foster, secretary. Annual meeting, first Tuesday in September. In treasury, 27,000 shares; no debt.

Claims: Maggie, White Wing, Tarryall, Emma May, 4 placers on Tarryall Creek. An undertaking recently launched, the shares of which are closely held. Prospects encourage hope of good returns.

GOLDEN GALLEON MINING CO. — Incorporated October, 1895; 1,200,000 shares, par $1. Principal office, Colorado Springs. Arthur A. Carnduff, president: J. Arthur Connell, secretary. Annual meeting, fourth Friday in Nobember. In treasury, 500,000 shares; no debt.

Claims: Hosea P, Lost Chord, probably 20 acres, on Mineral; Fly Dot No. 2, 10 acres, on north side of Tenderfoot; Nightingale, 3 acres, on Iron Clad; North Cascade, Kinsale, about 10 acres, on Beacon Hill; patents in progress on all. Several veins showing on which exploration is to be vigorously advanced.

GOLDEN LINK MINING, LEASING AND BONDING CO.— Incorporated June, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. A. L. Lawton, president; J. H. Thedinga, secretary. Annual meeting, first Monday in June. In treasury, 72,000 shares; no debt.

Claims: Allen Thurman, Crystal Hill, on Rhyolite Mountain, for which patents have been applied; Cream, on Cow Mountain, and one-quarter Jessie H. and Living Picture, on Bull Hill. The company has lease and bond for $50,000 on Magna Charta, Annex, Quartzite, 18 acres on Iron Clad Hill, belonging to Magna Charta Company (which see). Development is in progress on Magna Charta ground, also on Crystal Hill and Cream.

GOLD HILL BONANZA MINING CO.—Incorporated November, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. B. F. Crowell, president; Frank G. Peck, secretary. Annual meeting, second Tuesday in November. In treasury, 100,000 shares; no debt.

Patented claim: Bonanza King, 10 acres, on Gold Hill, next to Midget, between New Moon and Anchoria-Leland territory. Mining operations will be carried on through Midget workings. A hopeful new enterprise.

GOLD KING MINING CO.—Incorporated February, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. E. A. Colburn, president; C. H Dudley, secretary. Annual meeting in January. In treasury, 70,000 shares; no debt.

Patented claims: El Paso, Stop Short, E. C. L. and F., Lookout, 25 acres, on north slope of Poverty Gulch. The first claim of record in the dis'rict is the El Paso. It was believed to be a bonanza in 1892, though later the vein was lost. Now there is a marked change, with a well defined vein, carrying a generous ore chute, which is developed far enough to prove that hereafter it will be a reliable shipper. Gross yield, about $100 000.

GOLD SOVEREIGN MINING AND TUNNEL CO. — Incorporated October, 1895; 3,000,000 shares, par $1. Principal office, Colorado Springs. Henry Le B. Wills, president; Godfrey Kissel, secretary. Annual meeting, third Thursday in November. In treasury, 1,200,000 shares; no debt.

Patented claims: Gold Sovereign, J. G. Blaine, 9.15 acres, on Bull Hill, next to John A. Logan and Dante. A tunnel and tunnel site location made in 1892; work to maintain title on which has been kept up; is a valuable holding of the company. Tunnel driven 200 feet. Exploration to be speedily under way on the patented ground.

GOLD STANDARD MINING AND TUNNELLING CO. — Incorporated April, 1892; 1,000,000 shares, par $1. Principal office, Denver. G. S. Wood, president; Willis B. Herr, secretary. Annual meeting, first Monday in April. No treasury stock; debt, $6,500 trust deed.

Patented claims: North Star, Mt. Monarch, 16 acres, on Raven. Freshwater, probably 4 acres, adjoining is being patented. The Gold Standard tunnel and tunnel site, under Raven Hill, is the valuable feature of this proposition. The tunnel has been driven 950 feet. Recently a strong vein was encountered in North Star.

GOLDSTONE GOLD MINING CO.—Incorporated March, 1892; 1,250,000 shares, par $1. Principal office, Colorado Springs. Seth Baker, president; J. Straughan Hall, secretary. Annual meeting, first Wednesday in April. In treasury, 20,000 shares; no debt.

Patented claim: Guess, 7½ acres, on Iron Clad. Patents applied for: Dolphna, 5 acres, Ben Franklin, 4½ acres, on Carbonate Hill; Baby, 8 acres, on Bull Hill. Hillside, on Mineral Hill, less than 4 acres, another claim of the company. Guess bonded for $20,000 and Baby for $30,000 to April next.

GOOD HOPE GOLD MINING CO.—Incorporated February, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. G. E. Lindley, president; W. H. Coffin, Jr., secretary. Annual meeting, March 8. In treasury, 150,000 shares; no debt.

Patented claim: Good Hope, 10 acres, in Pot Gulch, south of Victor town. The Jasper tunnel and tunnel site, in same locality, is property of company, and bubbling over with good hope. This is a pioneer undertaking in the exploration of an untried neighborhood, and the venture is very liable to prove a profitable one.

GOULD MINING AND MILLING CO.—Incorporated August, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. J. H. Gardner, president; E. M. Purdy, secretary. Annual meeting, June 1. In treasury 62,000 shares; no debt.

Patented claim: Jennie Sample, 7 acres, on Raven Hill. Patent applied for Rhinoceros, Nil Desperandum, Kity Lane, about 22 acres, all on Raven Hill. Jennie Sample leased to August next. Company is working Nil Desperandum and Rhinoceros. Main tunnel in 175 feet. Ground desirably located.

GRANITE HILL MINING AND MILLING CO.—Incorporated April, 1892; 720,000 shares, par $1. Principal office, Colorado Springs. L. H. Gowdy, president; J. P. Madden, secretary. Annual meeting, December 4. In treasury, 50,000 shares; no debt.

Claims: Granite Hill, probably 6 acres on Granite Mountain; Chicago Girl, 10 acres, on Squaw Mountain, patent applied for both; Oro, a full claim, on Rattlesnake. Granite Hill leased to next September.

GROTTO GOLD MINING CO.—Incorporated February, 1894; 1,500,000 shares, par $1. Principal office, Manitou. W. G. Smiley, president; E. Harris Jewett, secretary. Annual meeting, third Monday in July. In treasury, 200,000 shares; debt, $16,000, due September 1, 1896.

Claims: Grotto, Accident, Bull Domingo, Anna May Wells, 27 acres, on Bull Hill, in process of patent. Grotto and Accident bonded for $65,000 to August next. An ore body has been opened recently which gives promise of making a shipping mine.

GROUSE MOUNTAIN MINING AND MILLING CO.—Incorporated August, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. E. Barnett, president; P. C. Dockstader, secretary. Annual meeting, first Monday in July. In treasury, 150,000 shares; no debt.

Claims: Antlers, Elk, Orva May, Maggie C, Earl, about 50 acres, on south slope Grouse Mountain, in process of patent. Only recently has systematic prospecting been attempted and the horoscope is encouraging.

HALLETT AND HAMBURG GOLD MINING CO.—Incorporated May, 1895; 200,000 shares, par $1. Principal office, Colorado Springs. C. J. Hallett, president; Seth Baker, secretary. Annual meeting in July. In treasury, 50,000 shares; no debt.

Patented claim: Hallett and Hamburg, 4 acres, on south slope of Battle Mountain. Shaft down 55 feet. Exploration in progress by company. A good vein has been brought to light within past few weeks.

HARVARD GOLD MINING AND MILLING CO.—Incorporated November, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. Charles H. Ashton, president; J. C. Braidwood, secretary. Annual meeting, November 26. In treasury, 250,000 shares; no debt.

Claims: Insight, Surething, on Galena Ridge; Proctor, Baby Blanchard, Tumbledown, on Cow Mountain; all full claims. A new undertaking. No development work other than assessment holes.

HAYDEN GOLD MINING CO.—Incorporated November, 1895; 5,000,000 shares, par $1. Principal office, Cripple Creek. Chas. L. Tutt, president; H. L. Shepperd, secretary. In treasury, 2,000,000 shares; no debt.

Patented ground: The Hayden addition to Cripple Creek town, together with eight claims on Mineral and Gold Hill; 140 acres. The Hayden tract has been demonstrated to contain several veins from which small quantities of rich mineral have been taken. Exploration is to be advanced without loss of time.

HENRIETTA GOLD MINING CO.—Incorporated September, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. S. N. Nye, president; Phil. S. Delany, secretary. Annual meeting, fourth Tuesday in September. In treasury, 150,000 shares; no debt.

Claims: B. H. Bryant, Midland, Hagerman, 30 acres in a group a mile west of Gillett, 6 acres patented and a patent is being secured for remainder as rapidly as possible. This is a new enterprise systematically prospecting an untried neighborhood.

HOME RUN GOLD MINING CO.—Incorporated October, 1893; 750,000 shares, par $1. Principal office, Colorado Springs. Louis R. Ehrich, president; Walter F. Crosby, secretary. Annual meeting, second Monday in June. In treasury, 150,000 shares; debt $7,300.

The company has a bond on Home Run, patented triangular fraction, 3 acres, north of Lawrence townsite, on which the final payment, $15,000, is due July 9, 1896, when secure title will be had. A vein in granite opened which has proved a shipper.

HOMESTAKE GOLD MINING AND MILLING CO.—Incorporated March, 1895; 750,000 shares, par $1. Principal office, Colorado Springs. F. G. Horn, president; C. E. Richards, secretary. Annual meeting, second Tuesday in April. In treasury, 250,000 shares; no debt.

Patented claims: Lost Lode, Homestake, Gold Queen, nearly full claims. There are five leases that expire in July next. Deepest shaft, 60 feet. Location not supplied.

IDA MAY GOLD MINING CO.—Incorporated November, 1893; 500,000 shares, par $1. Principal office, Colorado Springs. J. A. Hayes, president; J. G. Shields, secretary. Annual meeting, third Tuesday in January. In treasury, 150,000 shares; $3,700; debt, $6,000.

Patented claims: Ida May, 10 acres; Little Clara, 10 acres; Mountain Girl, 5 acres; all on Raven Hill. With the exception of a tract 500 feet square all ground is leased to next June. Several veins have been slightly prospected affording a gold yield of $20,000.

INGHAM CONSOLIDATED GOLD MINING CO. (LIMITED.)—Incorporated September, 1895; 1,500,000 shares, par $0.50. Principal office, Council Bluffs, Iowa; general and transfer office, Colorado Springs. Henry S. Bidwell, president; Francis J. Hobbs, secretary. Annual meeting, third Monday in October. In treasury, 500 000 shares; no debt.

Patented claims: Ingham, Mattie D., Rose Maud, portions of Wellington, Little Nellie, 22 acres, all on Raven Hill. Main shaft down 185 feet, from bottom of which a winze extends 40 feet, making lowest working 225 feet deep. Ingham is extension of the Raven vein, pronounced by Hamilton Smith, the London expert, the strongest fissure of the district. Mattie D. tunnel is 750 feet long, connecting with Ingham workings. In the past a handsome yield was had from Ingham-Mattie D. territory, and vein shows every sign of improving. Rose Maud is leased in 12 blocks to July next. The first shipment from the district was from this claim, though only recently was ore in solid formation brought to light. An exceedingly promising proposition.

IRON MASK GOLD MINING CO.—Incorporated November, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. J. M. Hardin, president; L. L. Johnson, secretary. Annual meeting, first Saturday in November. In treasury, 150,000 shares; no debt.

Claims: Red Jacket, 10 acres, patent in progress, a mile southwest of Cripple Creek; Iron Mask, Iron Dollar, about 20 acres, in same locality. A recent incorporation of which but little is known.

ISABELLA GOLD MINING CO.—Incorporated December, 1892; 2,250,000 shares, par $1. Principal office, Colorado Springs. J. J. Hagerman, president; Arthur S. Goetz, secretary. Annual meeting, third Tuesday in January. No treasury stock; a reserve fund in excess of $70,000; no debt. First dividend, of $22,500, paid December, 1895.

Patented claims; Buena Vista, Lee, Smuggler, Cheyenne Nos. 1 and 2, Emma, Nos. 1 and 2, Bully, Tom Thumb, Snow Bird, Aspen, Jack Rabbits Nos. 1, 2, 3 and 4, Peacock, Hope ful, Hope, Hope No. 2, Old Hickory, Bouncer, Valeria, Two J's, Hobo, 158 acres in a connected body on Bull Hill. Moucha and Golden Moucha, near Mt. Pisgah, also belong to Isabella. Prinipal mining operations hitherto have been on Buena Vista vein, proven over 3,000 feet in length, where there is an incline shaft 420 feet deep, with five levels aggregating 4,500 feet. On Lee-Smuggler ground and on Emmas there are several short term leases. Gold production from this grand mineral farm in excess of $450,000 and the stores of treasure have thus far been but lightly drawn upon. President Hagerman, a few days since, made the following statement: "On January 1, 1895, the company owed $49,000, less $7,000 cash on hand. Its obligations are all paid and it now has in the treasury and due from the smelters for ore shipped up to the end of November, the sum of $80,000. The earnings of the company for the last four months have averaged $18,000 a month. The earnings for October, November and December will average at least $21,000, or nearly one cent per share per month. The condition of the mine is better than at any time in its history, the ore showing a decided increase in value at greater depth. Two new shafts are being sunk on the extension of the Buena Vista vein in the direction of the Victor mine, and one on the Comet claim, about 800 feet north of the Buena Vista shaft. The present shaft is inadequate to handle the increased production. These new shafts will add largely to the company's income. All the expense of sinking the new shaft, development and surface improvements are monthly charged to the cost of the ore, and the profit stated is represented by actual cash in bank."

ISADORE GOLD MINING CO.—Incorporated March, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. H. Enfiajian, president; Q. E. Hicks, secretary. Annual meeting in April. No treasury stock; no debt.

Patented claim: Willie, 5 acres, on Poverty Gulch; Helen, on Bull Hill, also belongs to Isadore. But slight exploration has been carried on and nothing of moment has, up to date, been brought to light.

IVANHOE MINING AND MILLING CO.—Incorporated July, 1892; 600,000 shares, par $1. Principal office, Colorado Springs. Thos. A. McMorris, president; Walter C. Frost, secretary. Annual meeting, second Tuesday in January. In treasury, 100,000 shares; no debt.

Patented claims: Ivanhoe, 10.33 acres, Badger Boy, 10.26 acres, on Gold Hill. Westerly, 750 feet of Badger Boy leased to February 1, 1897. Two leases on Ivanhoe, expire September next. Shaft 125 feet, tunnel 150 feet, with 50 feet of drifts. Production. $1,500. Outlook hopeful.

