

Nevada Douglas, One of Coming Copper Mines of World

FEW copper mines in the west attracted more attention during the year than the Nevada Douglas Copper at Yerington, Nevada. Few copper mines have made better progress in the way of development and few, if any, have a brighter outlook for the future. Indeed, Nevada Douglas has become classed as one of the really great copper mines of the world.

It has an enviable record of production to its credit; yet the tonnage moved to market this year has been only the ore encountered during regular course of development; only that which had to be moved to avoid interference with advancement of work.

It has been the policy of the Nevada Douglas to devote practically all energy towards development and to the equipment of the mine for economic operation in the future. It has been a systematic campaign of preparation that has been going on. In the near future, work will begin on the building of a spur of standard gaged track from the main line of the Nevada & California railroad, which is a portion of the Harriman system, and the construction of larger reduction works for the treatment of the ore on the ground. Hence, it will be seen, big things are in store for the Nevada Douglas company; some great things have been planned and will be carried out during the year 1909.

LARGE TONNAGE IN SIGHT.

While only a small portion of the Nevada Douglas company's domain has been explored, it is claimed by engineers that there is actually in sight nearly 1,000,000 tons of ore averaging 6.5 per cent copper; how much larger the resource really is, remains for development to disclose. But the greater portion of the body referred to in the foregoing averages nearly 60 feet in width. It is known to be more than 600 feet long and has been proved to have 700 feet depth. Shoots of extremely high grade ore run through this body; the average value of the ore mined from several of the leading copper mines of the world is less than 2 per cent copper; but the general average of the Nevada Douglas ore is much higher than that, which gives it a distinct advantage over other copper mines in the country.

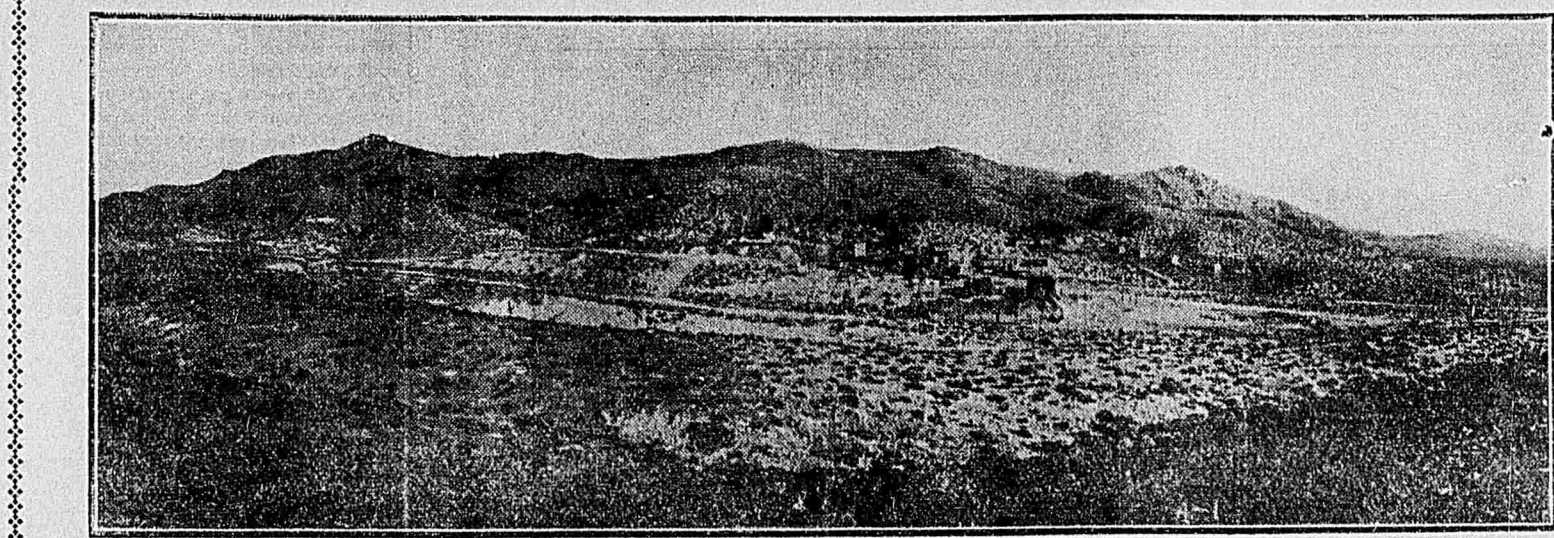
HAS AN ADVANTAGE.

