

# DEEP CREEK RICHES THAT STILL AWAIT A RAILROAD

**D**EER CREEK, that vast undeveloped mining region west of Salt Lake, has passed another year without a single shovel of dirt being turned on the grade for a new railroad. But,

as usual, there are rumblings in the air and the ever hopeful Deep Creeker still breathes the atmosphere of expectation that 1904 will bring the iron horse to their country.

Cheaper transportation will make the Deep Creek country, but until that can be had progress will be slow.

## STILL HOPEFUL OF A RAILROAD.

But strange it seems that this great country has been neglected so long and many opportunities thereby lost. However, the belief is general that Deep Creek is going to have connection with the outside world by bands of steel before very long and that the Western Pacific will be the first line to penetrate the desert to the west and open this land to the investor and the miner.

## PROGRESS HAS BEEN MADE.

Advances have been made in the way of development work during the past year and in some properties quite radical changes for the better have been recorded. At the Utah mine pleasing changes have come about in physical conditions, enabling the company to resume the payment of dividends. The Clifton Copper Belt, Galena, Garfield and many other propositions of merit have been worked and the results have been most gratifying. The Four Metals is another concern that has displayed energy in opening up its properties and provision will be made for milling facilities next year.

## VISITED BY MARCUS E. JONES.

Prof. Marcus E. Jones, the well known geologist and metallurgist, probably knows the country as well as anyone. He has visited the various camps of the Deep Creek country in search of information relating to the formations and the character and location of the veins. He is one, out of many, that sees a grand future for this part of the state.

## COMPILED INTERESTING DATA.

Not long ago Prof. Jones compiled a lot of interesting data and a booklet was published, protected by the copyright laws, concerning this section. By his permission, the "News" is privileged to reproduce extracts from his report, which, no doubt, will be read with interest, particularly by those who are yet strangers to the Deep Creek country, which has a length of 150 miles by 100 miles in width.

## A GREAT MINING REGION.

By common consent the great mining region west of Salt Lake city and the Quivira mountains is called the Deep Creek region, for the only mines of consequence that are found begin with the Dugway range and run westward to Nevada. The highest, best watered and most heavily mineralized of all these mountains are the Deep Creek, which lie on the western side of the Great American Desert and about 70 miles at the north end from the Southern Pacific railroad. The road leading from the railway is nearly level and without rivers or hills, so that it is a natural inlet to this country. The Deep Creek range runs almost due north and south and has its crest and highest point in Mt. Iapah, which reaches an elevation of about 12,000 feet. The mountains are rugged, with an average slope of about 30 degrees and are deeply cut by canyons which are for the most part accessible at least up to the timber by wagon road. The range itself is about 70 miles long. It gradually descends from Mt. Iapah on the south to the base of the Great American Desert, which is about 6,000 feet high and separates it from Mt. Moriah. It then rises as you go farther south into a lofty but very short range, which terminates at Mt. Moriah and Jeff Davis peak near Osceola. About 10 miles south of Mt. Iapah the Deep Creek range splits and one branch of it swings around to the westward at an elevation of about 9,000 feet and forms the Glencoe mountains which lie east of the southern end of Antelope valley. North of Mt. Iapah the range descends very gradually for 40 miles and then rises abruptly in a conical peak called Dutch Mountain, from which it drops at an angle of 30 degrees into the Great American Desert. On the eastern side of the range lies the desert at an elevation of 4,400 feet. This extends to the southward along the entire base of the Deep Creek mountains and even to Jeff Davis peak in a beautiful but dry valley called Snake valley. From this face of the mountains streams run down to the edge of the desert from the valley which support several ranches, raising hay, grain and fruit. These streams as they issue from the mountains have sufficient fall and force to supply considerable power, but they dry up before they run far into the valley. On the western side of the mountains lies the Deep Creek valley, which is a narrow, but well watered area some 20 or 30 miles long and a mile or so wide, whose elevation is about 6,000 feet above the sea. Deep Creek is fed by the many streams which flow down from the mountains, and support many ranches which raise hay, grain and root crops. At its lower end Deep Creek passes through a canyon and then emerges on the desert near Dutch Mountain, where there are also several ranches. The agricultural resources of this region are limited, but sufficient to supply the demand at the mines. Artesian wells are obtainable both in the valley and on the edge of the desert, and furnish large quantities of water. The mountains are covered from one end to the other with pinon and cedar, and for a distance of about 20 miles along the highest part and over a small area on Dutch Mountain are rather heavily timbered with spruce and fir.