JACK POT MINING CO.—Incorporated April, 1892; 1,250,000 shares, par $1. Principal office, Colorado Springs. W. F. Anderson, president; Charles Farnsworth, secretary. Annual meeting, second Tuesday in May.

Patented claims: Jack Pot, Gettysburg, on Raven Hill; Providence, Iron Master, 9 acres, Silver Belle, Mary Wynne, on Gold Hill, 43 acres in all. Three leases on Gettysberg expire in July and August; two on Jack Pot to August and October respectively; two leases on Silver Bell and Mary Wynne to June and October next. Several veins opened that are big with promise. The famous Doctor vein crosses Jack Pot territory. Forecast never as bright as to-day.

JEFFERSON MINING CO.—Incorporated March, 1892; 1,100,000 shares, par $1. Principal office, Cripple Creek; general and transfer office, Denver. Geo. B. Mechem, president; A. R. Hallgreen, secretary. Annual meeting in April. No treasury stock; debt, $2,000, trust deed.

Claim: Mattie L, on Gold Hill, probably 7 acres, patent in progress. Originally the company had several claims on Grouse Mountain, the titles to which have not been attended to and it is questionable if any other ground will be secured. Mattie L is surrounded by good producers and recently it has taken position on the shipping list. It is leased to August, 1897.

JENNIE LYND MINING AND MILLING CO.—Incorporated July, 1892; 250,000 shares, par $1. Principal office, Cripple Creek. C. R. Orwig, president; R. B. Taylor, secretary. Annual meeting, fourth Monday in June.

Patented claim: Jennie Lynd, 10.11 acres, on Carbonate Hill. Main shaft, 45 feet; tunnel, 145 feet. Only but slight development accomplished. Within the past few weeks this locality is attracting renewed attention.

KAFFIRS GOLD MINING CO.—Incorporated November, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. W. H. Gowdy, president; Phil S. Delany, secretary. Annual meeting, last week in November. In treasury, 250,000 shares; no debt.

Patented claims: White and Blue, May Brewin, St. Louis, Katie B., 19.54 acres, on Squaw Mountain. This ground formerly was owned by the Napoleon Gold Mining Company. Under the new regime it is not to be longer unexplored. This neighborhood is bringing to light several rich bodies of treasure.

KEYSTONE MINING AND MILLING CO.—Incorporated April, 1894; 1,500,000 shares, par $1. Principal office, Colorado Springs. J. T. Voss, president; Geo. O. Talpey, secretary. Annual meeting, first Tuesday in April. In treasury, 65,000 shares; no debt.

Patented claims: Alfalfa, Penny, 18 acres, on Bull Hill. Claims in process of patent: Sitting Bull, 9 acres, Cripple Creek, 6 acres, Paine, 5 acres, Nameless 1½ acres, on Battle Mountain; Nancy Hanks, Victoria No. 2, 15 acres on south side Bull Hill. Other claims are Big Snow, 10 acres; Gladstone 10 acres, on Big Bull Mountain; Pride of the Hills, 3 acres, on Bull Hill. There are three leases on Sitting Bull that expire in February, September and October respectively. Deepest shaft, 60 feet.

KING SOLOMON TUNNEL AND MINING CO.—Incorporated September, 1895; 2,000,000 shares, par $1. Principal office, Cripple Creek; general office, Boston. Thomas A. Edwards, president; W. H. Damond, secretary. Annual meeting, October 11. In treasury, 1,000,000 shares; no debt.

Has a tunnel and tunnel site location under Globe Hill. A new enterprise of which little is known. Thus far no shares have been dealt in on this market, though several inquiries have come from the East in regard to holdings of the company.

LADESSA GOLD MINING AND MILLING CO.—Incorporated May, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. Charles Neuer, president; F. P. Buck, secretary. Annual meeting, June 17. In treasury, 90,000 shares; no debt.

Patented claim: Butcher Boy, 10 acres, on Cow Mountain. Claims in process of patent: Nameless, 4½ acres, on Bull Hill; Gold Bug and Free Silver, probably 20 acres, on Little Bull Hill. Other claims: Aida May, 10 acres, Hole in the Ground, 10 acres, First Lode, 10 acres, on Cow Mountain. Half of Gold Bug leased to October next. Company is developing Nameless and Butcher Boy; latter shows large body of low grade ore. Veins exposed on several of the other claims.

LILLIE GOLD MINING CO.—Incorporated November, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. F. H. Morley, president; W. A. Otis, secretary. Annual meeting, first Tuesday after first Monday in January. In treasury, 200,000 shares; no debt.

Patented claim: Lillie, 6½ acres, on southeast slope of Bull Hill. It joins the Vindicator and Christmas. This is a locality that in the past few months has given an excellent account of itself.

LINCOLN BOY MINING AND TUNNELLING CO.—Incorporated November, 1893; 1,500,000 shares, par $1. Principal office, Denver. C. W. Walters, president; C. W. Randall, secretary. Annual meeting, latter part of November. In treasury, 530,000 shares; $4,000; no debt.

Patented claim: Lincoln Boy, in Nipple Mountain section. Lincoln Boy No. 2, D. & R. G. Nos. 1 and 2, Senate, Hardscrabble, in same locality. All considerably developed with encouraging showings of mineral. Katie and Hattie S, on Globe Hill are recent purchases. Company has lease and bond on Guess, on Iron Clad Hill; a lease of 250 x 300 feet on Anchor No. 2, on Gold Hill, which expires May next; a lease on Morning Glory, Morning Glory No. 4, and Ida B, of Work company.

LITTLE JOAN MINING AND MILLING CO. — Incorporated July, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. H. P. Lillibridge, president; W. S. Reynolds, secretary. Annual meeting, first Monday in July. In treasury, 142,500 shares; no debt.

Claims: Apex, Little Rosa, 16 acres, end line adjoining on Bull Hill, in process of patent; Apex, covering the summit of Bull Hill, leased to March, 1897; Little Rosa bonded for $35,000 due August 10, 1896. Deepest shaft, 185 feet. Exploration has proven the existence of at least two veins though thus far no profit-yielding ore has been found.

LONDON GOLD MINING AND LEASING CO.—Incorporated December, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. A. D. Jones, president; F. F. Frisbee, secretary. Annual meeting, third Wednesday in December.

Patented claims: Surprise, on Womack; Bessie Y, on Squaw Mountain; acreage not obtainable for this work. Also four claims, probably 40 acres, on Calf Mountain, in process of patent. Surprise leased to November, 1896; Bessie Y to May, 1897.

LONG LEAD MINING AND TUNNEL CO. — Incorporated September, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. H. S. Ervay, president; George M. Irvine, secretary. Annual meeting, fourth Saturday in September. In treasury, 500,000 shares; no debt.

Claims: Abraham Lincoln, Excelsior, Gold Eagle, Gallelio, Hercules, Little Cliff, about 60 acres, on Cowan Mountain. As its name indicates, the promoters believe this to be the longest lode in the district.

LOTTIE GIBSON MINING AND MILLING CO. — Incorporated March, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. F. E. Robinson, president; J. Arthur Connell, secretary. Annual meeting, second Thursday in January. In treasury, 83,835 shares; no debt. Paid one dividend of $22,978.95.

Claims: Jim Blaine, about 7 acres, on Mineral Hill; Guy Fawkes, Gunpowder Plot, Annie B, 18 acres, on Iron Mountain; Lena, Last Chance, 20 acres, on Big Bull Hill, for all of which ground patents are being expedited. The company sold the Lottie, on Bull Hill, for $40,000, from which a dividend was paid May 18, 1895. When titles are secured active development will be energetically prosecuted.

MAGGIE REEVES GOLD MINING CO.—Incorporated May, 1894; 1,500,000 shares, par $1. Principal office, Colorado Springs. William Clark, president; J. H. Gorman, secretary. Annual meeting, third Monday in May. In treasury, 190,000 shares; no debt.

Claims: Ed Wolcott, Greentop, B & M, Missouri Boy, Yankee, east slope of Rhyolite Mountain, on which patents are in progress. This is a neighborhood where little serious prospecting has heretofore been carried on. Deepest shaft, 90 feet; 300 feet of levels and drifts.

MAGNA CHARTA MINING AND MILLING CO. — Incorporated 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. C. B. Seldomridge, president; A. J. Smith secretary. Annual meeting, second Tuesday in January. In treasury, 48,000 shares; no debt.

Patented claims: Magna Charta, Annex, Quartzite, 18 acres on Iron Clad. North Star placer, 16 acres, foot of Mineral Hill, also belongs to the company. Iron Clad ground bonded for $50,000 to November next; $1,000 due February 1, and $10,000 May 1. North Star placer is being worked by company.

MANCHESTER GOLD MINING CO. — Incorporated December, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. John Newman, president; William Wicks, secretary. Annual meeting in December. In treasury, 500,000 shares; no debt.

Patented claims: Mayflower, 9 acres, on Globe Hill. Golden Gate, on Globe Hill is in process of patent. Maud, on Globe Hill, and some promising ground on Gold Hill are holdings of this youthful company.

MANHATTAN CONSOLIDATED GOLD MINING CO. — Incorporated October, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. J. A. Newsome, president; A. C. Niesh, secretary. Annual meeting, third Wednesday in October. In treasury, 150,000 shares; no debt.

Claims: Captain Wertz, Spruce Tree Nos. 1, 2 and 3, over 40 acres, on Galena Mountain, on which patents are to be advanced as soon as sufficient work has been done.

MARGUERITE CONSOLIDATED MINING CO.—Incorporated May, 1892; 500,000 shares, par $1. Principal office, Colorado Springs. W. H. Goshen, president; John T. McCombs, secretary. Annual meeting, first Monday in June. In treasury, 74,000 shares; no debt.

Patented claims: Marguerite, 3 acres, on Gold Hill; Big Mule, May, Stray Horse, 17 acres, on Carbonate Hill. The Marguerite fraction joins the Anaconda territory, and in view of important discoveries on Gold Hill has good promise of value.

MARIA A. GOLD MINING CO. — Incorporated December, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. J. R. McKinnie, president; O. H. Shoup, secretary. Annual meeting in December. In treasury, 250,000 shares; no debt.

Patented claims: Maria A, 7½ acres, on Raven Hill. There are five veins known to intersect this choice tract and exploration is to be prosecuted with vigor.

MARION GOLD MINING CO. — Incorporated October, 1895; 1,500,000 shares, par $1. Principal office, Colorado Springs. C. E. Noble; president, J. Arthur Connell, secretary. Annual meeting, first Monday in November. In treasury, 500,000 shares; no debt.

Patented claims: Marion, Carolyn, 20 acres, west of Gold and Globe Mill. They are together, end to end, 3,000 feet by 300 feet. Exploration has slightly tested a wide vein, carrying low-grade mineral. Shaft 60 feet; tunnel 40 feet.

MATOA GOLD MINING CO.— Incorporated May, 1891; 1,000,000 shares, par $1. Principal office, Council Bluffs, Ia; general and transfer office, Colorado Springs. H. P. Lillibridge, president; W. S. Reynolds, secretary. Annual meeting in February. In treasury, 125,000 shares, $5,300; no debt.

Patented claims: Half Moon, Harlan H., 9 acres, on Gold Hill; also S. W. ½ S. W. ¼, Sec. 30, Tp. 15, S., R. 69 W., 42 acres, in Arequa townsite, extending from Prince Albert and Gold Dollar, on Beacon Hill, through and across Requa Gulch to Grouse Mountain. It has been divided into blocks 300 feet square, and a number of these lots are worked by lessees. Half Moon and Harlan H. leased to May next. This 9-acre tract is in the heart of the choice territory of Gold Hill.

MATT FRANCE MINING AND MILLING CO.—Incorporated October, 1893; 900,000 shares, par $1. Principal office, Colorado Springs. J. K. Miller, president; W. W. Williamson, secretary. Annual meeting, first Saturday in October. In treasury, 90,000 shares; no debt.

Patented claim: Black Hawk, 9 acres on Grouse Mountain. The company has a 20-year lease on lots 50 and 63, 10 acres each, in section 36, joining Black Hawk. The worth of the ground has not been tested, and no prospecting is now being done.

MAYFLOWER GOLD MINING CO.—Incorporated September, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. H. P. Lillibridge, president; E. F. Smith, secretary. Annual meeting, in February. In treasury, 160,000 shares; no debt.

Patented claims: Mayflower, Ute, Highland Chief, Beaver Springs Placer Nos. 1 and 2, in all 60 acres, a mile west

of Gillett. This is a neighborhood where but little exploration has been attempted, though good ore in small quantities has been found. Leasing propositions are being considered.

MEMPHIS PROSPECTING AND MINING CO: Incorporated August, 1894; 100,000 shares, par $1. Principal office, Colorado Springs. Dr. J. J. Shuler, president; H. W. Foster, secretary. Annual meeting, March 11. In treasury, 50,000 shares; no debt.

Claims: Glasgow, Lexington, Jay Jay, Louisa Belle, Evlyn, Clara, Little Susie, all full claims with no conflicts; Colfax and Shuler Placers, each 20 acres, three miles southeast of Victor town; Honduras, Denmark, Eagle Bird, each a full claim, near Wilbur, on Florence and Cripple Creek Railroad. Several veins discovered and on at least one claim there is an intrusion of phonolite in the granite.

MINERAL ROCK MINING AND MILLING CO. — Incorporated December, 1894; 1,200,000 shares, par $1. Principal office, Denver. E. H. Webb, president; Albert Smith, secretary. Annual meeting in December. No treasury stock; no debt.

Patented claim: Mineral Rock, 4½ acres on Bull Hill. There are two veins cutting through this small tract, one of which has proved a generous shipper. Production exceeds $40,000. Of the capital stock, 580,000 shares belong to the Bankers Gold Mining and Milling Company.

MOHAWK GOLD MINING CO.—Incorporated November, 1895; 1,250,000 shares; par $1. Principal office, Colorado Springs. J. A. Newsome, president; R. C. Greene, secretary. Annual meeting, third Monday in November. In treasury 150,000 shares; no debt.

Claims: Blue Ledge Nos. 1 and 2, on Galena Mountain, probably 20 acres; Agnes Nos. 1 and 2 on Buck Mountain, 20 acres. One of the recent enterprises. The promoters have reason to believe they have secured desirable ground.

MONARCH GOLD MINING AND MILLING CO.—Incorporated May, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. J. P. McMillen, president; F. M. Young, secretary. Annual meeting, first Tuesday in May. In treasury, 85,000 shares; no debt.

