

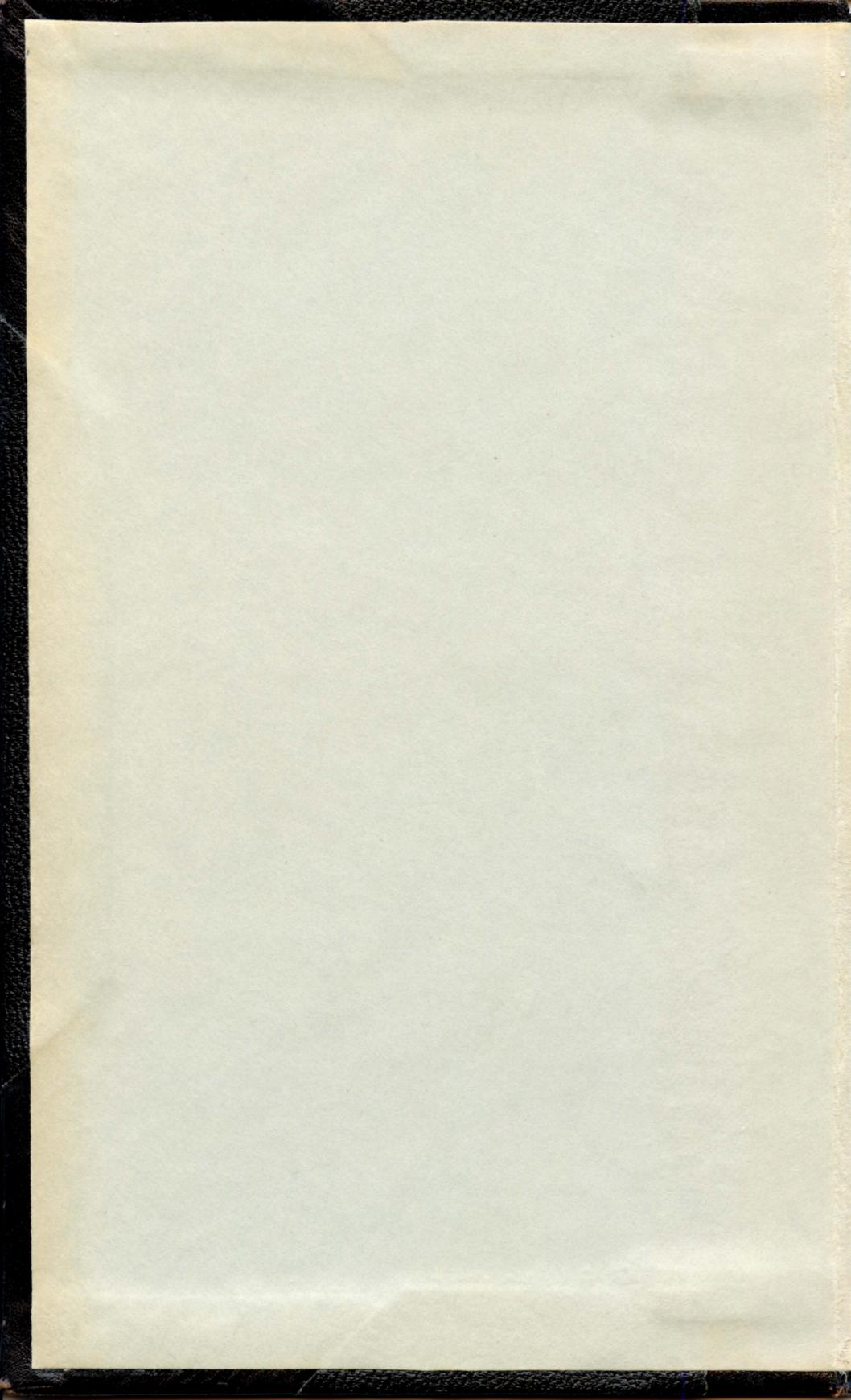
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20181121 William Schuster, Idaho Geological Survey

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Idaho Geological Survey's annual reports from the Idaho State Mine Inspector to the governor for years 1914-1918, originally in a single bound volume, are divided by year. A digital facsimile of the volume may be re-created by removing this page and combining PDF files for years 1914-1918.





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INSPECTOR OF MINES
BOISE, IDAHO



INDEX

of

A

Report for 1914.

Introduction	3-4
Accidents and Causes	5-17
Mining Development Progress	18-33
Burke Mines	18
Nine Mile Mines	19
New Power Line	21
Mullan Mines	21
Kellogg-Wardner Mines	22
Hypotheek Mine	24
Metallurgical Progress	25
Other districts	26
Bonner County Mines	26
Mineral Lumber	26
Red Edge Mine	27
Big Creek district	28
Custer County Mines	28
Radium Ore	29
Blaine County Mines	30
Fremont County Mines	31
Lemhi County Mines	31
Gold Production	33
Federal Restrictions	34-38
State Revenue Rights	38-40
Idaho's Natural Resources	40-44
Water Power Resources	44-45
Comparative assets	45-49
Totals for year 1914	50-55

Sixteenth Annual Report

OF THE

Mining Industry of Idaho

FOR THE YEAR

1914

MINES
IDAHO



ROBERT N. BELL
STATE INSPECTOR OF MINES

Boise, Idaho, Jan. 1, 1915.