The advantage has apparently been scarcely realized by the mining world. The character and extent of the Nevada Douglas ore bodies have not begun to be appreciated. Mining men evidently have not believed that the extraordinary values could hold out. But they are holding out, and the richest ore is being found on the lower levels.

Here is what it means: Say that the cost of producing copper, by the mine whose ore average runs 2 per cent, is 9 cents a pound—Nevada Douglas with its great ore body of 6.5 per cent copper ore can produce the metal for 5 cents a pound and yet have a good margin for handling the ore, over what the other producer has.

ABOUT THE FORMATION.

The formation of the company's group of claims comprises a large deposit of limestone, cut at intervals by porphyry dikes. On the northern end is a large porphyry-dike contact, while on the southern end the limestone



NEVADA DOUGLAS COPPER PROPERTY, YERINGTON, NEV.

comes in contact with massive granite. The mineralized portion is in garnetized lime, which forms the gangue material and which covers a large area. On that portion known as Douglas hill the mineralized outcrop has an area of 1,500,000 square feet. On the brow of the hill the entire mass has been trench and cross-trenched, and 150 samples taken over this area show a general average of 3 per cent copper at the surface.

In this portion of the mine a tunnel has been driven 600 feet. Raises from the tunnel level to the surface are in ore and winzes sunk beneath the tunnel have developed 100,000 tons of semi-sulphides averaging throughout 6.5 per cent copper. The elevation of this portion is some 800 feet above the valley.

LUDWIG SECTION.

On the Casting Copper claim has been started the main deep tunnel, which will penetrate a mineralized section similar to Douglas Hill, and at 2,000 feet length will be cut at 500 feet depth the ore bodies exposed in Douglas hill. Very large results are anticipated from opening the ground at that depth.

But probably the greatest development in Nevada Douglas is in what is known as the Ludwig section of the property. The present plan of the Nevada Douglas group have been worked at intervals since 1860. During this period the Ludwig has furnished the mint at Carson City, 35 miles away, great deal of the metal for its alloys. The mine was worked on the surface levels for the high grade copper carbonates, when nothing short of 35 per cent copper ore could be worked at a profit.

The larger portion of the Ludwig outcrop, of 1,600 feet length and from 75 to 100 feet in thickness, has been worked by shaft and incline down to 700 feet depth. The surface of the crop is largely leached iron gossan material, except for occasional bunches

of high grade ore in the gossan and well defined streaks of high grade running from a few inches to two feet in width. The thickness of the richer streaks

UTAH'S MINERAL WEALTH.

Output and value of the mineral products for two years as taken from the United States Geological Survey reports:

	1906.		1907.	
	Quantity	Value.	Quantity	Value.
Asphalt, short tons	12,947	\$ 159,960	20,719	\$ 669,440
Clay Products		634,444		633,387
Coal, short tons	1,172,551	2,408,281	1,947,607	2,959,769
Copper pounds	50,329,119	9,713,520	66,418,370	12,283,674
Gold, fine ounces	252,439	6,218,386	247,758	5,121,600
Lead, short tons	56,260	6,413,640	61,699	6,549,094
Lime, short tons	17,461	86,518	12,671	65,855
Precious stones	2,500		9,500	
Quicksilver, flasks	1,164	48,888	400	18,000
Salt, barrels	262,212	169,635	345,557	199,779
Silver, fine ounces	11,559,834	7,728,225	11,406,900	7,528,590
Stone		292,758		232,696
Zinc, tons	2,449	298,778	1,972	232,696
Other products		1,832,652	*	596,852

*Includes antimony, Portland cement, gypsum, mineral waters, petroleum, phosphate rock, sand and gravel and sulphur.

Record Showing Thirty-Seven Years' Production of Utah's Mines, Mills and Smelters.

Official records of the metals produced from the mines of Utah have been kept since 1871, and while it must be acknowledged that there are some discrepancies, the following table will give some idea of the enormity of the great wealth that has been poured from the mountains into the world's great storehouse of wealth. The records from 1871 to 1875, inclusive, are as follows:

YEAR.	Gold.	Silver.	Lead.	Copper.	Aggregate.
1877	\$ 358,107.75	\$5,231,645.60	\$1,048,082.40		\$ 7,237,833.75
1878	276,874.65	4,752,159.03	798,171.24		\$ 5,827,204.92
1879	235,140.12	4,105,191.70	695,653.00		\$ 5,035,984.82
1880	165,773.40	4,029,501.30	786,065.97		\$ 4,981,340.67
1881	144,317.94	5,503,702.95	1,101,050.14		\$ 6,749,131.03
1882	186,836.13	6,114,871.50	1,771,786.00		\$ 8,149,231.63
1883	144,503.97	4,984,939.30	1,747,326.45		\$ 6,876,769.72
1884	114,305.15	6,122,074.01	1,449,352.67		\$ 7,692,632.02
1885	184,025.01	6,211,596.56	1,222,172.46		\$ 7,617,794.03
1886	118,626.59	5,860,837.35	1,411,898.98		\$ 7,438,855.92
1887	235,369.29	5,976,881.89	1,308,738.78		\$ 7,545,358.96
1888	287,023.62	5,787,527.54	1,203,313.24		\$ 7,560,545.97
1889	516,223.25	6,656,249.99	1,468,240.66		\$ 8,640,800.10
1890	609,700.17	8,492,200.44	2,098,769.51		\$ 11,207,212.76
1891	747,427.20	8,759,206.60	2,657,495.84		\$ 12,266,129.64
1892	789,221.94	7,792,388.65	2,505,720.44		\$ 11,087,330.83
1893	1,117,460.00	5,235,966.20	1,542,133.75		\$ 7,900,820.53
1894	1,106,340.00	4,193,674.80	895,123.36		\$ 6,308,138.25
1895	1,352,100.06	5,366,032.11	1,486,427.22		\$ 8,204,559.39
1896	1,603,252.89	5,843,868.00	1,358,456.11		\$ 9,410,293.93
1897	1,922,535.11	4,522,058.65	1,818,607.89		\$ 8,217,596.71
1898	2,168,282.00	4,403,854.23	2,318,985.80		\$ 9,247,820.87
1899	3,581,408.22	4,612,351.05	2,701,869.00		\$ 12,111,628.27
1900	4,263,144.87	6,248,610.07	3,122,866.25		\$ 16,140,485.65
1901	3,945,303.57	6,801,816.48	3,210,967.50		\$ 17,708,334.57
1902	3,972,255.11	6,719,359.12	3,000,698.15		\$ 18,200,005.41
1903	4,905,002.12	10,419,891.33	4,650,753.94		\$ 24,406,698.79
1904	4,185,554.12	9,886,953.77	5,013,562.47		\$ 25,864,288.45
1905	5,197,787.65	6,650,138.57	4,897,526.63		\$ 25,944,149.62
1906	5,218,386.00	7,738,920.00	6,413,640.00		\$ 29,084,471.00
1907	5,121,000.00	7,528,500.00	6,510,094.00		\$ 29,159,594.00

During the past three or four years, the production of the metals from the mines of Utah has been reduced on which the United States geological survey statisticians place a valuation of \$298,778 for 1906 and \$232,696 for 1907. It is estimated that this year's production in the state will aggregate at least 2,500 short tons.



DeBouzek Huntze Company
Designers Engravers Electrotypers
SALT LAKE CITY

DIVIDENDS PAID BY UTAH MINSE IN 1908.

While Utah's dividend record for 1908 has fallen somewhat short of the figures given at the close of 1907, because of the general recession in business and the difficulty experienced by mine owners to market their ore early in the year, the record is after all, a most gratifying one. A half dozen Tintic mines have come forward very substantially and the camp is credited with one new dividend payer—Sioux Consolidated, which is now recognized as one of the leading mines of the state. It stands second this year among the "bread winners" of Tintic. Bingham has done well, with Utah Copper appearing in the dividend column for the first time; Utah Consolidated has made disbursements at the rate of \$2 a share; stockholders of the Puritan Gold & Copper company realized a profit from the sale of surface rights to the Utah Copper company; while those of the West Mountain Placer company drew down \$5,000, which was yielded from the sale of water to the Utah Copper company. All told, disbursements were made by 13 companies, as follows:

Name.	Location.	Amount.
Bullion Beck	Tintic	\$ 80,000
Colorado	"	450,000
Mammoth	"	60,000
May Day	"	44,000
Puritan	Bingham	2,500
Sioux Consolidated	Tintic	126,716
Silver King Coalition	Park City	562,500
Uncle Sam Con.	Tintic	100,000
United States	Bingham-Tintic	2,770,500
Utah Con.	Bingham	600,000
Utah Copper	Bingham	702,500
Utah Mine	Fish Springs	34,000
West Mountain Placer	Bingham	5,000
Total		\$5,537,716

\$600,000 of bonds, convertible within three years from May 1908, into stock at \$2.50 a share. Officers of the company are: J. D. Wood, president; A. J. Orem, vice president; W. V. Rice, treasurer; W. C. Orem, general manager.