Patented claims: Minnehaha, 8½ acres, on Raven Hill; Monarch, North Star, Silver State, Brown Leggings, 32 acres, on Globe Hill. Minnehaha leased to October next. The Globe Hill ground bonded for $100,000, payments as follows: $5,000, March 15, 1896; $20,000, September 15, 1896; $75,000, March 15, 1897. Deepest shaft, 100 feet. Considerable prospecting accomplished.

MONTE RICO GOLD MINING CO.—Incorporated September, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. A. T. Gunnell, president; J. S. Tucker, secretary. Annual meeting, second Tuesday in January. In treasury, 300,000 shares; no debt.

Patented claims: Jim Fisk, A. M. F., W. S. A., Sheridan, Phonolyte, Hidden Treasure, Vaughn, J. Henry, Bently, probably 80 acres; all on Big Bull. Development soon to be expedited.

MONTEVIDIO MINING AND MILLING CO.—Incorporated April, 1894; 1,250,000 shares, par $1. Principal office, Colorado Springs. E. E. Woolheater, president; H. H. Jones, secretary. Annual meeting, November 12. In treasury, 230,000 shares; no debt.

Claims: O. Molley, Jim Corbit, Charley Shay, Montevidio, Charley Mitchell, Bertha, 60 acres, in a group, on Bull Hill, in process of patent. Deepest shaft, 70 feet. Company is developing Charley Shay, Bertha and Montevidio.

MOOSE GOLD MINING CO.—Incorporated June, 1893; 600,000 shares, par $1. Principal office, Colorado Springs. Ward Hunt, president; John P. Hunt, secretary. Annual meeting, latter part of June.

Patented claims: Moose 10 acres, Ben Harrison, 7 acres, in Arequa Gulch. The Moose is one of the strongest fissures in the district and has the second deepest shaft, 650 feet. There are ten levels, aggregating 6,000 feet. Vein is strong at lowest workings, as nearer surface. Dividends amounting to 26 cents a share have been paid. Gold production over $500,000. The first shipment of ore paid for the mine. In the last few weeks a second ore zone was encountered which adds materially to the store of ore exposed.

MOUNTAIN BEAUTY GOLD MINING CO.—Incorporated October, 1895; 2,000,000 shares, par $1. Principal office, Colorado Springs. H. K. Devereux, president; J. M. Parker, secretary. Annual meeting latter part of October.

Claims: Mountain Beauty, Sunnyside, Independence, Luck Sure, Christmas Bell, acres, southeast slope of Bull Hill; patents underway. Deepest shaft 60 feet. Ground admirably situated.

MOUNT ESTHER MINING AND MILLING CO. — Incorporated April, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. E. P. Bumstead, president; W. A. Davis, secretary. Annual meeting, third Monday in April. In treasury, 400,000 shares; no debt.

Claims: Red School House, School Boy, School Master, School Girl, about 40 acres, in a connected body on north side Sec. 16. Although an old company systematic development has only of late been in progress.

MT. ROSA MINING, MILLING AND LAND CO.—Incorporated January, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. L. E. Sherman, president; B. K. Walker, secretary. Annual meeting, second Tuesday in January. In treasury, 11,500 shares; $2,500; no debt. Paid $9,883.48 in dividends.

Patented claims: Adams, 4.78 acres; Gold Coin, 8.8 acres; Mt. Rosa, 4 26 acres; Rosa Lee, 10.33 acres, together with Mt. Rosa placer, a total of 124 acres. Nearly 100 acres is in the town of Victor, and about $70,000 has been realized from the sale of town lots, the deeds for same covering only the surface, all right to mine underground being retained by the company. Half the proceeds from the first ground divided into lots belongs to the promoters of the Florence and Cripple Creek Railroad for securing the location of the station at this point. Mt. Rosa will derive an income from the sale of lots for a long period, while discoveries of good paying bodies of mineral are being made under the town. A profit-yielding vein was opened in the Gold Coin while excavating for the foundations for the Hotel Victor, and 6.2 acres of this ground is bonded for $55,000 to August next. Adams and some placer ground, 4.7 acres, bonded for $25,000 to August next. Besides these, which are leased, as well as bonded, the company has several tracts leased for various periods, the longest to April, 1897. Deepest shaft, 230 feet. This generous area, joining the El Dorado mines of Battle Mountain will, beyond doubt, prove of great value when fully explored.

MUTUAL MINING AND MILLING CO.—Incorporated December, 1891; 500,000 shares, par $1. Principal office, Colorado Springs. J. R. McKinnie, president; C. W. Fairley, secretary. Annual meeting in December. In treasury, 12,000 shares; $450; debt $1,000.

Patented claims: New Discovery, 9 acres, Mineral Hill, 10 acres, both on Mineral Hill; Independence, 6½ acres, on Gold Hill. Mollie Gibson, on Guyot Hill, is being patented. All of the ground is leased in five leases. It affords an attractive venture.

NAPOLEON GOLD MINING CO.—Incorporated June, 1892; 200,000 shares, par $5. Principal office, Colorado Springs. William A. Otis, president; Godfrey Kissel, secretary. Annual meeting, last Wednesday in June. In treasury, 44,000 shares; no debt.

Patented claims: May Brewen, White and Blue, probably 16 acres, on Squaw Mountain, formerly Napoleon holdings, were in November, 1895, transferred to the Kaffirs Gold Mining Company, which see.

NEW HAVEN GOLD MINING CO.—Incorporated November, 1895; 1,500,000 shares, par $1. Principal office, Colorado Springs. George E. Lindley, president; H. M. Blackmer, secretary. Annual meeting, November 25. In treasury, 500,000 shares; no debt.

Patented claim: Eclipse No. 1, 9½ acres, on Raven Hill in the aristocratic neighborhood of the Raven and Moose mines. Main shaft, 120 feet. Under its excellent management these shares present an alluring proposition.

NEW YORK MINING AND MILLING CO. — Incorporated August, 1892; 1,200,000 shares, par $1. Principal office, Denver. M. J. McNamara, president; C. D. Wood, secretary. Apparently holds no annual meetings. In treasury, 2,750 shares; $3,000; debt, $12,000.

Patented claims: Jack G, Little Nellie, Wellington, 14 acres, on Raven Hill. Jack G. is one of the new 1895 producers, being credited with over $30,000. Shaft, 102 feet; main tunnel, 600 feet; levels and drifts, 500 feet. Quite certain to be more pleasently heard from in future.

NEW YORK TUNNEL AND MINING CO. — Incorporated November, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. John Bridge, president; J. J. McCarty, secretary. Annual meeting, last Wednesday in November. In treasury, 450,000 shares; no debt.

Claim: Lucky B, 2½ acres on Bull Hill. The valuable possession of the company is the New York tunnel and tunnel site near head of Squaw Gulch, the tunnel penetrating Bull Hill for 1,020 feet.

NIAGARA GOLD MINING CO. — Incorporated, November, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. W. G. Frazer, president; Chas. R. Burger, secretary. Annual meeting in November. In treasury, 75,000 shares; $3,500; no debt.

Patented claim: Maggie, 4 acres, on Battle Mountain. Patent is under way on Blanche, also on Battle Mountain, probably 5 acres. Exploration is being advanced on both claims by the company.

NIPPLE MOUNTAIN GOLD MINING CO. — Incorporated August, 1894, 1,000,000 shares, par $1. Principal office, Colorado Springs. William Clark, president; Fred F. Horn, secretary. Annual meeting, July 3. In treasury, 500,000 shares; no debt.

Claims: Manhattan, Iron King Nos. 1 and 2, Alice, Francis, Maryette, 51½ acres, on Iron Hill, a spur of Nipple Mountain, are being patented; Lehigh, 8 acres. Iron King No. 1 is bonded for $10,000 to June, 1897. Nipple Mountain region is two miles south of Victor town, and gives evidence of having several producing mines.

NUGGET MINING AND MILLING CO.—Incorporated May, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. George L. Keener, president; M. S. Herring, secretary. Annnual meeting, May 5. In treasury, 31,000 shares; no debt. Dividends paid, $15,000.

Patented claims: Katherine, 10 acres, Elizabeth Cooper, 8 acres, on Raven Hill, joining Elkton mine. Chas. B., on Grouse Mountain, probably 10 acres, is a holding of the company. Elizabeth Cooper is bonded for $75,000 to May 15, 1896. In Katherine is small rich vein, and two others parallel to it have been opened in the past 60 days. Depth of main shaft, 415 feet, with considerable drifting. Gross gold production, $70,000.

ONTARIO GOLD MINING AND MILLING CO. — Incorporated August, 1895; 1,250,000 shares, par $1. Principal office Colorado Springs. F. W. Strong, president; R. R. Latta, secretary. Annual meeting, second Tuesday in August. In treasury, 100,000 shares; no debt.

Claims: Sierra Rosetta, Fordham, 20.6 acres, on Galena Mountain. Yellow Boy, Buck, 20.6 acres, on Buck Mountain, are being patented. There has been 60 feet of development on Yellow Boy and the same amount on Sierra Rosetta.

OPHIR MINING AND MILLING CO.—Incorporated March 1892; 700,000 shares, par $1. Principal office, Colorado Springs J. K. Fical, president; E. F. Welles, secretary. Annual meeting, third Tuesday in March. No treasury stock; no debt.

Patented claims: Carbonate Queen, 10 acres, Dead Pine, 10 acres, on Battle Mountain. Carbonate Queen leased to November 1, 1896. Dead Pine bonded for $100,000, due first day next April. Main shaft, 200 feet; tunnel 200 feet; 100 feet of levels. Systematic and extensive exploration work, with good results, indicate that the bond on Dead Pine will be taken up.

ORIOLE GOLD MINING CO.—Incorporated November, 1895; 1,250,000 shares, par $1. Thos. H. Edsall, president; Clarence Edsall, secretary. Annual meeting in January. In treasury, 200,000 shares; $2,000; no debt.

Patented claims: Oriole, Daisy, Capitol Hill, Allegheny, Pearl Cecil, on Gold Hill, next to the Anchoria-Leland territory. Development is to be advanced by lessees as rapidly as may be.

ORO GRANDE MINING AND MILLING CO. — Incorporated March, 1894; 1,000,000 shares, par $1. Principal office Colorado Springs. J. M. Riley, president; H. T. McDill, secretary. Annual meeting, March 20. In treasury, 50,000 shares; no debt.

Claims: Summit, Blackfoot, Belle Union, Burdee, a 40-acre group, east of Mt. Pisgah, a mile and a half from Cripple Creek. Development consists simply of assessment work.

ORPHAN BELL MINING AND MILLING CO. — Incorporated March, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. T. S. Hunter, president; D. H. Imler, secretary. Annual meeting, first Monday in March. In treasury, 92,000 shares; no debt.

Patented claims; Orphan Nos. 1 and 2, Ida Bell Nos. 1 and 2, Phœnix, a 32-acre group, on Bull Hill. Development being advanced by a dozen leases, that expire from June to December, 1896. Several veins uncovered. Gold production, $20,000.

OXFORD GOLD MINING AND MILLING CO. — Incorporated November, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. Chas. H. Ashton, president; J. B. Braidwood, secretary. Annual meeting in November. In treasury, 250,000 shares; no debt.

Claims: B. Hawley, L. Mountz, 900 five, Dolly Taylor, Dr. Dunn, full claims on Cow Mountain. No mining of any importance as yet accomplished. Considerable good float has been found thereabouts.

PAPPOOSE GOLD MINING CO. — Incorporated March, 1894; 2,000,000 shares, par $1. Principal office, Cripple Creek; general and transfer office, Colorado Springs. J. F. Hardy, president; A. L. Hardy, secretary. Annual meeting the latter part of March. In treasury, 80,000 shares; no debt.

Claims: Ray, Petrel, Cuckoo, Guess, 20 acres on Squaw Mountain; patent in progress. The worth of ground is being tested by six leases, that expire from August to December next. A promising vein shows on Ray.

PEOPLES MINING AND MILLING CO. — Incorporated July, 1892; 500,000 shares, par $1. Principal office, Denver. S. W. Chaney, president; S. E. Darbey, secretary. Annual meeting, July 10. In treasury, 65,039 shares; no debt.

Patented claims: Bogart, 7 acres, Gold Leaf, 6½ acres, between Raven and Bull Hills. Patents in progress on Sunrise, Morning Light, Camp Bird, 25 acres on Tenderfoot Hill. Bogart leased to January, 1897. Shaft down 230 feet, on small strong vein. A new shipper of the past summer. Gross gold production, $23,000.

PHARMACIST MINING CO. — Incorporated April, 1892; 1,200,000 shares, par $1. Principal office, Colorado Springs. A. D. Jones, president; F. H. Pettingell, secretary. Annual meeting, last Tuesday in April. No treasury stock; debt $8,000. Dividends paid, $84,000.

Patented claim: Pharmacist, 10.3 acres, on Bull Hill. The main vein is a cross fissure, with only 320 feet in territory of company. Two other veins have been brought to light. Deepest workings, 530 feet, with large amount of levels, drifts and cross-cuts. Gross production $360,000. For a season Pharmacist was not on the shipping list, though last month the physical condition of the mine greatly improved and the marked advance in the stock seems well warranted. Another rich ore zone was encountered in the first days of December and the outlook continues to improve.

PIKE'S PEAK CONSOLIDATED GOLD MINING CO. — Incorporated, May, 1895; 1,000,000 shares, par $1. Principal office Cripple Creek. Jos. Gavin, president; T. M. Howell, secretary. Annual meeting, latter part of May. In treasury, 450,000 shares; no debt.

Patented claims: Eldredge, 10 acres; Pinto 10 acres; Haywood and Roudebush, about 14 acres. There is a lease on 500 feet of Eldredge to August next. Deepest shaft, 96 feet. One of the alluring propositions of the northern part of the district.

PLYMOUTH ROCK MINING CO. — Incorporated April, 1892; 1,000,000 shares, par $1. Principal office, Cripple Creek.

E. C. Hight, president; H. L. Shepperd, secretary. Annual meeting, in April. In treasury 5,000 shares, no debt.

Patented claims: Plymouth Rock Nos. 1 and 2, High Five, Log Cabin and World's Fair, 4.02 acres, between Iron Clad and Globe Hills. In systematic exploration the company has been a pioneer in this neighborhood. Also owns Little Grace, 10 acres. A strong vein has been opened, the values being almost entirely medium and low grades, which now are remunerative marketable products.

PORTLAND GOLD MINING CO.—Incorporated March, 1894; 3,000,000 shares, par $1. Principal office, Council Bluffs, Ia.; transfer office, Colorado Springs; general business office at mine. A handsome reserve fund; no treasury stock; no debt. Dividends, $631,000; last December, 1895, $60,000.