TO HIS EXCELLENCY, JOHN M. HAINES, GOVERNOR OF IDAHO.

Sir: I have the honor to submit herewith my report as State Inspector of Mines for the calendar year ending December 31st, 1914.

ROBERT N. BELL,

State Inspector of Mines.

INTRODUCTION

The permanence and potentiality of Idaho's mineral resources are splendidly exemplified by the past year's mining results, especially in our most extensively developed and operated district, that of the Coeur d'Alenes, in Shoshone County, whose operators have met the conditions of excessively low prices and depressed metal market conditions, due to the European war, and have been able to continue in operation with a few exceptions throughout the year, by concentrating their efforts on their better grade ores, which, through judicious advance development on the part of the leading operators, were available for selection as an offset for low prices and have resulted in giving the State another record breaking yield of its dominant metal production in lead, silver and zinc, amounting to a gross mine value of all mineral shipped from the State of \$24,976,706.36, and consisting of:

345,334,206 lbs.	of lead.
49,239,000 lbs.	of zinc.
13,621,123 ozs.	of silver.
5,178,000 lbs.	of copper.
62,238 ozs.	of gold.

Considerably over 90 per cent of the output was credited to Shoshone County mines, except in gold and copper, and their lead, silver and zinc output showing a remarkably increased yield over the record year of 1913.

In spite of this largely increased output of mineral, the total gross value of the same was only a few hundred thousand dollars over the value of the year 1913 output, as near as can be figured from the uncertain market figures quoted, due to the closing of the metal exchanges during part of the year.

According to the testimony of one of the ablest mine auditors of this country, every pound of this enormous production of lead was produced at a loss, and, in fact, the bulk of the silver, in addition to the lead, went for production costs, as there is no profit in producing lead bullion from Coeur d'Alene ores at less than 4 cents per pound,

without taking the silver into consideration, and our mines are fortunate in having this important associated metal as a reserve value for hard times. As a matter of fact, the profits on the operations of the year were decidedly cut down.

The Great Morning Mine, whose silver values are relatively low, and for lack of ore market was forced to close during the middle of the summer, throwing several hundred men out of employment. The company, however, kept on as large a force as possible and took advantage of the shut down to retimber its big four compartment shaft from the two mile tunnel level, and to extensively improve the flotation equipment of its large milling plant.

The Hecla Mine, producing one of the cleanest ores in the district, had to cut off one-fifth of its production for market reasons, which resulted in reducing its profits 50 per cent, and some of the zinc producers were run for the benefit of the crew, as there was hardly any margin of profit possible on the zinc prices available throughout the year.

In common with the modest prospector, hope springs eternal in the breast of the big mine operator and he will keep going week after week, and month after month, when the dictates of cold reason would warrant a shut down, but he hopes against hope that the market has touched bottom and must soon take a favorable turn. Besides, it is rather a serious thing to shut down a big deep mine operation involving the laying off and disorganization of an experienced crew and staff that may be the result of years of training in its own peculiar problems, while neglect of even well supported large underground spaces left to the mercies of the natural gravity inherent to the earth's crust present the positive prospects of costly reopening problems after a shut down.

The great mineral yield of 1914, from Idaho mines, resulted in Idaho stepping up a notch and assuming second place among the silver producing States of the Union, and when the final analysis of complete figures are in, will doubtless have pushed Missouri a close race in lead production and safely occupy the second place in that respect.

Accidents and Their Causes.

The total number of men employed in the mining industry of Idaho during 1914 was probably 1,000 less than the previous year. It is difficult to get the accurate figures on this feature of the industry, as operators are slow in replying to statistical inquiries, but I think the total would aggregate 5,200 men exposed to the hazards of the industry in Idaho during 1914.

During the year there was reported to this office a total of 27 fatal accidents, 79 serious accidents and 312 minor accidents. Twenty-four of the fatal accidents were attributed to Shoshone County mines, and one each to Blaine, Custer and Lemhi Counties. The fatal and serious accidents are largely attributed to the same relative causes, with one exception, where two men were killed by fall of ground as the result of an air blast, considered one of nature's freaks of self-exploding rock and due to high pressure and natural bending tension at great depth; all the accidents were individual, and, as usual, the personal element cut a big figure in most cases and actual carelessness or willful flirting with death were not unmixed with some of the conditions that resulted in this awful loss of life.

The following is part of a new classification of mine accidents that the United States Bureau of Mines has asked the various State Mining Departments to co-operate with it in using. It segregates the matter further than has been the former practice in this State, and is the result of very careful thought and detail work on the part of the National Bureau, with the aim and purpose to facilitate the compilation of statistics as to causes and to assist the State Departments in suggesting remedies.