## MT. IBAPAH PEAK.

As we stand on the crest of Mt. Iapah, the greatest peak in western Utah,



PROFESSOR MARCUS E. JONES.

Well Known Mining Expert Who Tells of the Treasures of the Deep Creek Country.

the desert lies at our feet like a floor to the northeast, and out of its southern edge rise island-like ranges in the midst of the floor.

The first range is Fish Springs, about 20 miles away to the east, which rises like a hog-back, its crest being only about 10,000 feet above the sea, and less than 6,000 feet above the floor. It is covered by pinon and cedar, and far to the south at its extreme end in the Swazy mountains is a little heavy timber suitable for lumber. There are some springs, but not so many in this range. The only mining camp in it is on the northern end, and about 5,200 feet above the sea. Just beyond this range are the greatest springs in the whole region, which have given the name to the range.

About another 20 miles from the crest of the Fish Springs mountains and parallel with them to the east is the Dugway range, similar in all respects to the Fish Springs mountains, except that it is a little lower and has at other mining camp at the far south at Detroit.

Beyond the Dugway mountains lies the old river bed, an interesting sight to the curious, but one only an ancient bed of a river that long ago has ceased to flow. East of this we see scattered and low ranges for perhaps 50 miles, and then come to the lofty Antelope mountains, which border the cultivated area of Utah on the west. Here we again come to running streams, cultivated fields, and forest-clad mountains with almost perpetual snow.

As we look westward from Mt. Iapah, in the Deep Creek mountains we see a series of lofty mountains in ranges, and the ranges we are on, but they are set close together, with no great floor between, as is the case to the eastward, but there are low passes through them, which enable a traveler to go easily from one to the other without great detours, all these rise from an elevation of about 6,000 feet above the sea, which is about the average elevation of the valleys, and the highest rarely reach 11,000 feet altitude. The first range to the west is the low Teano range, which west of us fades into low hills, but to the north rises into a lofty range. Then comes the Antelope, a low and broken range, beyond that rises the great, Schell Creek range, with its almost perpetual snow and copious streams, then comes the great Steptoe valley, then the Egan range west of it, and so on through Nevada to the greatest range of all the East Humboldt.

The general structure of the country makes it specially favorable for travel, for the country as a whole is as level as a floor, and the mountain ranges are so interrupted that a person can go from one to the other without the necessity of passing over any of them. Therefore, all the hardships of rugged canyons, hard paths, deep snows and rocky roads are absent, while the traveler can pass swiftly over the ground on good roads most of the year. Even the mountains themselves are easy to climb to the low lying mines. There is not a pack trail in the whole region.

**THE DUGWAY DISTRICT.**  
This camp was discovered about the same time as most of the other camps of Utah. Some of its claims have been held continuously from that time until now. Doubtless one of the chief reasons for its discovery was the fact that it so closely adjoined the overland stage road. This route passed only a few miles to the south of Dugway, where, in going over the range, quite a cut had to be made to get over the summit, which gave the name to the camp and range.

This range of mountains lies in the midst of the southern part of the Great Salt Lake Desert, about 100 miles west of Salt Lake City. It is a low range, which along its crest is thickly covered with pinon and cedar, and has an abundance of grass and little water. The slopes are not so steep as to prevent access to any of the mines by fair wagon roads. The southern end of the range, called Detroit, has quite extensive deposits of the precious metals and lead, copper and bismuth, as well as

average width of the veins is generally about three feet.

The contact veins which are not connected with porphyry dykes, but adjoin the main porphyry body, are the Yellow Jacket group, near the Silver King and the Peterson claims.

In the Dugway district are a number of good properties under development. The Four Metals mine is among the principal ones and during the year some extensive bodies of lead ores have been developed. George L. Moats of Salt Lake is manager of this mine. The Peterson, Yellow Jacket, Buckhorn, Leona, Silver King and Golconda are other groups which are looked upon favorably. Charles H. Scheel, C. H. Thompson and a number of officials of the Oregon Short Line railroad are interested in this district.