Patented claims: Portland, Anna Lee, Doubtful, Bob Tail Nos. 1, 2, and 3, Scranton, Captain, White House, Hidden Treasure, Vanadium, Queen of the Hills, Confidence, Success, Fairplay, Baby Ruth, Lowell, Rosario, National Bell, Four Queens, Black Diamond, Tidal Wave, Lost Anna, Milton, Yankee Girl, Terrible, Little Harry, D's Own and a portion of Blue Stocking, on Battle, over 130 acres. A valuable asset is 310,000 shares of the capital stock of the Amazon Mining Co. There are over half a dozen independent mines outputting 5,000 tons a month, the full capacity of six hoisting plants. A larger tonnage of ore could be taken from this mammoth rock-bound treasure vault without taxing the reserves. The veins are in granite, two of them huge fissures, that give every evidence of holding out to as great depths as they can be worked. On the Anna Lee is the deepest shaft of the camp—about 900 feet. In purchasing ground, litigation and equipment fully $1,500,000 has been expended. In all likelihood, the regular monthly dividend will be handsomely augmented soon after the advent of the new year, and will not be decreased for a long period. For other interesting particulars, see paper by Mr. Chas. J. Moore.

POTSDAM GOLD MINING CO.—Incorporated September, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. C. F. Kjellander, president; R. C. Greene, secretary. Annual meeting, third Monday in September. In treasury, 150,000 shares; no debt.

Claims: Clinker, Red Warrior, Black Bear, Pinion, Parrot, probably 41 acres on Cow Mountain; patent in progress. Exploration is being energetically advanced.

POTTER MINING AND MILLING CO.—Incorporated May, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. J. J. Grier, president; J. H. Berry, secretary. Annual meeting, . In treasury, 200,000 shares; no debt.

Patented claims: Denver, Denver Extension, Olivia; a 28-acre group southwest of Cripple Creek. Half of Denver and Olivia leased to September 18, 1896. Deepest shaft 30 feet. Exploration in this locality only recently has received serious consideration.

POVERTY GULCH GOLD MINING CO.—Incorporated August, 1895; 3,000,000 shares, par $1. Principal office, Colorado Springs. H. K. Devereux, president; Henry C. Hull, secretary. Annual meeting, third Monday in August. In treasury, 1,311,633 shares; no debt.

Patented claims: Jim Blaine, Tam O'Shanter, Eagle, about 20 acres on Poverty Gulch. Ground attractively situated. Other desirable holdings are being secured. It is a proposition worthy the attention of the keen speculator.

PREMIUM GOLD MINING CO.—November, 1895, the Premium Gold Mining Company and the Summit Mining and Milling Company were consolidated, the united company being the Gold Crater Mining Company, which see.

PRINCESS EULALIA GOLD MINING CO.—Incorporated February, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. F. F. Frisbee, president. S. I. Altman, secretary. Annual meeting, latter part of February. In treasury $150,000 shares, no debt.

Claims: Monitor, Virginia, Great Eastern, Yellow Jacket, about 35 acres; location not supplied. Shaft 80 feet. Nothing of moment accomplished.

PRINCESS GOLD MINING CO.—Incorporated May, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. Charles H. Dudley, president; Ira P. Trickey, secretary. Annual meeting last Wednesday in February. In treasury, 12,000 shares; no debt. Paid one dividend, $20,000, November, 1895.

Patented claims: Mollie Bell, 10 acres on Raven Hill; Little Mildred, 10 acres; Gray Eagle, 2.33 acres, both on Beacon Hill. Mollie Bell, leased to September next. A good vein has lately been opened with promise of soon being a steady shipper. Formerly Mattie D., on Raven, belonged to the company and was sold to the Ingham Consolidated Gold Mining Company (Limited).

PROPOSITION GOLD MINING CO.—Incorporated September 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. Henry Russell Wray, president; H. Hutchinson, secretary. Annual meeting, first Tuesday in October. In treasury, 200,000 shares; $1,800; no debt.

Claims: Elk Run Extension Nos. 1 and 2, full claims, a mile west of Mound City, in section 26; patents in progress. Holdings to be developed by lessees and applications are being considered.

PROVIDENT GOLD MINING CO.—Incorporated September, 1894; 1,500,000 shares, par $1. Principal office, Colorado Springs. H. S. Ervay, president; W. G. McCall, secretary. Annual meeting, first Wednesday in September. In treasury, 450,000 shares; no debt.

Claims: Homestake, Forrest, Hurricane, Unknown, Texas Star, Grubstake, Bushwhacker, Kentucky, Pueblo, Tall Pine, Jay Gould. Will secure title to 73 acres on west slope Big Bull; patent in progress, A locality of prospective worth. Tunnel 170 feet long is being driven at right angles to the claims.

RAILWAY CONDUCTORS MINING AND MILLING CO.—Incorporated March, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. James S. Fuller, president; W. J. Auraud, secretary. Annual meeting, latter part of March. In treasury, 80,000 shares, no debt.

Patented claims: Home, Surprise, J. J. L., 23 acres on Arequa Gulch; 10 lots, each 50 by 200 feet, in Arequa town site. Also a tunnel and a tunnel site through Guyot Hill. Company is working J. J. L. and Home, where veins are exposed.

RAILWAY POSTAL CLERKS' MINING AND MILLING CO.—Incorporated March, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. R. H. Magee, president; George Meldrum, secretary. Annual meeting, March 20. In treasury, 300,000 shares; no debt.

Claims: Lorena, Alsace, Divide, probably 22 acres, south of Battle Mountain; Mollie Eppert, about 6 acres, on Tenderfoot Hill; on which patents are in progress. Peep of Day, south of Battle Mountain, Amanda and Bonner are other locations of the company. Half of Lorena is leased to December, 1896

RAMONA MINING AND MILLING CO.—Incorporated January, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. E. S. Johnson, President; J. B. Harvey, secretary. Annual meeting, second Tuesday in January. In treasury, 109,000 shares; no debt.

Patented claims: Lizzie S., Phœnix, Inez A., Ramona, 25 acres, on Raven Hill. Phœnix is worked under a lease that expires next January. Several veins have been found, though as yet none are paying propositions.

RAVEN GOLD MINING CO.—Incorporated April, 1894; 1,500,000 shares, par $1. Principal office, Colorado Springs. E. M. De La Vergne, president; Charles E. Noble, secretary. Annual meeting, second Tuesday in January. No treasury stock; no debt.

Patented claims: Raven, Snowy Range, Princess E., Maid of Erin, Gregory, 30 acres, on Raven Hill. Richness of Raven fissure demonstrated by two tunnels, upper 1,100 feet, lower 1,400, with drifts and cross-cuts. It is one of the most persistent and valuable veins in the district. But little stoping done, and $200,000 produced, practically while opening the mine. This is the only mine that has furnished a name to one of the hills of the Golden Circle. It has contributed but little to the outpouring of treasure the current year, as operations were tied up due to a pending sale which was consummated in

October. A Boston syndicate secures this storehouse of treasure at a bargain—$450,000. Unless the signs are all at fault it will be one of the largest producers for 1896.

REBECCA GOLD MINING CO. (LIMITED).—Incorporated May, 1895; 200,000 shares, par $5. Principal office, Colorado Springs; transfer office, New York, 33 Wall street. H. R. Lounsbery, president; G. Louis Boissevain, secretary. Annual meeting, latter part of May.

Patented claims: Rebecca, C. O. D., 14 acres, on Poverty Gulch. The C. O. D. vein gave fame to this locality in 1894. Laterally it has been traced for 2,000 feet, 1,500 feet in Rebecca territory. Ore chute lengthens in depth, being 60 feet on first level and 200 feet on the 250-foot level. Eight months ago it was sold to a French syndicate. A perpendicular shaft and improved surface plant are recent improvements. Yield, $240,000, with only a small amount of mining accomplished. One of the noteworthy new uncoverings of treasure during November was made in this ground, which probably contains not fewer than two rich veins.

RED CLOUD GOLD MINING CO.—Incorporated November, 1895; 1,000,000 shares, par $1. Principal office, Denver. C. B. Wilson, president; John G. L. Dohme, secretary. Annual meeting in December. In treasury, 250,000 shares; no debt.

Claims: Nevada, Black Cat, Camperdown, Yorkton, probably 35 acres on Cow Mountain, in process of patent. Deepest hole 20 feet. One of the many new exploration undertakings of the Greater Gold Belt.

RED UMBRELLA GOLD MINING CO.—Incorporated October, 1894; 500,000 shares, par $1. Principal office, Colorado Springs. H. P. Lillibridge, president; W. S. Reynolds, secretary. Annual meeting in January.

Patented claim: Red Umbrella, 2 acres, on Raven Hill, near Moose. This fraction has proved a shipper. Three shafts —220, 130 and 50 feet respectively. The company secured a bond on this ground for $15,000, due May next, which is already practically taken care of.

RENO MINING AND MILLING CO.—Incorporated April, 1892; 1,000,000 shares, par $1. Principal office, Denver. C. F. Harkinson, president; R. D. Thompson, secretary. Annual meeting, second Thursday in April. In treasury, 17,134 shares; debt, $200.

Patented claims: Reno, T. E. Merritt, Bon Ton, 17 acres, in Poverty Gulch. Leased to September next. A neighborhood where more active mining is in progress than ever before in the history of the camp.

REPUBLIC GOLD MINING CO.—Incorporated August, 1895; 1,000,000 shares; par $1. Principal office, Colorado Springs. Wm. M. Banning, president; Chas. Merrick, secretary. Annual meeting, first Tuesday in September. In treasury, 146,000 shares; no debt.

Patented claims: J. I. C., 5½ acres, northeast end Battle Mountain; Janet W., 7 acres, on Beacon Hill. Patent is in progress on Sweepstakes, 1¾ acres, on Battle Mountain, and other claims are Laura M., Lester W., probably 7 acres, on Beacon Hill. North end J. I. C. leased to September next. One of the most alluring of the recent additions to the trading stocks. Exploration is being advanced on Sweepstakes by the company.

REX GOLD MINING AND MILLING CO.—Incorporated November, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. A. M. Selfridge, president; W. A. Davis, secretary. Annual meeting, third Monday in April. In treasury, 300,000 shares; no debt.

Claims: L. D., Hortense, John Sutter, about 30 acres, on Iron Hill; Spokane, probably 10 acres, on Mt. Pisgah. Development on L. D. is to be vigorously advanced the present winter.

RUBICON GOLD MINING CO.—Incorporated August, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. O. C. Townsend, president; H. V. Wandell, secretary. Annual meeting, second Tuesday in January. In treasury, 100,000 shares; $8,000; no debt.

Patented claim: Rubie, 8 acres, on southeast slope Bull Hill. One of the several rich ore bodies uncovered last spring in this locality was in Rubie territory. There is a strong, well outlined, north and south vein, with an abundance of paying mineral. Shaft, 260 feet deep. Production, $45,000.

RUTH D. MINING CO.—Incorporated January, 1894; 100,000 shares, par $1. Principal office, Colorado Springs. Sam'l H. Kinsley, president; F. A. Mangold, secretary. Annual meeting, second Tuesday in March. In treasury, 23,733 shares; no debt.

Patented claims: Yankee Jack, center of Sec. 32, 7 acres; Great Bonanza, 2 acres, on Raven Hill. Also Junietta, 1½ acres. Yankee Jack is leased and bonded to February 1, 1897, for $50,000. Company is conducting mining operations on Great Bonanza.

SACREMENTO GOLD MINING AND MILLING CO.—Incorporated April, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. J. T. Voss, president; Sherwood Aldrich, secretary. Annual meeting, fourth Tuesday in April. In treasury, 60,000 shares; no debt.

Patented claims: Sacremento, 7 acres, Midnight, 4 acres, together, on southeast slope of Bull Hill. Last Chance, a ¾ acre fraction, adjoining Sacremento on the west, is in process of patent. There are two leases on Sacremento that expire July next; the company has retained a half interest in lease on east 500 feet. There are three shafts that have produced; deepest 95 feet; 100 feet of drifting on two levels. Production, $4,000. Well marked vein with signs of valuable ore chute close at hand.

SADDLE MOUNTAIN GOLD MINING CO.—Incorporated October, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. G. W. Logan, president; P. H. Allison, secretary. Annual meeting, third Tuesday in October. In treasury, 500,000 shares; no debt.

Claims: Bonny Bell, Warriors' Mark, Green Flag, Wild Rover, Dublin, Starry Banner, about 10 acres each, between Saddle and Nipple Mountains. A new company, exploring an untried section. Deepest hole, 22 feet; tunnel, 30 feet.

SAFETY GOLD MINING CO.—Incorporated April, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. G. B. Sherwood, president; Chas. F. Potter, secretary. Annual meeting, first Tuesday in September. In treasury, 150,000 shares; no debt.

Patented claims: Little Hatchet, Potter, Tom Green, Sherwood, 32 acres, on Wilson Creek. Development is being prosecuted on Little Hatchet and Tom Green. Shafts, 95 and 50 feet; tunnel, 60 feet, and 60 feet of drifts. Two good veins. Outlook encouraging.

ST. LOUIS AND CRIPPLE CREEK MINING AND TUNNEL CO.—Incorporated April, 1894; 1,000,000 shares, par $1. Principal office, Colorado Springs. Frank G. Peck, president; C. W. Kurie, secretary. Annual meeting, first Tuesday in April.

Claims: Succor, 10 acres, Kurie, 10 acres, on Mineral Hill, on which patents are in progress. Its chief holding is the Taylor and Brown tunnel and tunnel site; tunnel 800 feet long, under Mineral Hill, and is being advanced. A number of veins have been cut, and considerable paying ore found. The company has quite recently secured ample funds to advance exploration under most promising auspices.

SAN BERNARDINO GOLD MINING CO.—Incorporated October, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. J. M. Riley, president; L. B. Farrar, secretary. Annual meeting, October 15. In treasury, 364,000 shares; no debt.

Claims: Gratiot, Magpie placers Nos. 1 and 2, about 50 acres, southeast slope of Mt. Pisgah, patent under way. Other claims: Peck, Triangle, same locality. A region that furnishes numerous evidences of paying mineral.

SANTA FE GOLD MINING CO.—Incorporated April, 1894; 1,250,000 shares, par $1. Principal office, Colorado Springs. H. S. Hawks, president; T. C. Delany, secretary. Annual meeting, latter part of April. In treasury, 25,000 shares; no debt.

Patented claim: E. A. H., 10.3 acres, on Big Bull Mountain. Patents are in progress on Paul Revere, Elna M., Midas and Everett, in a group, on Big Bull Mountain. Gold Medal placer, 15 acres, is a holding of the company. E. A. H. has a vein with small seams of good pay.

SAVANAH GOLD MINING CO.—Incorporated November, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. Dr. B. B. Grover, president; Ike Brunner, secretary.