Fatal accidents in Idaho mines, including mills and placer works during 1914, were as follows:

MINE ACCIDENTS.

Underground.

By fall of rock or ore from roof or wall	8
By rock or ore while loading at working face or chute .....	.....
By timber or hand tools .....	.....

By explosives (includes premature blasts, explosion of misfires, flying pieces from blasts, suffocation by gases from blasts, etc.)	3
By haulage accidents (by mine cars, mine locomotives, breakage of rope, etc.)	5
By falling down chute, winze, raise or stope	2
By run of ore from chute or pocket	1
By drilling accidents (by machine or hand drills) ..	..
By electricity	1
By machinery (other than locomotives or drills) ..	..
By mine fires .....	..
By suffocation from natural gases .....	..
By inrush of water .....	..
By stepping on nail .....	..
By other causes .....	..
Total number killed or injured underground other than shaft accidents	20

SHAFT ACCIDENTS.

By falling down shafts .....	..
By objects falling down shafts	1
By breaking of cables .....	..
By overwinding .....	..
By skip, cage or bucket	3
By other causes .....	..
Total number killed or injured by shaft acci- dents	4

HALL

MILL ACCIDENTS.

By moving machinery	1
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POWER PLANT ACCIDENTS.

Electrocuted	1
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PLACER MINE ACCIDENTS.

By drowning in dredge pond	1
Total number killed	3
Grand total	27

A brief detailed review of the causes of the above long list of fatalities, as reported to this department and gathered personally, is as follows:

On January 2, 1914, J. J. McCracken, aged 35, a married man, and a dredge worker at the plant of the Bohanan Dredging Co. in Lemhi County, was standing on the pond bank waiting to board the dredge, at 7 o'clock in the morning at change of shift, when the gangway plank was being swung over the bank suddenly caved in precipitating him into the water, where he was evidently caught by some of the falling gravel and drowned before he could be rescued; his body being recovered with grappling hooks an hour and 45 minutes after the accident.

In the Bunker Hill & Sullivan Mine, on January 5th, Robert P. Hull, a married man, aged 43 years, and an experienced motorman in the main Kellogg tunnel, at which work he had been employed steadily for 12 years, and for a total of 20 years with the company, was killed in a rear end collision. A preceding train had been forced to stop on the way out on account of some new work and the motorman on that train signaled back but the victim evidently did not get the signal or had his head turned from the direction he was going, as he crashed into the standing cars ahead of him and died as a result of his injuries the following day.

On January 17th, in the Green Hill Cleveland Mine at Mace, Shoshone County, D. R. Edwards, a married man employed as a shoveler on the 8th floor of the 1,600 stope, was caught by a cave of ground from the floor above and carried down one set and so severely injured that he died while being conveyed out of the mine on a stretcher.

On January 26th, at the same mine, Andrew Stoll, aged 43, and single, occupied as a compressor engineer in the surface power plant and an old timer at the job, was electrocuted in the company's local transformer sub-station. The power went off and he went to the sub-station to put in a switch and for some reason got on top of a high tension switch and he came in contact with a 60,000 volt current. He was dead at the time he was found.

On February 17th, at the Morning Mine at Mullan, Frank Greene, a married man, 32 years old, and superintendent of schools for the district, at his own request, was showing some visitors through the mine and was accom-

panied on the trip by a competent shift boss, familiar with the operation. The party was in a cross cut with a high back, in the roof of which was a hanging boulder that the miners had been previously trying to bar down without success. Greene was especially warned to keep from under this particular piece of ground but disregarded the advice and it fell on him breaking his right thigh and three ribs and causing such serious injury as to result in his death at Providence Hospital in Wallace on March 11.

This is the second fatal accident to inquisitive visitors in Idaho mines in my experience. The other one I recall was at the Checkmate Mine in the Pearl District, Boise County, in which school teachers were involved. At that time I suggested that operators could have my full authority to bar visitors from under ground, especially in shaft mines and especially to women, unless some very special reason was involved, and then only in company with the most familiar authorities on the job, as there is nothing of value that a pedagogue can learn from a few hours visit under ground, unless it be the gratification of morbid sensations that cannot be learned from illustrated books where no risk is involved. I am thoroughly and avowedly an anti-female suffragist in this matter.

On February 26th, in the Last Chance Mine at Wardner, Truman Lamb, a single man 30 years old and employed as a machine repairer for $2\frac{1}{2}$ years on this property prior to the accident, was struck by a sliding board or false bottom used in the skip for lowering timbers. The shaft has an incline of 45 degrees, and this board was accidentally dropped into the compartment in which Lamb was riding and slid along the rope striking the victim on the head and fracturing his skull, causing an injury from which he died at Kellogg Hospital on March 14th. Ordinarily, the angular shaped false bottom used in the skip, which caused this accident, would have wobbled off the moving rope and lodged on an incline of this pitch, at the first or second set, but through some freak of balance it kept the rope and slid down until it overtook the skip 150 feet below.