## GRANITE DISTRICT.

Continuing, Prof. Jones speaks of the Granite district, which lies due north of the Dugway range about 10 miles. This range is all granite and has many quartz veins following along nearly in line with the strike of the range, they carry copper and silver.

## THE DETROIT DISTRICT.

We follow south from Fish Springs to where the main range breaks down into a low pass, and from there we go to the southeast about 25 miles, and strike the southern extension of the Dugway mountains, which is called the Detroit district.

Here is the same formation as we had at Fish Springs, viz.: Quartzite and limestone, which rise in a semi-circular mountain, beginning at the old Detroit spring, and running south two or three miles. This mountain is very steep and rugged, and at its base on the north, has a series of veins, carrying iron and copper, which run through the time in an arc of a circle until they come to a large outcrop of porphyry, adjoining the Detroit spring on the north. These veins all carry large bodies of iron, some lead, and some copper, but have never been opened to such an extent as to determine their value.

On the other side of the porphyry hill, before mentioned, there is an immense

tact of the porphyry and the lime, on the western side of the porphyry and the lime, on the line of mineralization, from which there run out into the line the most fantastic chimneys, bug hole and fissures imaginable, which have been eaten out by the acids flowing from the veins. These chimneys have been filled with lead, going nearly pure galena, with from 100 to 500 ounces in silver to the ton, and almost no gold and copper.

In 1891 it happened that one of these boulders of lead was found cropping out on the surface, and on this boulder was located the Utah mine. Afterwards the Galena was located adjoining the Utah on the north, and later still the Meteor, adjoining the Galena. A few hundred feet to the southwest there is another narrow fissure, with little or no porphyry, running along the line practically parallel with the Utah vein. On this vein, where the silver ore was found on the surface, which has continued with greater or less regularity to considerable depth in feet from the surface, where it seems to have more ore than was found on the surface.

The Emma, Wild Cat and other claims were located on this vein. Because of the high value and the highly concentrated ore of this camp, Fish Springs has produced and shipped large quantities of ore. From the year the Utah was discovered until now, there never has been a time when these mines have not been shipping ore and hauling it nearly 80 miles by wagon to the railroad, and paying handsome dividends in addition. Miles of drifts and slopes have been run on both the Utah and Galena, and the former is down at present to the water level, a distance of about 80 feet from the surface, where it seems to have more ore than was found on the surface.

The Utah mine has produced more than 6,000 tons of ore, and about 50 per cent lead and 145 ounces silver of a value of considerably in excess of \$500,000. The Galena mine has a production record of more than 5,000 tons. Among other Fish Springs properties is the Meteor.

On the edge of the desert, southwest of Fish Springs, there are quite a

duced various kinds of mineralization in the veins, but are always characterized by considerable iron and some gold and silver, and in many places by heavy mineralization in lead and copper. The contact of this porphyry with the limestone is still more heavily mineralized. At a later date the porphyry itself, especially around Clifton, and extending to the edge of Gold Hill, was slightly cracked and heavily mineralized into innumerable chutes, which open out into large bodies of ore. This region of ore chutes and porphyry is about three miles wide by five miles long. Prominent claims in this porphyry are the Gardner property, the Victor, Frankie, Calaveras, Wolcott, Carmen claims, etc. On the contact with the lime and porphyry on the south, there are several mines. In the line just beyond the contact on the south, lie the Midas, Ward, Commonwealth, White and other claims. On the northern end of the porphyry lie the great Gold Hill properties, which show a greater surface mineralization than any other mining camp in Utah. The Cane Springs property has a number of veins and blowouts of ore, adjoining the porphyry in the line which have shown very high values in gold. The Alvarado is on the contact of the porphyry and lime about a mile east of the Cane Springs, and has produced many thousands of dollars in gold. About a mile further east than the Alvarado, but still on the contact of the porphyry and lime, lies the Gold Hill mine, with its immense deposits of gold, copper, silver and lead.

## DRY CANYON.

Dry Canyon lies in the same range at mountains, eight miles to the southward of the Midas, in a gulch which runs up from the valley below, and is supplied by an excellent spring near the mouth of the gulch. In the right hand fork is a large body of dolomite limestone, which is cut by a very strong porphyry dyke running to the north-west and south-east, and has mineralized the limestone, both on the contact and in the gaps veins running out from the contact in the limestone. The mineralization seems to be of very high

nation is somewhat different. We have an immense body of granite forming a core in the center of the camp, which is flanked by a number of lead veins from one to four feet wide, pitch nearly vertically, and with beautiful carries some silver.