Annual Meeting, first Tuesday in December. In treasury, 550,000 shares; no debt.

Claims: Bennett T, Bright Morning, Little Eddy, Jno. Knox, about 40 acres, northeast of Tenderfoot Hill, in process of patent. Deepest shaft, 53 feet. Quite a body of low grade ore exposed.

SECURITY GOLD MINING CO. — Incorporated October, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. J. A. Sill, president; H. H. Dorsey, secretary. Annual meeting, first Tuesday in November. In treasury, 200,000 shares; no debt.

Claims: Virginius, on Bull Hill; Hidden Treasure, southwest of Mound City; Greenwood, Greenwood No. 1, McKinley, on east slope Grouse; all nearly full claims, on which patents are under way. Virginius leased to January, 1897. Company will work its other holdings.

SHASTA MINING, MILLING AND PROSPECTING CO. — Incorporated March, 1892; 1,250,000 shares, par $1. Principal office, Colorado Springs. Douglas Mitchell, president; W. W. Williamson, secretary. Annual meeting, March 14. In treasury, 79,000 shares; debt $400.

Claims: Joe Johnson, Ashby, Donna, Mary Anderson, Sitting Bull, probably 40 acres, on Johnson Mountain, near Mt. Pisgah, in process of patent. Deepest shaft, 60 feet; tunnel, 50 feet; drifts, 50 feet. A pioneer enterprise in that territory.

SILVER LEAD MINING AND INVESTMENT CO.—Incorporated October, 1895; 2,000,000 shares, par $1. Principal office, Victor. William Dunn, president; S. P. Rudolph, secretary. Annual meeting, second Tuesday in January. In treasury, 800,000 shares; no debt.

Patented claims: Stockton, Hardscrabble, Silver Lead, Golden Treasure, 29 acres in a group, five miles south of Salida in Chaffee county; Lion Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10, 100 acres, a mile and a half south of Victor town, patent under way; also Mullee B., Hamilton and Leland. The promoters are confident of demonstrating that the southern limits of the Golden Circle will be soon extended to take in this section.

SILVER STATE MINING AND MILLING CO. — Incorporated March, 1892; 700,000 shares, par $1. Principal office, Colorado Springs. M. S. Rafield, president; P. H. Allison, secretary. Annual meeting, first Monday in April. In treasury, 16,615 shares; no debt.

Patented claims: Monday, 8 acres, on Tenderfoot; Modock, 6 acres, on Galena Hill, north of Grassy station. Alice E., a full claim, on Trachyte Mountain, southwest of Gillett, is being patented. The company has ten full claims. on Cow Mountain, Monday is bonded for $30,000 to October next.

SLIVER GOLD MINING CO. — Incorporated November, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. A. A. Carnduff, president; W. H. Coffin, Jr., secretary. Annual meeting, second Tuesday in January. In treasury, 500,000 shares; no debt.

Claims: Gold Mine, Sliver, about 10 acres, on south slope of Squaw Mt., on which the title is practically secured. Shaft 40 feet. This is to be numbered among the best of the more recent propositions.

SPECIMEN GOLD MINING AND MILLING CO. — Incorporated December, 1893; 1,200,000 shares, par $1. Principal office, Colorado Springs. Thos. H. Edsall, president; Clarence Edsall, secretary. Annual meeting, in January. In treasury, 200,000 shares; $3,500; no debt.

Patented claims: Specimen, 10.33 acres, on southeast side of Bull Hill. A number of veins cut through this ground. After a checkered career, the property became a shipper early in the past summer, and has produced $35,000. South 400 feet leased to May next. Main shaft, 175 feet, and 1,000 feet of drifting. Worth of ground demonstrated by lessees.

STANDARD MINING AND LAND CO.—Incorporated April, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. J. A. Vorhees, president; W. W. Williamson, secretary. In treasury, 200,000 shares; no debt.

Claims: Doorkey, McCumber, Morning Star, Malta, Bangor, 40 acres, on Tenderfoot Hill. Shaft, 20 feet; tunnel, 40 feet. Owing to the renewed interest in the northern end of the district the company has started systematic prospecting.

STAR OF THE WEST MINING AND MILLING CO. — Incorporated February, 1892; 1,000,000 shares, par $1, Principal office, Colorado Springs. C. H. White, president; C. A. Ralston, secretary. Annual meeting, latter part of February. In treasury, 55,000 shares; no debt.

Patented claims: Star of the West, Elkhorn, 10 acres, together, on Mineral Hill; leased to November, 1896. Shaft, 60 feet; from bottom a drift 125 feet, exposing strong vein. Numerous bunches and stringers of good ore, but thus far none in quantity. Production, $200.

STRAUB MOUNTAIN GOLD MINING AND TUNNELLING CO. —Incorporated September, 1895; 2,000,000 shares, par $1. Principal office, Denver. J. H. Waters, president; Edward T. Evans, secretary, In treasury, 1,000,000 shares; no debt.

Claims: Baldwin, Evans; location not supplied. The important possession of the company is the Baldwin and Evans tunnel and tunnel site, located in January, 1894.

SUMMIT MINING AND MILLING CO.—Incorporated April, 1892; 1,000,000 shares, par $1. In November, 1895, this company and the Premium Gold Mining Company were consoldated; the new company is the Gold Crater Mining Company, which see.

SYLVANITE GOLD MINING CO.—Incorporated November, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. H. V. Wandell, president; A. J. Smith, secretary. Annual meeting, third Wednesday in November. In treasury, 150,000 shares; $835; no debt.

Holdings consist of a lease on lots 38, 43, 54, 55, 56 in Sec. 16, Tp. 15 S., R. 69 W., 50 acres; lease expires November 22, 1913. Company is advancing development. Shaft, 60 feet deep.

TELEGRAPHERS' CONSOLIDATED GOLD MINING AND TUNNEL CO.—Incorporated October, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. F. H. Woomer, president; J. P. Smith, secretary. Annual meeting, latter part of October. In treasury, 300,000 shares; no debt.

Holdings consist of the Telegraphers' tunnel and tunnel site and Operators' tunnel and tunnel site. Latter is in 100 feet. Work on each being prosecuted. Their locations not furnished.

TEMOMJ MINING AND MILLING CO.—Incorporated April, 1892; 1,000,000 shares. par $1. Principal office, Colorado Springs. H. S. Vaughn, president; C. N. Thompson, secretary. Annual meeting, April 27. No treasury stock; debt, $700.

Patented claims: T. E. M. O. M. J., Clayton E., Baby McKee, 26 acres, on Gold Hill. North third of all three claims leased to January, 1896; remainder of ground to January, 1897. Shaft, 160 feet; tunnel, 70 feet. Though in an aristocratic locality, and having a strong vein, no paying ore in quantity has yet been discovered.

TENDERFOOT HILL TUNNEL GOLD MINING AND MILLING CO.—Incorporated October, 1895; 2,000,000 shares, par $1. Principal office, Cripple Creek. R. H. Palmer, president; Clarance A. Miller, secretary. Annual meeting, January 1. In treasury, 1,400,000 shares; $5,000; no debt.

Holdings consist of a tunnel and tunnel site under Tenderfoot Hill. Tunnel is in 500 feet. A vein has been encountered that carries considerable fair grade mineral. One of the recent organizations of which but little is known.

TOKALON GOLD MINING CO.—Incorporated November, 1895; 1,000,000 shares, par $1. Principal office, Colorado Springs. President and secretary not yet chosen; directors for first year: Edgar T. Ensign, Wm. H. Elwood, Wm. Deutsch, Henry B. Hayden, Paul Hutchinson.

Claims: Blue Bird, Tokalon Nos. 1 and 2, about 30 acres, for which patents have been applied; also Chicago, 10 acres, on Rhyolite Mountain; Evening Star, 10 acres, on Grouse Mountain. All claims are being worked by company. Highly flattering expert reports have been recently made on some tracts.

TRACHYTE GOLD MINING AND MILLING CO.—Incorporated June, 1893; 1,500,000 shares, par $1. Principal office, Colorado Springs. Walter C. Frost, president; W. E. Smiley, secretary. Annual meeting, second Tuesday in July. In treasury, 175,000 shares; no debt.

Patented claim: Trachyte, 8 acres. There is a lease on about 3 acres to November, 1896. Shaft 120 feet; tunnel 100 feet, and 50 feet of drifting. The promoters give pleasing reports of their ground.

TWIN SISTERS GOLD MINING CO.—Incorporated November 1892; 500,000 shares, par $1. Principal office, Denver. Henry Trowbridge, president; L. E. C. Hinckley, secretary. Annual meeting, third Tuesday in November. In treasury, 60,000 shares; no debt.

Claims: Twin Sisters Nos. 1 and 2, Sentinel, probably 13 acres on Raven Hill in process of patent. Entire property bonded for $15,000 to March next. Desirably situated ground; liable to prove of value in very short order.

UNCLE SAM MINING AND MILLING CO.—Incorporated October, 1892; 750,000 shares, par $1. Principal office, Colorado Springs. J. W. Augden, president; K. McDermid, secretary. Annual meeting, first Thursday in January. In treasury, 200,000 shares, $425; no debt.

Patented claims: Alta, Little Leota, 16 acres, on northeast slope of Bull Hill. Little Leota is leased and bonded for $35,000 to June 1, 1897. Company is exploiting the Alta. Ground desirably located.

UNION GOLD MINING CO.—Incorporated June, 1892; 1,200,000 shares, par $1. Principal office, Colorado Springs. E. S. Johnson, president; C. H. Morse, secretary. Annual meeting, first Monday in July. In treasury, 189,175 shares; debt, $8,000. Dividends $37,128.91; last, $10,608, on June 1, 1895.

Patented claims: Pike's Peak, Orpha May Nos. 1 and 2, Delmonico, 35 acres, on Bull Hill. Solid Muldoon, an acre fraction, on Bull Hill, is being patented, leased to June 6, 1896. Pike's Peak, Orpha Mays and Delmonico worked by company. A network of veins, explored by a score of shafts; three deepest, 335, 320, 255 feet respectively, with 4,632 feet of levels and drifts. Gross gold production, $350,000. Ground worked by lessees until a few months ago, and mine left in unsatisfactory condition, which is about rectified. Under pesent conservative management agreeable returns may be counted on.

UNION PACIFIC MINING AND MILLING CO.—Incorporated June, 1893; 1,000,000 shares, par $1. Principal office, Colorado Springs. A. M. Ripley, president; W. G. McCall, secretary. Annual meeting, first Thursday after first Tuesday in June. In treasury 60,000 shares; no debt.

Holdings consist of 20-year lease on Lot 25, Section 36, State land on Grouse Mountain. Leased by Company to November, 1897. Vein carrying low grade is being developed with hopeful outlook.

UNITY GOLD MINING CO.—Incorporated November, 1895; 1,250,000 shares, par $1. Principal office, Colorado Springs. Harry L. Fagin, president; Phil. S. Delany, secretary. Annual meeting, third Monday in November. In treasury, 200,000 shares; no debt.

Holdings consist of 20-year lease on Lots 39, 40 and 59, on Section 36, State land east of Grassy townsite. A phonolite dyke lends promise of worth to the e shares; one of the most recently organized companies.

VICTOR GOLD MINING CO.—Incorporated February, 1893; 200,000 shares, par $5. Principal office, Denver. W. E. Johnson, president; R. H. Reid, secretary. Annual meeting, first Monday in August. No treasury stock. Dividends, paid, $475,000; last, $20,000, December 15, 1895.

Patented claim: Victor, 10.33 acres on Bull Hill. Victor Nos. 2 and 3 and Panther, possibly 30 acres, are in process of patent. Mining confined chiefly to Victor vein; a remarkable fissure for smallness, richness and persistency, having been proven laterally over 5,000 feet. Deepest shaft, 520 feet; over 3,000 feet of levels and drifts. Production in excess of $1,000,000. Here again is a vein that fully maintains its values with depth. Last summer a second vein was opened parallel to the original Victor, which gives evidence of turning out a generous producer.

VICTOR MINES AND LAND CO.—Incorporated November, 1893; 600,000 shares, par $1. Principal office, Colorado Springs. Warren Woods, president; F. M. Woods, secretary. Annual meeting, latter part of November. In treasury, 11,000 shares, $17,500; no debt. Dividends paid, $23,560; last, December, 1895, of $2,945.

Patented claims: Part of Blue Stocking, 4 acres on Battle Mountain; Pitkin, 2 acres on Squaw Mountain. Former leased to July, 1896; later to September, 1896. Both are producers with bright outlook.

VINDICATOR MINING CO.—Incorporated September, 1895; 1,200,000 shares, par $1. Principal office, Denver. General Herman Sturm, president; J. L. Frazer, secretary. Annual meeting, fourth week in September. In treasury, 500,000 shares; no debt.

Claims: Parts of Vindicator and C. O. D. No. 2, 5 acres, on southeast side of Bull Hill, in process of patent, which is held under bond of $10,000, due November next. Other desirable ground is being acquired. Vindicator is being systematically explored, with excellent results.

VIRGINIA M. CONSOLIDATED MINING CO.—Incorporated February, 1892; 1,000,000 shares, par $1. Principal office, Colorado Springs. C. E. Noble, president; A. W. Conacher, secretary. Annual meeting, last Wednesday in April. In treasury, 56,000 shares; no debt.

Patented Claims: Lincoln, 9.89 acres, on Gold Hill, above Anaconda town; ¼ Bonnie Bell, joining Cripple Creek town on the north. Other claims are Virginia M. and Road Placer, north of Cripple Creek town. Northeast ½ Lincoln, leased to March 15, and southeast ½ to October next. Main shaft, 50 feet; main tunnel 120 feet; 750 feet of levels and drifts.

WALTER GOLD MINING CO.—Incorporated December, 1894; 500,000 shares, par $.. Principal office, Colorado Springs. Job A. Cooper, president; S. S. Bernard, secretary. Annual meeting, latter part of December. No treasury stock; no debt.

Patented claim: Walter, 7½ acres, on Raven Hill, next to Elkton territory. Mining operations conducted through Elkton shaft and under Elkton management—half the capital stock owned by Elkton company. Gross gold production, $65,000.

WESTERN UNION GOLD MINING CO.—Incorporated October, 1895; 2,000,000 shares, par $1. Principal office, Colorado Springs. Sidney R. Bartlett, president; Louis C. Hall secretary. Annual meeting, first Monday in October. In treasury, 1,030,000 shares; $2,500; no debt.

Claims: Moltre B, 7 acres; Fergr, Polar Star, Helene, Hamilton, a 30-acre group on Mineral Hill; Ocean King, Little Kitten, Pole Stone, 25 acres, on Tenderfoot Hill. There are four small shafts and three tunnels, each 180 to 200 feet in length.