On March 9th, at the Snow Storm Mine, Ed. Erickson, a miner, was killed by a fall of ground in drawing pillars.

On March 16th, in the Hercules Mine, Erick Puska, a single man, 28 years old, employed as a miner, and four

months on this particular job, was bearing down a block of heavy ground which hung on a brow in the raise, after a blast, between the 600 and 800 levels, in which he was working. Pushka held the bar against his body, instead of using an arm's length free end, and when the block settled the direction of its force towards him crowded the blunt end of the bar into his body and caused his death in a few minutes.

On March 23rd, at the Bunker Hill & Sullivan Mine at Kellogg, Paul Paulsen, 24 years of age, a concrete construction helper, had his skull fractured while coupling cars on the electric haulage way at the point where he was working, near the main shaft in the Kellogg tunnel, and died as a result of his injuries at the Kellogg Hospital in a few hours afterwards. The victim was an experienced man, had worked several months on this particular job and was familiar with the duties he was performing at the time of the accident.

In the Success Mine, on April 9th, Dominick Oro, a married man, 40 years old, an Italian miner, was killed by a premature blast. He was dead when found and is supposed to have prematurely exploded a piece of powder in springing a hole, as the nearest workmen, less than 100 feet away, heard a small blast but paid no attention to it. The victim was dead when found by the drift boss on his rounds.

On April 24th, at the Hercules Mine, at Burke, John Baxter, a married man employed as a trolley breakman, while riding on the back end of an electric train, allowed his body to extend too far outside of the frame of the car and was pinched between the car and the set of timbers, resulting in such serious injuries to his hips that he died in the hospital 10 days later. He had been employed on the job over $10\frac{1}{2}$ months.

At the Hecla Mine, at Burke, on May 31st, Andrew Finley, aged 26 and single, a \$4.00 man employed at the time on shaft repair work, and while stepping from a plank onto the top of the cage which was being slowly moved on verbal order, he missed his footing and was crushed between the cage and the timbers of the shaft and fell to the bottom with fatal results.

On July 6th, in the Silver King tunnel, owned by the Ontario Leasing Co., and used by the miners of three

mines as a short cut to Government Gulch, William Wallace, aged 28 and married, a miner employed at the Sierra Nevada Mine, was instantly killed by being struck by a moving mule train of loaded ore cars and crushed against the timbers, having failed to get out of the way or to find a sufficiently wide place between the timbers to protect himself, although he was advised to do so by a companion on the opposite side of the track at the time where there was ample passing space.

In the Morning Mine, at Mullan, on July 19th, R. J. C. Osburn, a married man, 26 years old, employed as a jigman in the mill, and experienced in that work, had his foot crushed by moving machinery, requiring amputation which resulted in his death on August 7th, due to blood poisoning. The victim got into this trouble while holding back the feed on an elevator, when his foot slipped and a set screw in the shaft caught his trousers leg and threw him down, winding the leg about the shaft. The machinery is governed by hand levers with which the power can be turned off and on, and it was unnecessary for the victim to get in such close contact with this whirling danger.

At the Bunker Hill & Sullivan Mine, on August 3rd, Wm. Thom, a single man, aged 50, a shoveler by occupation, and employed four years at this mine, was shoveling waste on the foot wall side of the 13th floor of the Rabb stope and laying a floor preparatory to taking down some of the overhanging ore and while so engaged about a mine car full of the mineral sloughed off and a portion of it struck Thom in the back knocking him down and inflicting serious injuries, from which he died as a direct result in the Kellogg Hospital, on August 6th.

In the Empire Copper Mine at Mackay, an experienced miner and head man in a small leasing company by the name of Marco Jacamello, an Italian, aged 35 years and married, while working in the closely timbered square set and filled stope in copper ore, with the timbers tight up against the breast of the stope, was kneeling down hand sorting ore when a block of the mineral weighing about a ton dropped out of the face onto the floor, a distance of less than 3 feet. In doing so, however, it tilted forward and a sharp edge of it struck him in the head, fracturing his skull and killing him instantly.

At the Hillside Mine, near Bellevue, in Blaine County, on August 19th, Edward Toohill, 36 years old and married, employed in timbering an incline shaft was sitting on the outside edge or rim of the skip when the signal was given to hoist. At the time the skip was below a new set from which drift spiling was being driven, which projected into the shaft space but still left 10 inches of clearance between the lagging and the back of the skip. His back was caught by the projecting timber and he was doubled up into the 10-inch space and held for several minutes. This accident happened at 4:45 p. m. and the victim died as a result of his injuries the next day. He was aware of this temporary obstruction, as he was working on it himself, and his proper place under the circumstances was in the skip and not on the top of it.