In the Clifton district are a number of good copper propositions, among which is the Lucy L. owned by the Wilcan McViche and others. Dunmen also own claims in this section. The Midas, in which John Dorn of the Con. Mercier mine, is extensively interested, is in this camp.

## GOLD HILL DISTRICT.

This is perhaps the most extensive camp in the entire Deep Creek region, so far as its mineralization is concerned.

It lies about eight miles south of Dutch Mountain, in an opening in the range which drains to the east. It is easily reached by a wagon road which runs to all the mines. There are two springs in the center of the camp, which supply it with water. There is considerable fuel on the adjoining hills.

The mineralization consists of veins lying in the limestone or quartzite adjoining a circular mound of porphyry. Beginning on the western side of this porphyry we find the limestone highly mineralized and broken up into a series of veins running nearly south and north-west. These veins lie close together in marble, and carry high values in gold and copper.

The Bonhomme and Cane Springs are the principal mines in the marble. You can follow all these veins a distance of nearly five miles to the southeast across the canyons and over the hills in one long series of claims, which break out every few hundred feet along the veins, carrying large quantities of iron, copper and gold. Some of the prospects have been opened to the depth of 100 feet, but most of them have only been opened to short distances. These veins soon pass out of the limestone and enter the porphyry, but they keep the same general direction. The ore after the veins leave the limestone is found chiefly in chutes in the porphyry, which vary in width from a few inches to 10 or 15 feet. The amount of mineral which occurs in this series of veins, must be the mountain. These veins soon pass out of the limestone and enter the porphyry, but they keep the same general direction. The ore after the veins leave the limestone is found chiefly in chutes in the porphyry, which vary in width from a few inches to 10 or 15 feet. The amount of mineral which occurs in this series of veins, must be the mountain.

## IN DUTCH MOUNTAIN.

Beginning at the far northern end of the Deep Creek region, just where it drops down into the desert, there is a great conical mountain of limestone and quartzite, called Dutch Mountain. The mineralization in this camp is very peculiar. At an elevation of about 1,000 feet above the desert is found a series of at least two porphyry dykes, which break out in the northeastern corner of the mountain and run in an arc of a circle across the canyons and over the ridges for a distance of three or four miles, and then cross over the crest of the mountain to the south adjoining Gold Hill, and forming over half a circle. These dykes both appear to dip the same, at about an angle of 45 degrees away from the mountain. The contact of the porphyry with the limestone carries a vein of iron or lead ore varying from a few inches to 10 or 11 inches in width. These veins carry pure lead carbonate, or galena, carrying about 20 ounces of silver to the ton.

This series of veins is taken up by the Utah mine and the Monster mining property.