WEST VIRGINIA GOLD MINING AND MILLING CO.—Incorporated October, 1895; 1,000,000 shares, par $1. Principal office, Fairmont, West Virginia; transfer office, Colorado Springs. T. W. Fleming, president; C. B. Fleming, secretary.

Claims: Guadaloup, Little Lulu, 20 acres, near Cripple and Four-Mile creeks; Omonde, 4 acres on south slope of Bull Hill; on which patents are in progress. Three shafts from 45 to 100 feet deep.

WHEEL OF FORTUNE GOLD MINING CO.—Incorporated July, 1894; 1,500,000 shares, par $1. Principal office, Colorado Springs. William Clark, president; Fred F. Horn, secretary. Annual meeting, . In treasury, 200,000 shares; no debt.

Patented claim: Wheel of Fortune, 7 acres, ¾ mile west of Gillett. Gold Charm, 10 acres, is in process of patent. Other claims: Von Moltree, Falcon, Boston, 30 acres, all in same neighborhood, and Little Nellie placer on Spring Creek. Wheel of Fortune has a shaft 130 feet in depth. Good vein carrying low grade mineral.

WILSON CREEK CONSOLIDATED MINING AND MILLING CO.—Incorporated May, 1892; 1,000,000 shares, par $1. Principal office, Buena Vista. A. J. Lauterman, president; J. M. Bonney, secretary. Annual meeting in May. No treasury stock; no debt.

Patented claims: Lucky Gus, 7 acres, Buena Vista No. 2 and Bonnie Bell, 9 acres, Effie, 5 acres, Orphan Boy, 10 acres, Little Giant and Dessie, 11 acres, all east and south of Bull Hill. Lucky Gus bonded for $100,000 to February next. It has a shaft, 260 feet deep and considerable drifting, proving well marked vein. During past summer took rank among the producers and is credited with yield of $30,000. But little development on other ground. A number of leasing propositions are being considered.

WORK MINING AND MILLING CO.—Incorporated March, 1892; 1,250,000 shares, par $1. Principal office, Colorado Springs. Irving W. Bonbright, president; J. Arthur Connell, secretary. Annual meeting, first Monday in April. No treasury stock. Debt, $2,500.

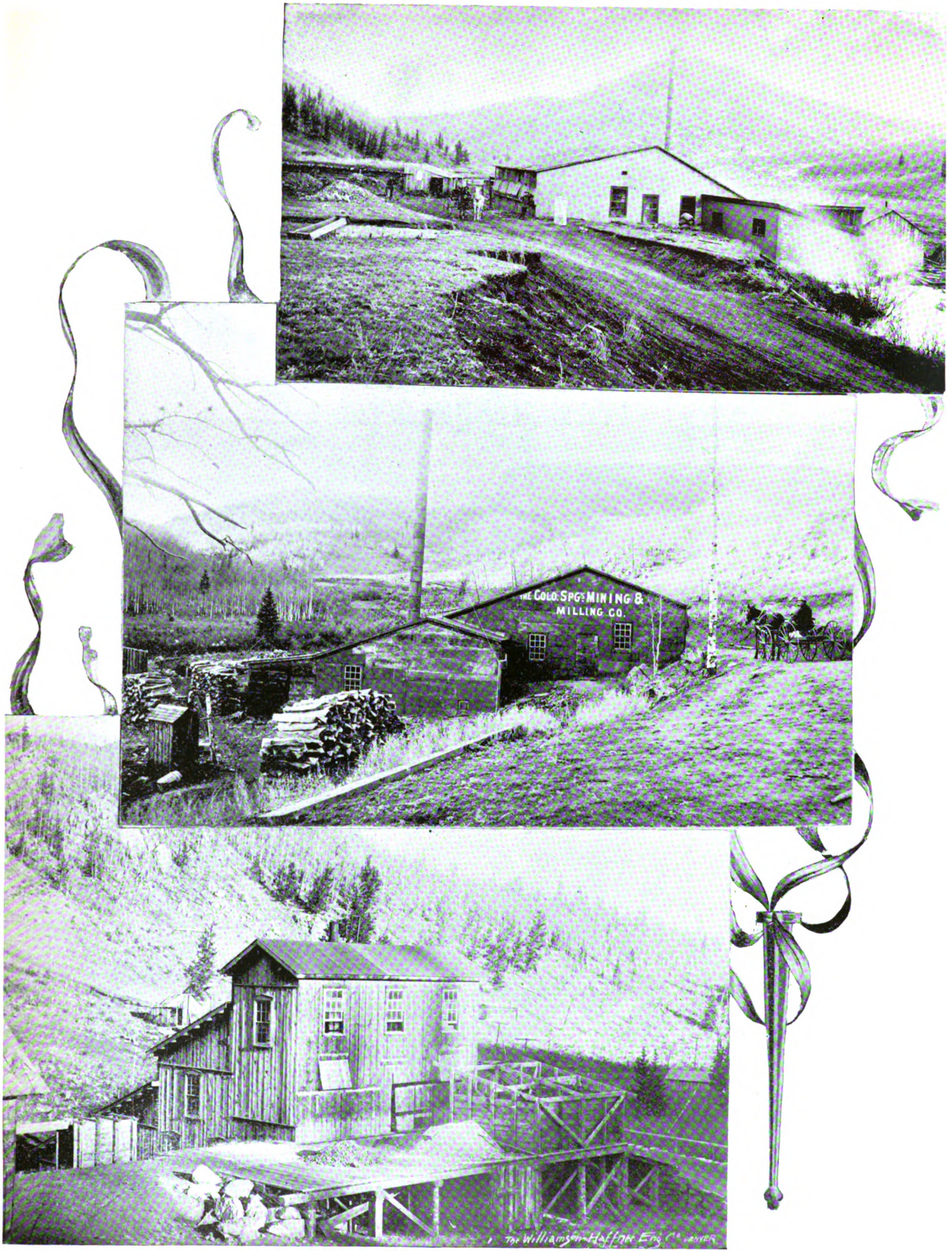
Patented claims: Morning Glory, Morning Glory Nos. 2 and 4, Poorman, Ida B, Little Clara, 38½ acres, on Squaw Gulch. All ground but about 15 acres is leased; 3½ acres of Morning Glory No. 4 is bonded for $25,000, due December 1, 1896. Shaft, 235 feet; tunnel 600 feet and 1200 feet of levels and drifts. Property shows a marked improvement. One of the strongest fissures of the district is here exposed. Gross gold production about $40,000.

WORLD MINING AND MILLING CO.—Incorporated March, 1892; 500,000 shares, par $3. Principal office, Colorado Springs. E. S. Johnson, president; J. B. Harvey, secretary. Annual meeting, fourth Wednesday in April. No treasury stock; debt, $7,000, trust deed, overdue.

Claims: West View, 4½ acres, on Globe Hill; Emerald, Bond, 18 acres, on Tenderfoot; Hole-in-the-Ground, Mohawk, 7½ acres, on Grassy; all in process of patent. Originally had other good holdings but titles were neglected, due to bad management by former officers.

## .. Note ..

A second edition of this book is already in preparation and will be issued on or about February 1, 1896. Officers of companies will confer a favor by sending any corrections of the outlines of their companies, or further facts bringing their achievements up to date, to the publishers, 3 Pike's Peak Avenue, Colorado Springs, Colorado. Blanks for other companies will be supplied on application, and in order to insure their appearance in proper form, these should be made out and returned with as little delay as possible. This new edition will contain a complete table of all Cripple Creek companies to January 1, 1896, as well as the record of the production of the district for the current year, 1895, now rapidly nearing the end, and other matter of interest.




BEAVER CREEK STAMP MILLS

MINERAL PALACE, PUEBLO

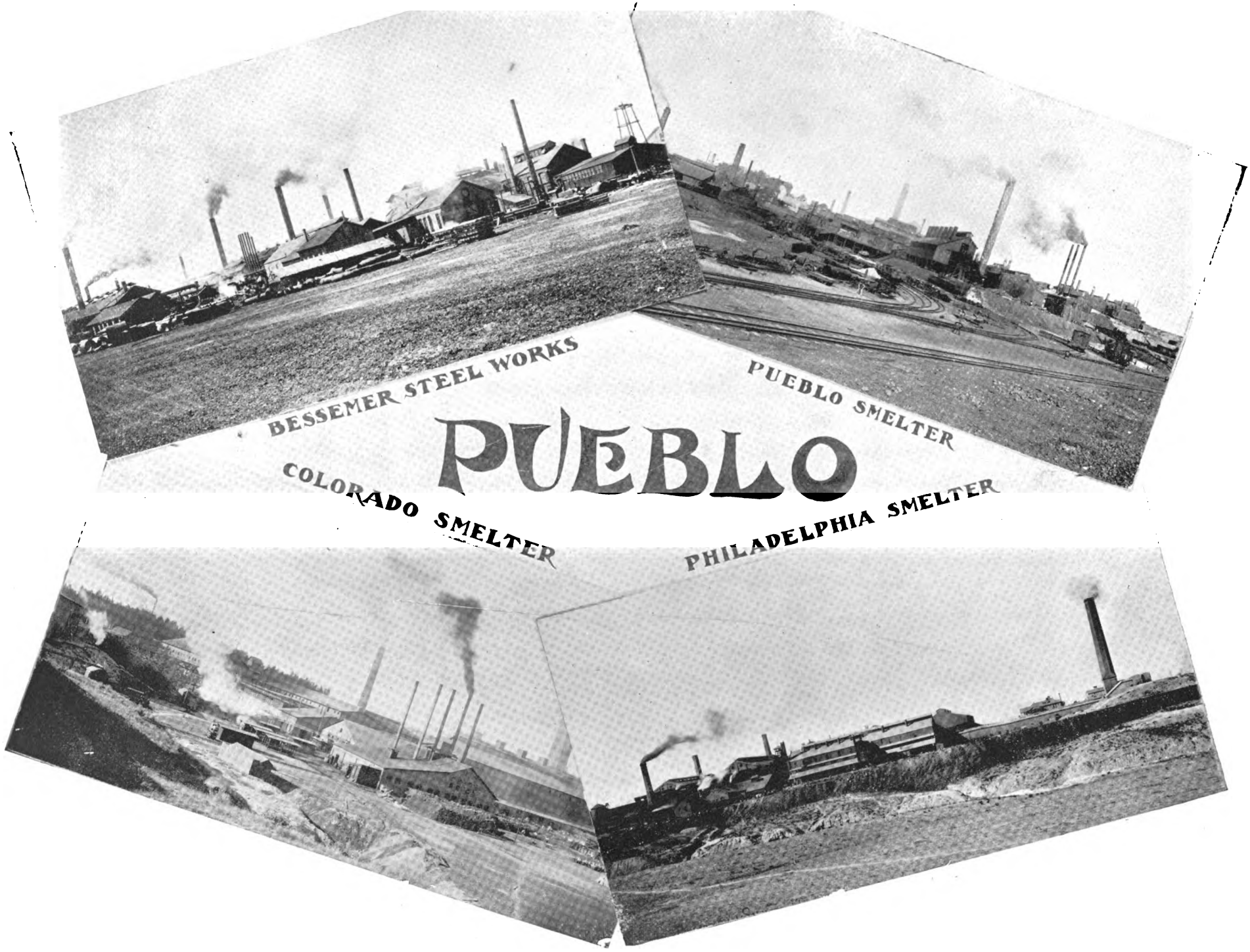
# Pueblo—The Bullion City

Mining is the calling on which is based the industrial fabric of Colorado. Hence, any Colorado city whose welfare is conditioned upon industries which go hand in hand with mining must necessarily prosper.

The one great adjunct to extensive mining operations is the smelter, which reduces the crude ore and forwards to the markets of the East its refined products of gold, silver, lead, copper and zinc. Pueblo ranks first as a smelting mart in the United States, where not only the ores of Colorado are treated, but those of Montana, Idaho, Utah, New Mexico and Arizona as well. These States and Territories comprise the most extensive and the richest treasure yielding area in the world. The natural location of the city, a common point of six great railway systems, abundance of cheap fuel near at hand, and other advantages, give assurance that it will maintain its prestige as a smelting center.

Next to smelters in importance are the works and factories which supply all kinds of mining machinery. It is Pueblo's proud boast that the city controls that character of trade for the Rocky Mountain domain. From the magnitude of its smelting industry it is styled the "Bullion City;" while the "Pittsburg of the West" and "Iron City" are appellations by which it is designated on account of the location there of the steel rail and iron plant of the Colorado Fuel & Iron Company, a concern which employs 1,800


PUEBLO MINING STOCK EXCHANGE, PUEBLO



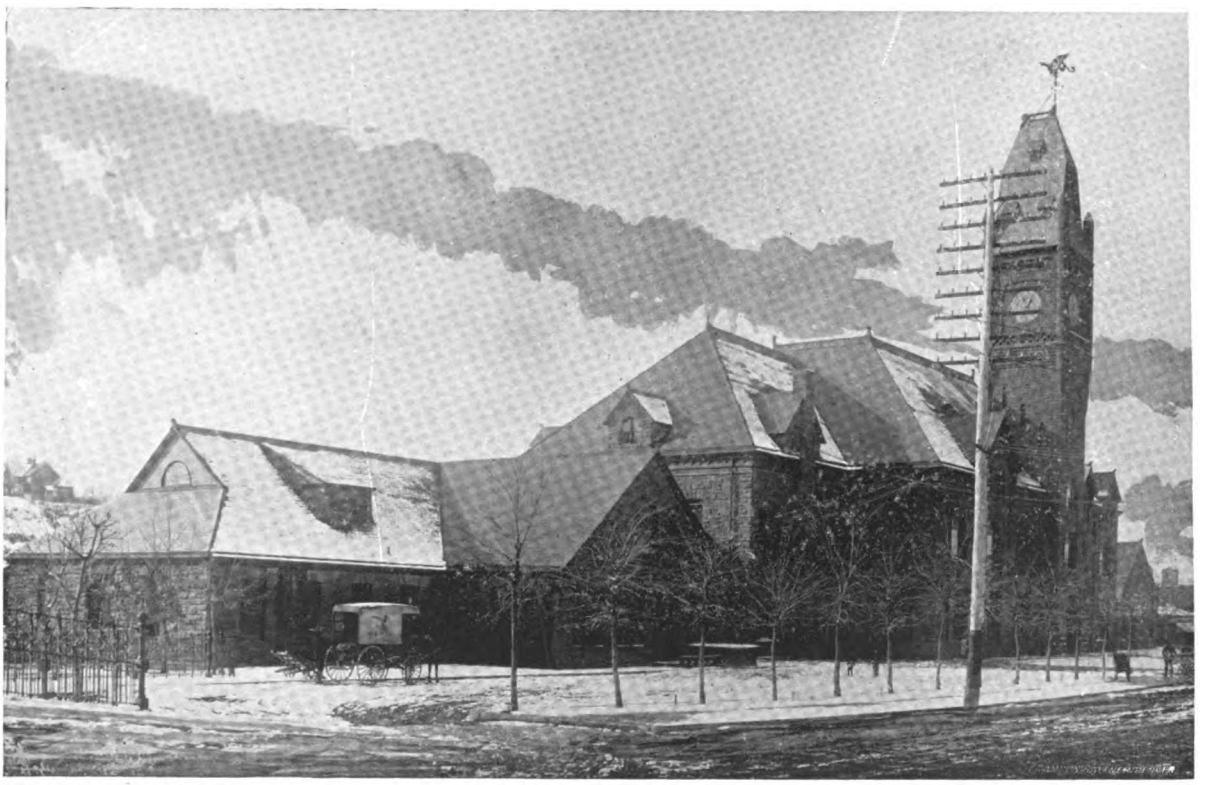
GRAND OPERA HOUSE, PUEBLO AMERICAN NATIONAL BANK

men, and manufactures all the steel rails used on western railroads. It is the only plant of the kind west of Chicago. Some of the iron ore used by this company is unique, as it contains five ounces of silver to the ton—a Leadville product.