At the Hecla Mine, at Burke, August 28th, Thomas Byers, 33 years of age and married, a shift boss who had been employed at this mine for nearly four years, lost his life by being caught between the deck of the cage and the shaft timbers while going off shift with a deck load of men, causing instant death. The victim is believed to have fainted and lost his balance.

At the Stewart Mine, near Kellogg, on August 28th, Anton Konda, a single man, 25 years of age and employed as a miner, was instantly killed by an electric shock caused by the victim, contrary to orders, carrying a long piece of steel on his shoulder, which came in contact with the trolley wire under such conditions as to give him the full force of the 500 volt current.

At the Last Chance Mine, at Wardner, on October 3rd, Leslie Wilson, a married man, aged 23, employed as a miner, while assisting the pipe men in the Prather raise from No. 4 level, and standing on a platform of 3-inch planks forming the floor of a drift set that connected with the raise and completely flooring over the connection, excepting one plank 12 inches wide and 5 feet long, suddenly let go his hold on the small pipe which was being bent and fell through this hole to the level below, and received, among other injuries, a fractured skull, from which he died in the Providence Hospital at Wallace on October 5th. One of the victim's assistants in this work was standing within six feet of him but had his back toward him and did not miss him until he heard a noise down in the

raise. It is hard to conceive how a man could fall through such a hole in a normal condition, as it was a snug fit for an ordinary sized man's body.

At the Snow Storm Mine at Larson, on October 18th, Iver Aro, a miner, aged 26 and single, while tending chuck at the starting of a new hole in a drift face, which he had helped to clean down himself, was instantly killed by an explosion of a powder butt left from a former blast which the drill struck as soon as the air was turned on. This accident occurred on the 2,200 foot level east from the new shaft, No. 4 tunnel, and two other men were seriously injured at the same time.

In the Bunker Hill & Sullivan Mine, on November 22nd, Eli N. Labus, 22 years of age, employed as a motorman and turnabout car loader, and on this work for the previous 19 months, while running a small, slow moving storage battery motor on the No. 12 shaft level hauling ore from stope chutes to shaft pocket, met his death by having his skull fractured between the top of the motor frame and a projecting chute. The victim was familiar with the location of these chutes and had plenty of room to avoid hitting them. It is believed he was handling the motor with his back turned to the direction he was pulling.

At the same mine, on November 25th, Mr. J. R. Williams, 25 years old, an experienced timberman, while attempting to blast a hung-up ore chute, was caught in the sliding muck and smothered to death. The chute was on a half pitch and about 4 feet square, and an opening was made in the back of it from an adjacent manway through which the powder could have been pushed on the end of a jointed stick, but the victim took the chances of going personally up the chute to place the powder, which was about as foolhardy a thing to do as it would be for a man to climb into a loaded cannon with a four foot calibre, with an intoxicated force known as "natural gravity" lolling on the trigger.

At the Pittsburg-Idaho Mine at Gilmore, in Lemhi County, Charles Miller, a skip tender on a small hoist and underground handy man, was smothered by powder gas due to the burning of part of a box of powder in a hot water thawing device which was kept in a locked side drift off the main works and was under Miller's personal charge. He visited this magazine for the purpose of chang-

ing the water can at 9 o'clock a. m., and went in it again at 10:45, but for what purpose was not known, but it is suspected that he had left a candle burning on his first visit and went to put it out and found the powder on fire. He then immediately notified the other men in the mine that the powder was burning and they supposed he was in the clear and on his way out. On his failure to show up a search was made and he was found in the track of the fumes, 150 feet away from the site of burning powder, probably smothered with monoxide gas. He was immediately removed to the surface and given persistent first aid treatment for two hours, but failed to revive.

At the Green Hill Cleveland Mine, on December 23rd, Dave Shearer, a single man, aged 45 years and employed at the time as shoveler on the 15th floor of the 1,600 stope, was killed as a result of an air blast which threw down several tons of rock. Shearer was working under the timbers nearest the face clearing the floor when the air blast occurred. He was badly crushed and instantly killed.

In the same mine, on the same date, in the same fall of ground, and due to the same natural cause, James X. McCarthy, 21 years of age and single, also working as a shoveler, was so badly injured by the falling rock as to result in his death in 20 minutes after the accident.

At the Tamarack & Custer Consolidated Mine, on December 23rd, Lee Mouchett, a married man, 40 years of age, employed as a shoveler, several months on this particular job, came to his death by falling five floors into a waste corral. The victim had taken up two floor planks near to the over-hanging wall of the stope, making a hole between the timber sets 10 inches by 20 inches, for the purpose of dumping waste into the corral. He was a capable, well known, well liked workman. There were a number of men working near him, but none of them saw him go into the hole, and the only conclusion that could be arrived at was that he might have been rolling a small boulder into the opening and a ragged edge of it caught his glove and pulled him off his balance into the wide end of the opening. He was so badly injured by the fall he died in two hours after being removed.

It will be seen from the foregoing description of accidents that most of them were caused by the natural haz-

ards of the business, coupled with the want of mental alertness and safety first personal care on the part of the victims.