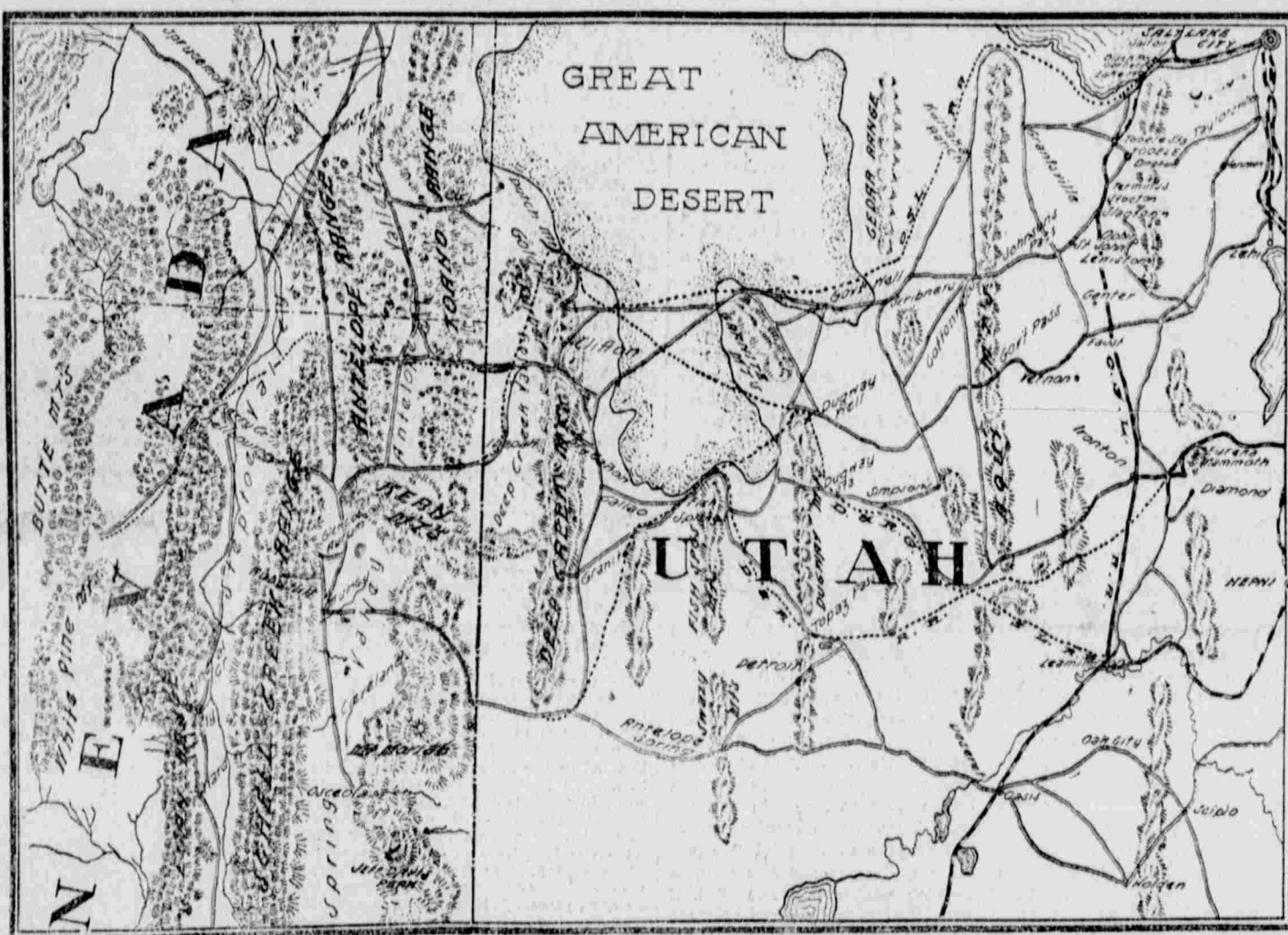
Just over the state line in Nevada are located the Spring Creek, Glencoe, Kibbey and other districts, which rightfully belong to the Deep Creek region.

## THE HOTTEST PLACE.

Between India and Africa lies the hottest place on earth. The Aval islands cover a fairly extensive area of the Persian gulf, lying off the southwest coast of Persia, and it is the largest of these which enjoys the doubtful distinction of leading all perspiring competitors in the matter of heat. The mean temperature of Bahrain for the entire year is 99 degrees. July, August and September are unendurable, save for the natives. Night after night, as midnight comes, the thermometer shows 100. By 7 o'clock in the morning it is 107, and 108 degrees, and by 3 in the afternoon it is 140. It is stated by veracious travelers that 75,000 Arabs inhabit the Aval group, fully 25,000 living on Bahrain, in which connection Sir Henry Layard adds: "It would seem that a man can acclimatize himself to anything." The following are the temperatures at some of the hottest places in the different countries: Hyderabad, 105 degrees; Lahore, 107 degrees; El Paso, 113 degrees; Mosul, 117 degrees; Akra, 117 degrees; Death Valley, 122 degrees; Algiers, 127 degrees; Fort Yuma, 128 degrees; Jacobabad, 122 degrees; Bahrain, 140 degrees—Golden Penny.

## WONDERFUL CARVING.

In a museum attached to two almshouses at Kirkcubright, near Redcar, erected in 1676 by Sir William Turner Knight, lord mayor of London, is a wonderful carving of St. George and the dragon out of a single block of boxwood, the work of a poor prisoner, and it is valued at \$2,000. It is said that this piece of carving was the cause of a wager being once laid in a dispute as to its entirety. To prove that the work was one single piece of carving, it was plunged into a pot of boiling oil and allowed to remain for hours. All doubts were set at rest when it was withdrawn and found to be still complete. The prisoner who accomplished this marvelous piece of work used an ordinary penknife only.