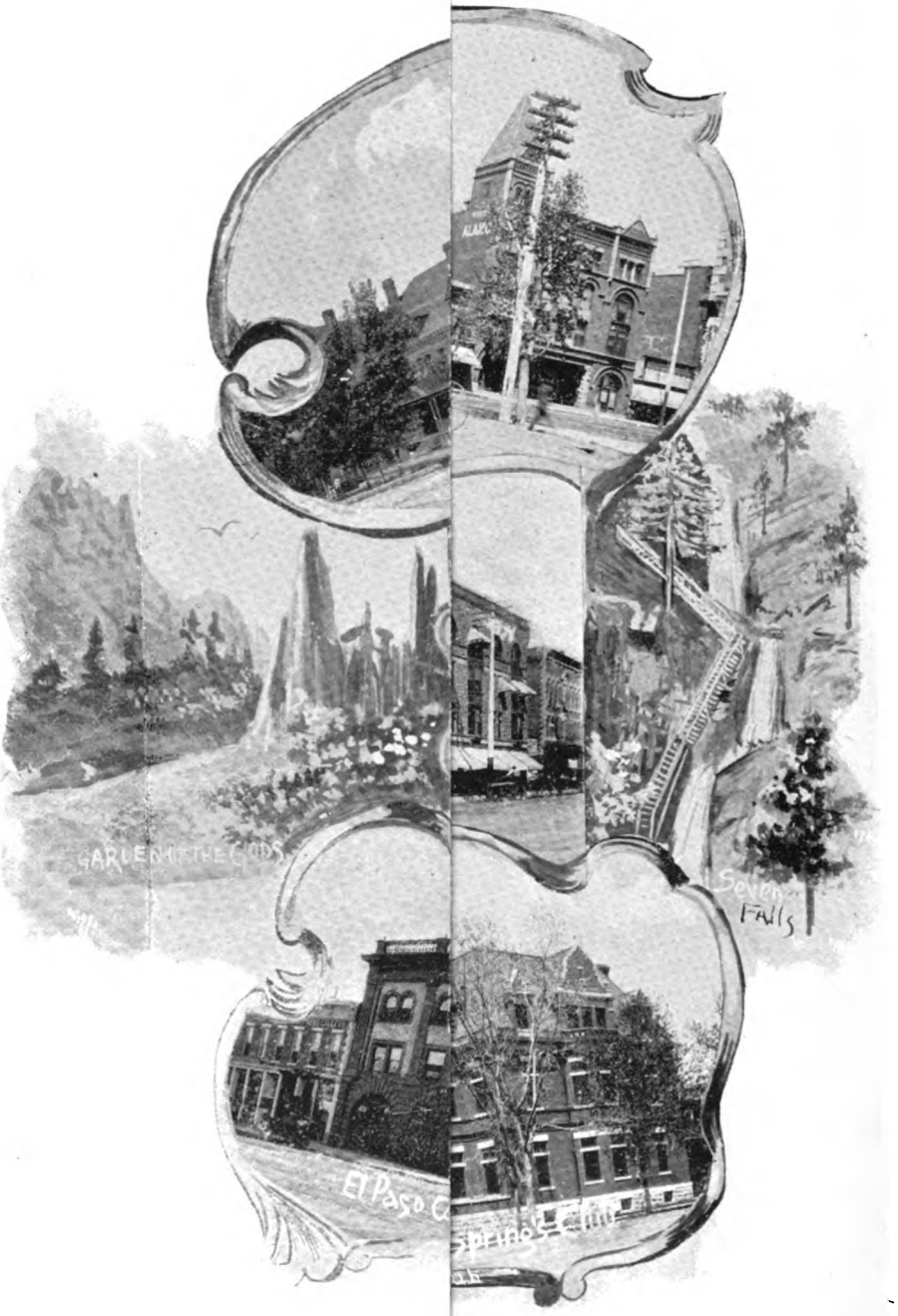
Due to location and established smelters, Pueblo is credited with treating the larger portion of the output of Cripple Creek. The district is distant but seventy-two miles by established rail connection and sixty miles via the Pueblo, Pike's Peak & Cripple Creek Railroad, now being surveyed.

Here is found a city of 40,000 people and all the diversified industries which constitute a growing and prosperous community Pueblo has held her own through the hardest times, is increasing in population and commercial importance, and is the entrepot and smelting point for the ores of the greatest fissure-vein gold district ever discovered—Cripple Creek. Many believe it is destined to attain the distinction of the largest commercial city in the United States between St. Louis and San Francisco.

As long as the Rocky Mountains continue to pour forth stores of gold and silver, the Bullion City will continue to increase in importance.



UNION DEPOT, PUEBLO



M. E. Church

Presbyterian Church

Episcopal Church and Parish House

SOME CRIPPLE CREEK CHURCHES

# Colorado Springs Resorts

## BROADMOOR

While Colorado Springs is environed by a wealth and variety of scenic attractions unmatched in any other like area on the globe, its visitors are not left to these alone for recreation and enjoyment. Enterprise and public spirit have added many features of interest to supplement the wonders and charms of natural scenery; but no one of these compares with the Broadmoor Casino in magnitude and in importance and in lavish expenditure of money. This elegant resort is situated on the great slopes of Cheyenne Mountain, southwest of the city and near the entrance to the Cheyenne Cañons. The main casino building, the creation of an architect of international reputation, is a strikingly handsome and ornate structure, and stands in the midst of large and beautifully kept grounds. Its western front is upon a lake of considerable size, while from the broad piazzas upon its eastern side one gazes out over the limitless expanse of the Great Plains. Within are halls for music and polished floors for dancing; reading and drawing rooms and cosy corners with great divans; dining and billiard rooms—in short, it is a complete casino. During the season two daily concerts, popular and classical, are given by a celebrated orchestra, with frequent dances upon the Casino's polished floors. The restaurant is maintained upon a high plane of excellence. Frequent special entertainments are provided, such as concerts, boat races, swimming matches, etc., while the Saturday afternoon children's dances have always been popular. Broadmoor Casino is a veritable temple of pleasure, which, in its pure, chaste and satisfying architecture, in the beauty of its furnishings and in the elegance of all its appointments appeals to the refined taste and the æsthetic sense, constituting it an attraction of Colorado Springs to which our most extravagant expressions could do no more than simple justice. It has commanded the admiration, not unmixed with astonishment, of thousands of visitors, and none the less when these had perfect acquaintance with the most noted resorts of the East, and with the French, German and Italian spas.

Broodmoor is destined to become one of the finest suburbs of Colorado Springs. With its background of great, cañon-riven mountains and the magnificent eastern sweep of the plains, it has a location unequalled and unapproachable. Around the beautiful Casino are already springing up the villa and the cottage; and soon the great sweeping slopes at the foot of Cheyenne Mountain will present a fair picture of tree-bordered avenues and charming homes.

A notable addition made during the past season is the Hotel Broadmoor, a spacious structure which adjoins the Casino and corresponds with it in architecture. This hotel will be in readiness for the opening of the coming season, and is sure to spring into instant popularity. It will be a favorite resort not only for tourists but also for many residents of Colorado Springs, who will find it a most delightful and convenient place for their summer outing. It should be stated that Broadmoor is connected with the city by electric railway. Colorado has many resorts; but with its matchless location, its already famous Casino and its close proximity to the greatest resort center of the Rocky Mountain region, it will not be surprising if among them all Broadmoor shall take the foremost place.

## HOTELS

Since Colorado Springs is a city with a large transient population and annually entertains thousands of tourists, it is of course well supplied with hotels. Its principal hotel, the Antlers, is likewise the foremost in Colorado and the Rocky Mountain region, and has an enviable reputation throughout the land. Erected in 1882 at a cost of $200,000, it was several years ago practically doubled in size at a further expenditure of fully $75,000. It has a commanding situation at the head of Pike's Peak avenue, with an unobstructed view of the mountain range. It is a strikingly handsome structure of cut stone, thoroughly modern in construction and complete and elegant in all its appointments. Its cuisine is of noted excellence, and thousands of visitors from all parts of the world have pronounced it one of the most delightful of hotels.

The Alamo is a handsome and commodious brick structure with brown stone trimmings. It is supplied with all modern conveniences found in first-class hotels. The Alamo is a very popular house, requiring frequent enlargements to keep pace with its increasing patronage.

The Alta Vista is a substantial three-story brick structure which, while designed principally for families and permanent guests, is nevertheless patronized by transients wishing to avoid the bustle of the larger hotels. It is noted for the home-like atmosphere which pervades it, and for the superiority of its table.

The Elk is a large brick structure and furnished with modern conveniences. It is a well conducted house and has a large patronage.

The Spalding is also a large house, supplied with modern comforts and conveniences. The fact that it has grown from small beginnings to its present size proves that it acceptably fills the wants of the traveling public.


STREET SCENE IN VICTOR

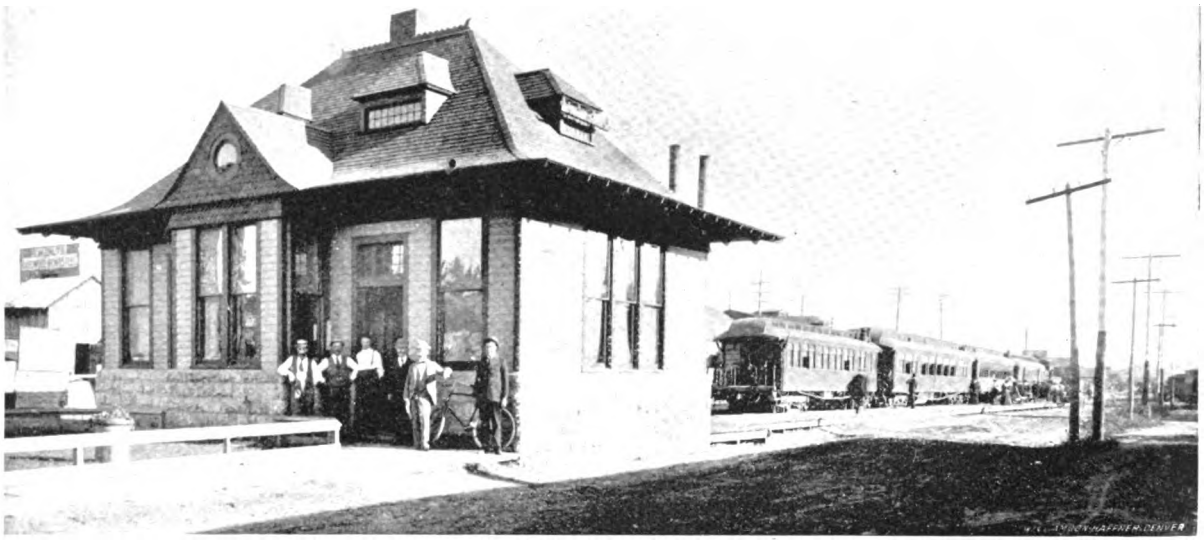
# Bound with Steel Bands

Scarcely more than three-score years ago—to be exact it was the 6th day of July, 1835—the town of Worcester, Massachusetts, then a place of 6,000 inhabitants, was effervescing with excitement, the occasion being the formal opening to that point of what is now known as the Boston & Albany Railroad. It was this road that one of its promoters was wont to quaintly call, "but a 44-mile extension of Boston Long Wharf."

During the previous month the people of the Bay State had participated in the opening of a railroad to the South and of a railroad to the North, as they were this day celebrating such an event in connection with a road to the West. At a dinner in the Town Hall to which the guests of the occasion were invited, ex-Governor Davis proposed this toast: "Railroads. We are willing to be rode hard by such monopolies."

In the light of the more or less popular agitation against railway corporations, which has, during the past fifteen or twenty years, and from time to time broken out in different parts of the Union, there may be a seeming hardihood in this toast proposed by a Massachusetts governor of so long ago. At the time of its utterance, the toast was but an expression of a natural and a universal sentiment. It was pronounced in the exuberant days of the beginning of great things.

It has happened, nevertheless, from that day to this, from Worcester to Cripple Creek, that the arrival of the locomotive engine, as it pushed its way farther and farther into the always receding frontier, has, by the people of the plains and of the mountains, been joyously welcomed with the expression of similar sentiments in whatsoever words these may have been clothed. It is not to the people of isolated or frontier communities, whose ears are hearkening for the sound of the iron horse; whose prayers are for its speedy coming, that "grinding monopoly" and "extortionate rates" are familiar expressions. Such



U. P., DENVER & GULF DEPOT, COLORADO SPRINGS. Departure of Pike's Peak Express.

only become current when the sound has been heard and the prayer answered. The least that can be said about it is that it is a story with two sides.

As regards the solution of its railway problem, the Cripple Creek mining district was fortunately situated. A railroad circle made up in its larger and Southern segment of the Rio Grande, and in its lesser and Northern, of the Midland Railroad, had been built around it. Two lines of communication with the outside world naturally presented themselves. The one to the South of greater distance but with a down-hill pull to the Arkansas River, offered a junction with the Rio Grande Railroad system; the other to the North of lesser distance, but more difficult of construction, with that of the Midland. Both opportunities were taken advantage of and resulted in the construction, respectively, of the Cripple Creek & Florence and the Midland Railroads, the former tying the camp both physically and by close traffic relations to the Rio Grande, and the latter to the Santa Fé railway system.