I have to repeat, that the mines and underground conditions in Idaho are kept up to a high standard of protection, consistent with the economic purpose for which they are run; with few exceptions every reasonable precaution is taken, and where extra hazards are manifest they have previously been pointed out in print.

Owing to hard times, the present working force in Shoshone County underground is of a higher grade all through than it has been for a number of years. Labor is exceedingly plentiful and the opportunity for the superintendents to pick and choose their men is unexcelled, as there are ten to twenty men for every job that is made vacant through a man quitting or getting hurt, even in the most hazardous conditions. It is impossible to work mines without risks, as a miner's work is to make holes in the ground and timber them up; he has to make the hole before he can get in the timber and has to have room to work and separate the ore from the waste, which necessitates a certain amount of space leeway of open ground in which the bulk of accidents are caused from the fall of ground.

The air blast condition at the Green Hill Cleveland Mine is a thing that other deep mines have been and are afflicted with. This mine is worked on a wide and very steep dipping fissure vein in hard quartzite and its lower level now closely approaches a mile in vertical depth below Custer Mountain.

There is absolutely no remedy known beyond close timbering and filling for its air blast troubles, which itself does no good when these freak rock explosions occur; in some instances, as I personally saw, a few minutes after it occurred, one of these explosions affect a main drift in this mine and fill it half full of rock in a second for 200 feet in length, while a long stope only two or three floors deep below it with two to three timbered floors still unfilled, was practically unaffected. The other hazards of this deep mine are well known and assumed by the men.

One of the shaft accidents at the Hecla might have been prevented by the use of gates and backs to the cages, and the company have taken the precautions against the re-

currence of such an accident by installing these precautionary measures.

This great district and its shaft operations has been remarkably fortunate to date in their freedom from disastrous shaft accidents in which the mechanical appliances themselves were at fault, and while there is no other way of operating them without conveying the large force of men required daily to and from their work suspended on a wire, and in several instances from cramped underground hoist stations, the past years of experience is a high tribute to the care that has been and is given by the mechanical departments of these enterprises to the hoisting ropes and their attachments. In this connection, the Coeur d'Alene district within the past 18 months, has installed at its larger shaft operations six sets of the new Welch Speed Controlling Device, an efficient automatic contrivance that supplants the brain of the hoist engineer and takes the control levers bodily out of his hands if he permits the operation of the carriages at a fraction over a given speed and affords an automatic precaution against over-winding accidents and run-away accidents near the bottom, as the device is set to operate at both ends of the lift and has given some very definite evidences of its reliability during the past year.

Several of the deplorable tramway accidents happened to well experienced men in absolute control of the machines that caused their death.

In the main underground haulage way maintained by the Bunker Hill & Sullivan Mine, through the Kellogg tunnel, two miles long to the shaft, an electric block signal system has been installed and has been in successful operations most of the year; this consists of a special circuit of colored lights strung along the tunnel throughout its main haulage length, in one mile sections and operated by the motorman through a lever that can be thrown conveniently at the end of each block. Red lights are used in one direction and green lights in the other, and the motormen are prohibited to enter a block carrying the opposite colored light until it is extinguished and shown to give them a clear track for a mile in length.

It is difficult to see, in reviewing these accidents, where closer mine inspection could have prevented many of them, and it is further manifest that had their mental attitude

been properly alert and the principles of "safety first" uppermost in their minds, that most of this long list of fatalities would have been prevented as they largely fall in preventable classes. The exception to this rule, of course, was the air blast victims at the Green Hill Cleveland. Some of the victims of the fall of ground were unquestionably due to the extra hazards involved in drawing pillars, or in finishing and exhausting ore bodies. These conditions, while forming an extra hazard, that in some cases seems too great to subject them to, are often an economic necessity that the men are entirely familiar with and willing to assume, and that the operators handle with a degree of scientific care.

This feature of mining in extracting the final brace or keystone of a wide ore body, between levels, or the pillars of a coal deposit, is what the conservation people howl so much about, especially in coal mining as an economic waste of natural resources. It is a pity that the leading advocates of this fad, especially its present directing head, could not be forced to assume the risks that their intemperate demands involves in this direction and be put to work underground drawing pillars of coal or shallow backs and floors of drifts or stopes in steep pitching ore veins, so that they might have a little clearer idea of what their exacting demands involve in the way of human risks.

The list of fatal accidents this year is so long as to be discouraging and disheartening to a conscientious mine inspector of very limited financial resources, and while I repeat that the operating conditions in our big mines are, with few exceptions, as good as the economic problems involved will stand, I would still advocate my recommendations of one and two years ago, that as soon as it can be afforded, a resident deputy mine inspector be provided for the Coeur d'Alene district and that he be required to investigate the cause of every fatal and serious accident immediately after it occurs; to make more frequent visits of inspection of the men at work, and be given full police power to temporarily lay off or permanently discharge any operative he might run across taking an unnecessary risk and to enforce immediate compliance with his orders. It would seem that the principal remedies called for the class of accidents herein

described would be a rigorous application of railroad methods of inflicting penalties of this nature for the disregard of orders, and to apply an especial eye in this connection to the latitude of shift bosses.