MAP OF THE DEEP CREEK COUNTRY.

iron. The middle portion of the range has a remarkable and very extensive outburst of eruptive rocks, which carries the famous Utah tuff and certain rare minerals. The northern end of the range contains the mineral deposits.

The formation of the country is carboniferous limestone, having a general pitch to the southwest and underlain by quartzite. On the north this limestone has been cut and broken by immense intrusions of porphyry. Some of these porphyry dykes follow the bedding plane, but most of them cut the formation. The heaviest mineralization occurs in the line near the edge of the great porphyry body, which burst out and forms quite a mountain between the Silver King and the Yellow Jacket. The porphyry dykes run out from this body into the line are very often blind, showing themselves but seldom above the line, and therefore they are very hard to trace except by the veins which they have produced. Illustrations of this are the Silver King vein, the Morris claims, the Buckhorn, Golconda and many others. All these veins appear to be fissures and not contact veins with their metal deposits placed out in the line at a short distance from the porphyry. Many of the veins follow the usual trend of either southeast and northwest or southwest and northeast, but there are many variations from this rule. The dip of the veins is nearly always 45 degrees or more. The vein filling is generally iron, but there is occasionally quartz and baryte. Where the vein filling is mostly quartz, the ore is generally rather high in silver and carry little lead, but where the vein filling is iron, the ore is nearly always lead, carrying a small percentage of silver. Rarely do we find copper worth mentioning. Zinc has only been found of late in the lower workings of the Silver King. The

out-crop of high grade iron ore, which has never been utilized.

On the south of the limestone mountain, and near its crest, is an endless series of veins, crossing each other in all directions, most of them following porphyry dykes, which come to the surface only occasionally. Here is the most complex system of veins to be found anywhere in this country.

In one place is a large vein in some places 10 or 12 feet wide, carrying high grade copper, adjoining which is a valuable bismuth vein, and on a short distance to the north is an extensive gold vein, which has been known for many years as the Ithex mine. The Ithex mine has produced considerable quantities of gold and some copper, and has extensive workings and many openings along the vein. The great copper vein was opened at one time to such an extent that a copper smelter was erected some miles below at what is called the Warm Springs, and was run for some time on the ores from this mine.

## FISH SPRINGS DISTRICT.

This camp lies at the extreme northern end of the Fish Springs mountains, and about 25 miles east of the Deep Creek mountains, on the southern edge of the Fish Springs mountains.

The country rock here consists almost entirely of blue limestone, with a rather broad belt of quartzite some distance above the limestone, geologically.

This limestone on the western side of the mountain is cut by one or two porphyry dykes, which run nearly north and south, and extend to Dutch Mountain. The uppermost dyke is about 50 feet wide, and is one on which the most mineralization has been found. It appears to start near a large iron blowout just southeast of the little settlement of Fish Springs, and run perhaps a mile through the time, and stand almost vertical in the desert below. Along the con-

number of extensive veins which are prominent and well defined. At one time considerable work was done on these, but there has not been sufficient done to determine whether they contain large bodies of mineral or not.

**DEEP CREEK PROPER.**  
The Deep Creek region proper is confined to the Deep Creek range, and embraces Granite, Dry Canyon and the Dewey region, Clifton, Gold Hill and Dutch Mountain.

Geologically the Deep Creek mountains consist of a great ridge with a central granite core around Mount Iapah. Both north and south from this core, which is perhaps 10 miles long, schists are found which generally dip into the hill instead of following the slope, but along the length of the mountains dip away from the core. These schists are immediately overlaid by limestone, and in places by large bodies of quartzite, all of which are of Carboniferous age and extend to Dutch Mountain. The general slope, therefore, of these beds, is to the northward on the main range, and the range, but local uplifts and intrusions of porphyry often disturb the natural dip.