PRICES OF METAL.

Figures of interest compiled during each month of the year by the Engineering and Mining Journal:

Month.	New York.	London.
January	68.672	65.673
February	68.835	66.000
March	67.519	66.265
April	65.402	64.505
May	65.371	62.735
June	67.090	65.863
July	68.145	65.115
August	68.745	65.633
September	67.792	64.720
October	62.435	61.431
November	58.677	57.154
December	64.560	62.592
Year	65.322	63.188

New York, cents per fine ounce; London, pence per standard ounce.

Month.	New York.	London.
January	24.404	13.726
February	23.869	12.965
March	23.065	12.704
April	24.224	12.746
May	24.048	12.588
June	21.665	12.675
July	22.120	12.702
August	18.556	13.462
September	15.565	13.388
October	13.159	12.354
November	12.391	11.626
December	13.163	12.113
Year	20.004	17.007

New York, cents per pound. Electrolytic is for cakes, ingots or wirebars. London, pounds sterling per long ton, standard copper.

Month.	New York.	London.
January	6.907	6.512
February	6.800	6.375
March	6.000	6.328
April	6.000	6.393
May	6.000	6.253
June	5.760	6.460
July	5.288	6.447
August	5.250	6.440
September	4.813	6.150
October	4.750	6.351
November	4.376	6.351
December	3.658	6.150
Year	5.325	6.103

New York, cents per pound. London, pounds sterling per long ton.

Month.	New York.	St. Louis.
January	6.732	6.512
February	6.814	6.788
March	6.537	6.664
April	6.855	6.445
May	6.441	6.408
June	6.419	6.453
July	6.072	6.485
August	5.701	6.702
September	5.236	6.702
October	4.801	6.391
November	4.325	6.475
December	4.954	6.104
Year	5.962	6.812

New York and St. Louis, cents per pound.

PATENT SYSTEMS HERE AND ABROAD

Our own patent system will be better understood by a brief comparison

with some of the principal foreign systems. In America the patent office makes a careful examination before granting the patent to see that patents are granted only for novel inventions and that the claims are restricted to a monopoly to which the inventor is justly entitled. Thus our patents have a prima facie validity. France, on the other hand, makes no examination before granting a patent, and requires no claims. England has only just begun to make preliminary examinations. Germany subjects applications for patents to a very rigid examination. The United States requires no taxes of the patentee after his patent is granted, as the price of keeping his patent in force for the 17 years. England, on the contrary, requires taxes paid annually after the fourth year, and Germany and France require annual taxes. The United States does not require the patentee to put his invention into commercial use, but France and Germany have both require it, and England will invalidate a patent for an invention which is manufactured chiefly abroad, but only slightly or not at all in England.

In the United States, any of the defenses to a patent can be raised in answer to a suit for infringement, and that at any time during the life of the patent. In Germany the only answer to a suit for infringement is a denial of the change of infringement. If the validity of the patent is to be attacked it must be by a separate suit for annulment, and such a suit can only be brought during the first five years of the patent. Therefore, after a German patent is five years old, it is conclusively presumed to be valid. In the United States, if one claim of a patent having several claims is proven invalid, that does not affect the standing of the other claims. In England, however, if one claim is proven invalid the entire patent falls. It is perfectly safe to say the American patent system is a permanent part of our jurisprudence, and that future legislation will not be in the direction of curtailing the rights of inventors, but rather of encouraging them by making the enforcement of their rights a matter of less expense and time.—Edwin T. Prindle, in American Industries.

"Keep to the Main Highway"

BY GOVERNOR-ELECT WILLIAM SPRY.

"KEEP TO THE main highway." This is the way that Governor-elect William Spry states the problems of Utah for the coming four years to obtain roads of which it may be proud.

"The minute you get off the main highway you are lost in a tangle." In this fashion the next governor expresses his opinion as to where the greatest danger lies for a successful good roads campaign. Elaborating upon it, the things brought out were that every county has some pet road, splendid for the county, but of no interest to the state, which it would be glad to have the state build at state expense.

In the past the state has built many such roads. It is not its intention to build so many in the future.

"There is no use denying," said Governor-elect Spry, "that the money given to each county by the legislature for 'roads and bridges' has been a thing in which often the interest of the state was supposed to end with the making of the appropriation. County commissioners, charged with spending it have thought sometime the money was mere 'pie' for the county and the general state needs as to a highway through that county were not considered in its spending."