Splendid up-to-date rescue apparatus has been provided by all the big companies of the Coeur d'Alene district, and, in co-operation with the National Bureau of Mines, a system of first aid instructions has been inaugurated. By some of the companies it is religiously maintained and has had very beneficial effect in serious injury cases. This system should not only be maintained but enforced on all mines employing over ten men underground, as its efficiency in alleviating suffering and in the subsequent handling and recovery of serious injury cases has been repeatedly demonstrated since it has been inaugurated.

Most of the fatalities described were of such a nature as to illustrate the natural hazards of the business and particularly the human element involved, and further emphasize the necessity and demand for an intelligent compensation law to take care of the unfortunate dependants who are seldom in any way responsible in the cause of their loss. The compensation law that has been framed by the Commission suggested at the last Legislative Session and appointed by yourself, possibly with a little amendment, would cover the Idaho situation satisfactorily. It has involved an immense amount of study and detail work on the part of the Commission on a very complicated problem and should be given very serious consideration and a tryout when presented at the forthcoming Session, at least to the point in its provision where State aid is called in.

MINING DEVELOPMENT PROGRESS.

Through lack of funds to cover printing costs, the usual extended review of Idaho mining progress and new development during the past year will of necessity have to be extremely brief.

While 1914 was an unusually off year, in which conditions were extremely adverse to the investment of money in speculative lines, there were, nevertheless, some important discoveries made that further establish the permanence and possibilities of our mining industry and demonstrates the remarkable variety of its inorganic resources of a commercial and a business-creating nature. The greatest activity along these lines was work in close association with our best examples of mining progress in the Coeur d' Alene district, where considerable activity was manifested along development lines in spite of the hard times and results were obtained of far-reaching importance to the future of this field as a source of extensive mining activities and payrolls.

Burke Mines.—The most gratifying results of the year in Shoshone County was the successful intersection and opening of the famous Hercules vein through a tunnel nearly two miles long, where an expansion of its great ore bodies to still greater lineal extent has been disclosed.

On the opposite side of the gulch, the Hecla Mine has also demonstrated that the pessimistic view expressed in former years by experts of early exhaustion at further depth will have to be revised, as the length of ore courses and increase of silver and lead values available in this mine at a level within 600 feet of where the ores were slated to quit by the high grade experts of former years, by the adjoining Tiger Poorman examples, in connection with the Hercules results, has put this famous old division of the Coeur d'Alene district back on the map in such force as to make any such misgivings as to its staying qualities seem to have been very premature and illfounded and probably points to an error of judgment in the Tiger case as well as others, as it is a recognized experience in deep mining operations of the world at large, that a change in formation, while often locally choking and other-

wise affecting the value of an ore channel, does not necessarily kill it off.

The adjoining Marsh Mine, while only operating during the first five months of the year for milling purposes, produced almost, if not quite as much mineral from its two bottom levels as it did for the whole year's operations of 1913, which is a high tribute to the increased quality and quantity of ore encountered in its bottom horizons. During the latter half of the year this property has been undergoing a plan of special development and equipment with a new vertical working shaft, with a modern electric hoist capable of handling the resources of the mine to a vertical depth of 2,500 feet.

These splendid new ore resources have stimulated interest in the immediately surrounding territory and several very promising enterprises are in course of active development in this locality that are very likely in the near future to bring in new sources of ore.

Burke is unfortunately situated as a living place for the community that is necessarily involved in the operation of these big ore bodies and the principal outlet points of their development, situated as they are almost in the business center of the town, which is situated in a gulch not over 100 feet wide with two lines of railroad and their attendant switch back track, makes a decidedly crowded situation. The immediate canyon slopes have a pitch of over 30 degrees and the scientifically equipped and arranged modern mine terminal buildings of the Hercules Company, with the attendant electric tramway connections, had to be hung on the bluffs in most instances and have involved an enormous outlay, and in connection with the other companies has resulted in crowding some of the town property out of the canyon.

The handling and storing of the necessary large quantities of powder in such a situation is a difficult problem to safely overcome, which, together with the attendant snowslide risks in the spring months, presents many natural hazards and dangers at the surface that it seems impossible to get away from or safely provide against.

Nine Mile Mines—At Nine Mile Creek, in the strike of the Burke system of fissures to the west, the year's results of development and production has more than made good the early promises of this interesting feature

of the Coeur d'Alene formations. The principal Nine Mile operations include the Tamarack & Custer Consolidated, the Interstate Callahan ore body and the Success ore body and are all located in the Prichard formations which have been discredited for years by scientific men as a probable source of commercial ore.