During the Tertiary age, and subsequently, there were outbursts of eruptive rock east of the main range, which now show as low hills between the Fish Springs and Deep Creek mountains. From these outbursts porphyry dykes were thrust into the main Deep Creek range through the schists and caused considerable mineralization, especially at Granite and Trout creek. On the northern end of the range these dykes also appear in dry canyon and the adjoining country on the west at the Dewey mine, but at Clifton there was a tremendous outburst of porphyry which is there called granite and which begins near the Midas mine and extends along the eastern side of the range to Dutch Mountain. From this point porphyry body dykes have run in all directions in the line and pro-

grade silver wherever it is found. As yet no large bodies of silver have been discovered, but much high grade float has been found, which has led the owners to believe that good bodies of silver ore exist in the vicinity. This porphyry dyke can be traced for a mile or more, and has various locations upon it.

## GRANITE CREEK SECTION.

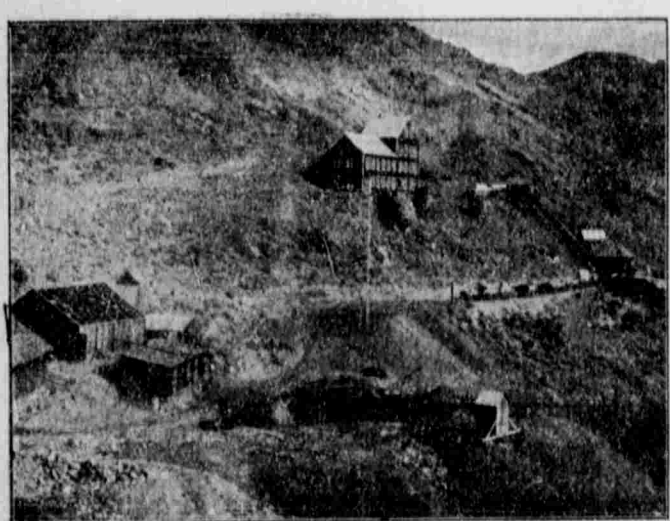
This creek lies about 13 miles west of south of the foot of Clifton, the highest point of the range.

Here comes down a beautiful stream, carrying several cubic feet per second, and having a fall of several thousand feet in as many miles, which furnishes a reasonable amount of water, which can be utilized to develop the adjoining claims. On the north side of the mouth of the creek comes the granite, which forms the core of the range, but on the south side of the creek there is a country composed of schist for the most part, which is highly stratified, and very complex in its character. Through this schist, following nearly the line of stratification, and dipping into the hill almost at right angles to the slope, are a number of variable porphyry dykes, which come to the surface only in places.

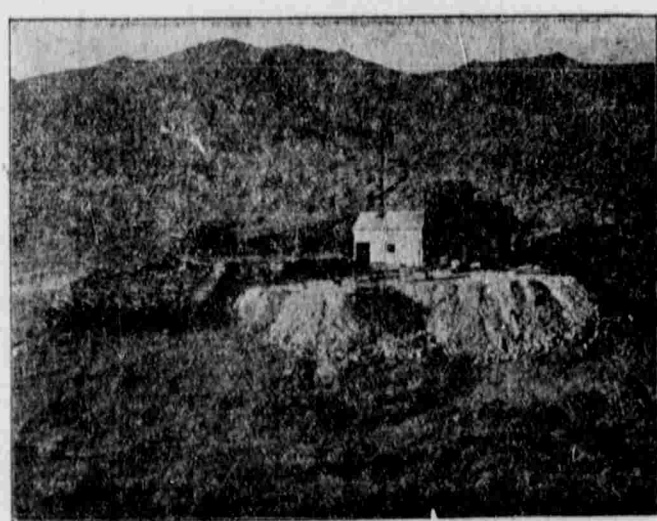
There is a large group of claims in this schist known as the New York Giant property. The main opening consists in an incline 175 feet in length, following the vein, and a drift to the north, at the depth of 50 feet on the incline, and 40 feet in length, which exposes an ore body of about four feet in width, averaging \$10 in gold.

## CLIFTON DISTRICT.

This camp lies about three miles south of Gold Hill, in the same range, and the claims are grouped around the head of a canyon, which runs down into the desert on the east. The water supply and timber is the same as at Gold Hill, only more extensive, but the for-



UTAH MINE, FISH SPRINGS.



CLIMAX MINE, CLIFTON DISTRICT.



FOUR METALS MINE, DUGWAY.



MIDAS MILL, CLIFTON DISTRICT.