"Of course there are exceptions. To have helped the people of St. George and Washington county to build their river bridges, and to have helped to build some useful roads that could not be classed as state highways, is a splendid memory from past road-making activity."

STATE ROADS FIRST.

"I do not want to see our future activity in road making completely shut out roads where some county has a special need of special roads, but I do want to see the money spent, as a general thing, on the road that a man must take when he tries to cross the state. For that reason I shall recommend to the legislature that a system of state agents be created to spend the state's appropriations for making roads. The governor might for instance designate the chairman of the board of county commissioners in each county to be a state agent for that county, and the governor might then hold all such agents responsible to him for the putting of the work on the proper highway."

Such is the good road plan of Governor-elect Spry. It was obtained by the "News" as part of an effort to find out in what direction effort for better highways will spend itself.

That there is need for such effort has ceased this year to be a matter of debate. The only open question is concerned with ways and means, and this subject will be the chief topic of discussion at a good roads mass meeting which Gov. Cutler has stated will soon be called, to meet in Salt Lake on Jan. 14, at the Salt Lake Theater.

The reason the proclamation calling this mass meeting together was not issued in November was that a Commercial club call had issued for a development league convention, and it was not thought desirable to issue another proclamation which might create confusion on this one important issue. Therefore the delay was occasioned until such a time as the Commercial club's development league could get under way.

LATERAL ROADS SECOND.

At the Jan. 11 mass meeting Governor-elect Spry will preside and opinions will be gathered from the men who have worked most at road-building over the entire state.

It is the hope of Governor-elect Spry, and of those who have worked hardest for a definite, state good roads plan, that

nothing will come up to cloud the issue, and attempt to tack on lateral roads to the general proposition.

To attempt to build lateral roads in the Salt Lake Valley, for example, the whole movement through outloading it. One circumstance alone will compel this, and that is the fact that the expense and multiplicity of claims for attention, one suit can only be brought during the first five years of the patent. Therefore, after a German patent is five years old, it is conclusively presumed to be valid. In the United States, if one claim of a patent having several claims is proven invalid, that does not affect the standing of the other claims. In England, however, if one claim is proven invalid the entire patent falls. It is perfectly safe to say the American patent system is a permanent part of our jurisprudence, and that future legislation will not be in the direction of curtailing the rights of inventors, but rather of encouraging them by making the enforcement of their rights a matter of less expense and time.—Edwin T. Prindle, in American Industries.

The plan therefore most likely to be urged, is that the route of a main state highway be selected, and that work on building it be commenced in Logan and in St. George, and that the effort of the state, and all the money the state can put onto roads and bridges, be used next year and the year after, under the state agents, to perfect this highway through all the counties it touches. These would be Cache, Boxelder, Morgan, Salt Lake, Utah, Sanpete, Juab, Sevier, Plute, Garfield, Iron and Kane. The route of course would follow the present main highway, known as the "State Highway."

Such a state highway, macadamized with a firm bottom of ledge rock, topped by a finer rock, would harmonize the Utah system with that of other western states. Colorado has recently built such a road, while the government in Yellowstone park has perfected to a splendid point the science of making them.

BOOSTERS IN UTAH.

In Utah the agitation began this year in earnest by well directed publicity campaigning under the auspices of the Salt Lake Automobile club, joined by the Weber Good Roads association. Their meeting at Farmington was followed by immediate activity in Salt Lake, Weber and Davis counties. Utah, Sanpete, Juab, Sevier, Lake and Ogden. Another rally in American Fork resulted in a policy of building up of the Utah county highway road, which worked in different success owing to the element of rivalry that entered, one part of the county being anxious that "lateral" roads come in if any system of increased tax be resorted to.

As expressed in the Republican platform, sentiment for good roads took the form of the following pledges upon the two sides of the elected legislators. And these two Democrats have equally binding pledges on this issue on the state platform under which they were elected. "We favor the enactment of laws" runs the Republican platform, "providing for a systematic construction of highways throughout the state, and for the adoption of prompt and vigorous methods of building good roads by which the state and various counties thereof shall co-operate to the very desirable end that a system of well constructed, substantial and well kept highways shall be made in every part of the state."

And it is on this platform plank that the future policy will rest,—with this reservation,—that the first problem is to get one good state road, and then do the branching off that each section will earnestly desire and that often will be of great benefit. D. B. Roberts of Logan has five bills for the legislature to consider, dealing with all phases of the road question and the ways to administer road finances, material, and labor. These will no doubt be submitted as the legislature's first point of attack in this particular field of its problems.