The importance to the camp of the construction of these two links in the chain of commerce was not alone to be gauged by the fact that the district was thereby joined to two great railway systems, but, rather, that by means of these there was placed at

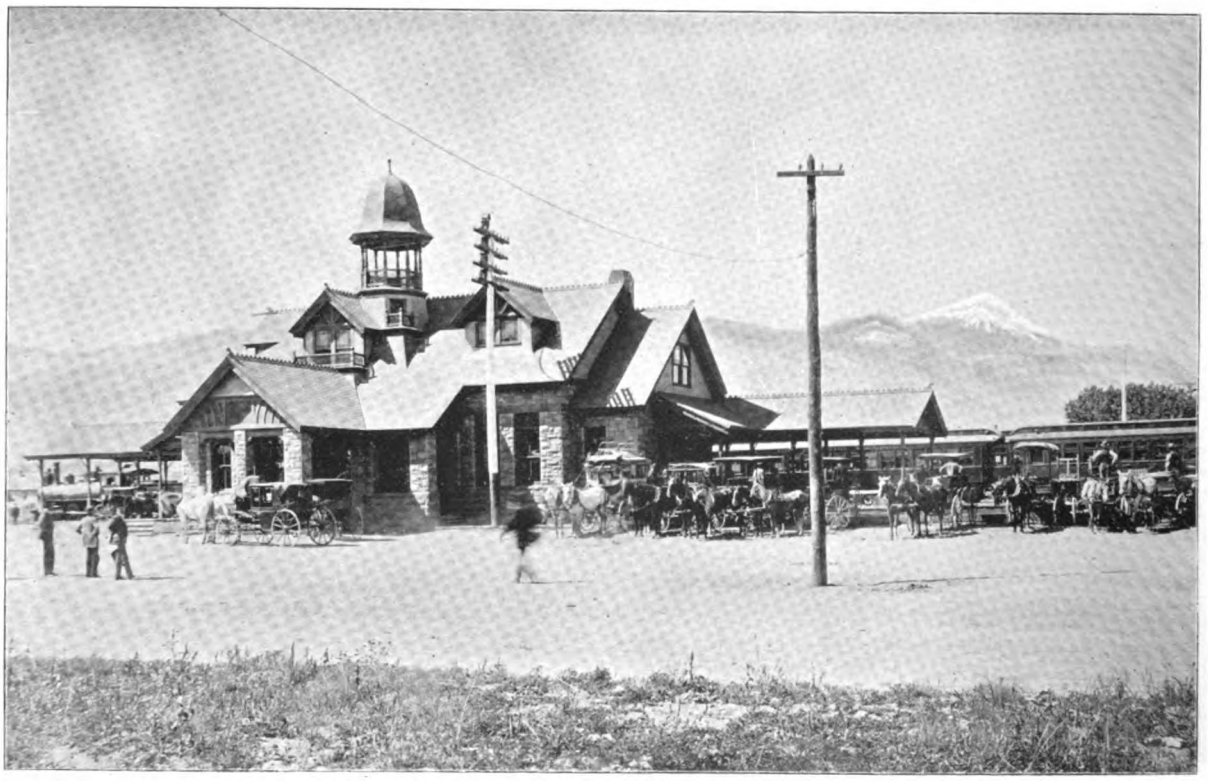
CIRCULAR TRESTLE. On Midland Terminal Railroad.

FLORENCE DEPOT. D. & R. G. R. R. Terminus of Florence & Cripple Creek Railroad.

its service the traffic facilities of the entire country. And yet the debt which is due the promoters and the builders of the Florence & Cripple Creek and of the Midland Railroads, for the keen foresight, rare enterprise and persistent energy which was by them displayed, can never be discharged in full, however much may be their financial gain.

The history of the Denver & Rio Grande Railroad, the splendid service of which is placed, by means of the Florence & Cripple Creek railroad, at the disposal of Cripple Creek traffic, forms no insignificant part of the history of Colorado. In its rapid development from a narrow guage road with baby rolling stock and uncertain purpose, into a broad guage, important factor in a transcontinental system, with its feeders, forerunners of civilization, to the South, Southwest and West, the people of the State have been intensely interested, and to its successive but always progressive managements profoundly grateful.

With those in whose hands has been the control of the affairs of this distinctly Colorado road, the watchword has ever been "Forward." With them, in seeking a reason for extension westward or north or south, the question has never been, "What traffic is at hand?" but has rather been, "What will development do; what are the traffic possibilities?" With them the motive has always been, not to wait upon the doing of others, but to act themselves and act first.



D. & R. G. DEPOT, COLORADO SPRINGS


DIVIDE DEPOT. Colorado Midland Railroad. "All change for Cripple Creek." Midland Terminal Railroad.

The traveler, who, seeking health, wealth or information, takes passage with the Rio Grande, will not only travel safely and luxuriously, but will have open to him, and subject to his caprice, an illimitable vista of scenery, kaleidoscopic, with its swift changes from the pastoral to orchard and farm; from the river to the mountain torrent, and thence to its source—the melting snows of the higher peaks; from the shadows of the gorge and the darkness of the tunnel into the brighter sunshine above the clouds, and all this to a degree unequalled anywhere else in the world.

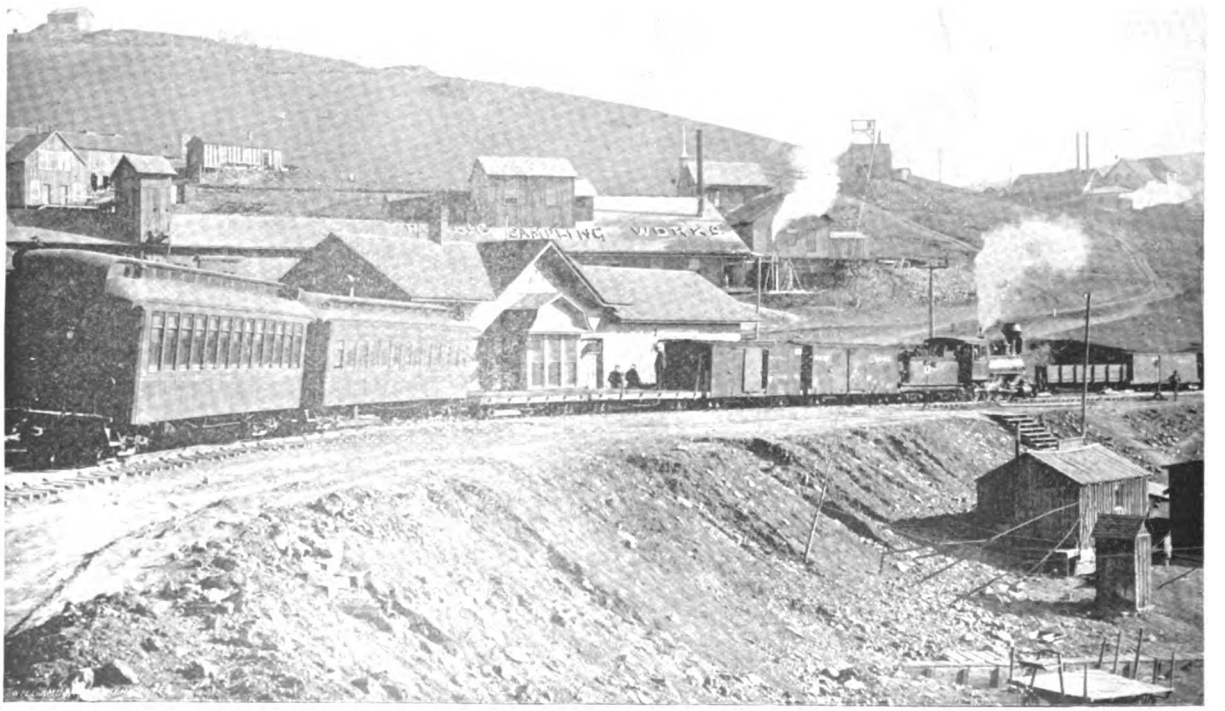
The Atchison, Topeka & Santa Fé, through its affiliation with the Midland, connects the Midland Terminal with the East and the West. Once a rival of the Rio Grande for the occupation of Colorado territory, that rivalry many years ago coming to a sudden end, the Santa Fé devoted its energies to reaching the Pacific by a more Southerly route. Later, however, its management becoming the owner of the Colorado Midland, extending from Colorado Springs to Grand Junction, it resumed more intimate relations with the commerce of the State. Being as it is one of the greatest railroad systems of the country, and about to be freed

SANTA FE AND COLORADO MIDLAND DEPOT, COLORADO SPRINGS

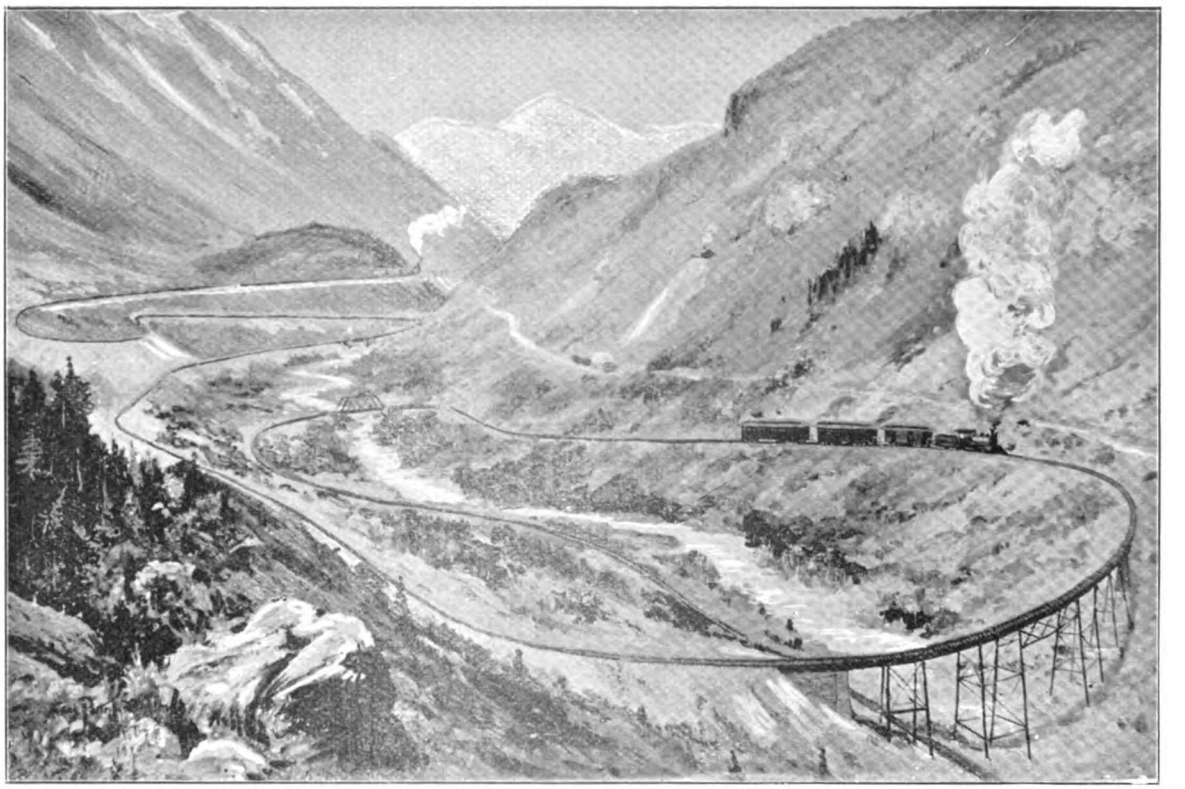
CRIPPLE CREEK DEPOT. F. & C. C. R. R.

from the shackles of a receivership, it may, and undoubtedly will, become a potent factor in the further development of Cripple Creek as well as of the State generally.

There are many railroads from the East and from the West which, through their various agencies, and in a greater or less degree, are assisting in Colorado's development and in bringing to the knowledge of the people of their respective sections the delights of our health-giving climate, the beauties of our varied scenery and our splendid opportunities for investment. There is but one from the South. The Gulf Railway is essentially a Colorado enterprise. The project of connecting Denver and Colorado with the cities of Texas and the Gulf coast, was conceived by that pioneer among Western railroad promoters—Governor John Evans. To his genius, coupled with his untiring energy and great ability as a financier, was due, not alone the conception, but as well the realization of the idea. Had it not been for the unfortunate purchase of this road by the Union Pacific, and the temporary



VICTOR DEPOT. F. & C. C. R. R.



THE LOOP. Near Georgetown. Greatest one-day ride in Colorado. Leave Denver in morning, arrive returning at 6:00 p. m.

crushing out of its splendid possibilities by that corporation, the story of the benefits to Colorado derived from its construction would now read as romance. With the passing of the Union Pacific system into the hands of receivers, and the consequent segregation of the Gulf and Gunnison divisions, with an independent management, has given new life to an enterprise the opportunities of which are boundless.

The growing interest in Cripple Creek and other mining districts of the State among the people of Texas and the Southeast, testifies to the wide-awake methods employed by the Passenger Department of this road in presenting the facts respecting the openings afforded by Colorado to the investor and the advantages which the State possesses as a place of temporary or permanent residence. The improved service between Denver, Colorado Springs and Pueblo, as well as throughout the entire system, and the

GRAY'S PEAK. On the U. P., D. & G. R. R.

UNION DEPOT, DENVER

increased earning capacity of the investment, as already developed, show what a loyal, discerning devotion to the interests of both the road and the public will do. If the same business-like methods, now the feature of the management, are continued in the future, and especially if these can be applied under a permanent separation from the Union Pacific System with its blighting influences, the Gulf Road will prove a faithful ally to Colorado's every interest, and will aid most materially in its future growth and development, and in bringing the people of the Rocky Mountain country into closer touch with the South. At present the Gulf Road delivers its contributions to Cripple Creek's stock of sinew and enterprise to the Rio Grande at Pueblo and the Midland at Colorado Springs. It is in the air, and something more than a remote possibility, that ground will shortly be broken for extension of the "South Park Line" from South Platte Station to Cripple Creek. With the construction of such a branch, the Gulf System would not only furnish the shortest line between Denver and Cripple Creek with a time schedule of four hours, but would thus, without an intermediary, tie itself to the great gold regions.

Cripple Creek may well rejoice in its traffic facilities, present and prospective. The district may not only boast of its extensions of the "long wharves" of either coast, but as well that it has become a fixed point upon the endless chain of the nation's commercial highway.

FLORENCE & CRIPPLE CREEK LOCOMOTIVE

FLORENCE OIL WELL


FINIS