The Tamarack ore body has expanded to over 1,000 feet in length and 10 to 50 feet in width and promises to prove, with further work, one of the ranking ore deposits of the whole Coeur d'Alene field, both in volume and value. It is a relatively clean lead-silver ore, carrying good silver values and very little zinc, with its probable ore resources even in horizontal section as yet not half explored.

On the opposite side of the canyon the Interstate Callahan ore body has been so completely blocked out with intermediate levels and raises as to demonstrate it to be one of the most important zinc ore bodies in the world. It is now proven to be continuous to a vertical depth of 1,600 feet and its great ore chute to have a length at the 1,200 foot level of nearly 1,200 feet, at right angles to its pitch, with a width or thickness varying from 5 to 45 feet of high grade concentrating and shipping ore and demonstrated, by intermediate levels connecting raises through to the surface, to be persistent in its high grade ore phases from top to bottom. Its yield of clean 50 per cent zinc sulphide mineral during 1914, mostly from development operations, gave it a rank of third place in the list of individual zinc producing mines of the world, and its great resources and prospects of probable and possible ore can be safely measured in millions of tons.

The Success Mine has been opened to the 1,000 foot level and shows a stronger and more persistent and valuable mineral channel than at any other horizon in the mine, with a definite evidence of greater merits in ore resources still remaining to be developed at further depth.

These three mines were operated continuously throughout the year and shipped 57,000 tons of clean crude ore and high grade concentrates in lead-silver and zinc mineral, and fully 50 per cent of this great output came from development work, which is a very satisfactory showing from a formation that for years held such a poor place in the opinion of the experts of national and local repute, and I am gratified to have continually encouraged the

pioneers in its exploitation through its primary development stages.

The Prichard formations of this immediate neighborhood are being extensively developed at several other points and such showings of commercial ore are being made as to safely warrant the anticipation of the early development of other important industrial units in this interesting locality.

New Power Line—One of the interesting new features of the year's progress in this and in the Coeur d'Alene district was the construction of a power line extending from the Morning Mine at Mullan, across the mountains to Burke and then to the Montana line, where it is connected with a line built from the Thomson Falls Power plant, of the Montana Power Co., on Clark's Fork of the Columbia, which passes a point of convenient access with short branches to the Nine Mile properties and it is believed will afford a source of electric power at much more reasonable rates than was before available, which will greatly facilitate the opening up and the development of these new enterprises. This new power line construction is of a most substantial character and built with a view to hard and heavy service.

Mullan Mines—The Mullan district suffered a rather dull year by reason of the closing down of the National, Snowstorm and the Great Morning Mine, which affords its principal sources of business, and were forced to suspend operations in the summer owing to the lack of demand for their ores by the smelters. A large force was kept on, however, by the company at the Morning as long as possible, and the big vertical four-compartment shaft extending down 1,050 feet from the No. 6, two-mile tunnel level, was retimbered from top to bottom and the milling plant greatly enlarged at the fine end, where complete flotation and other slime concentration machinery was installed, with a daily capacity of 500 tons, that is the result of a series of years of close study and development along this line by the Federal Co., and will greatly increase the saving capacity of this big mill when operations are resumed.

In the Snowstorm Mine, above Mullan, the stoping ore resources of its big mineral channel were exhausted about September and the milling operations suspended.

This handsome channel of clean copper ore, with a production record exceeding ten million dollars in value, was cut off by a fault at the No. 3 tunnel level and the commercial ore above this fault has been entirely cleaned up and exhausted. The company have since, however, maintained a large force on development work in a vertical shaft below the No. 4 tunnel at a depth of 2,200 feet below the vein apex and over 1,200 feet below the old ore body. The vein has been picked up below the fault at this deep horizon and late accounts give very encouraging evidence of the recovery of the original ore body in this deep development.

The National Mine, between the Snow Storm and the town of Mullan, completed a magnificent modern concentrating mill of 500 tons' daily capacity, and was in shape to operate its magnificent resources of copper concentrating ore when war was declared in August and cut off the market for its product, since which time the enterprise has been shut down and remained idle.

Extensive improvements have been made on flotation lines at the milling plant of the Gold Hunter Co., at Mullan, from which a greatly increased saving of values seems assured. This mine is also revealing some of the best ore in its history in its bottom shaft level below the mill tunnel and continues to maintain the definite earmarks of an extensive and permanent resource of profitable ore.

Kellogg-Wardner Mines—In the Kellogg-Wardner district full operation was maintained throughout the year in all the properties except the Sierra Nevada lease, which laid off for a few months, and a remarkable advance was made in total ore production by these mines which far discounted any previous record of this division of the Coeur d'Alene field. The reason for this increased yield in the face of low metal prices is partly attributed to favorable ore contracts, but more particularly to the fact that the development of recent years in these mines has shown a much higher proportion in silver values than formerly and the additional fact that the lead-silver ores of this section are especially clean and free from objectionable associated sulphide minerals and always in demand in the smelters when any market at all is available.

The bulk of the silver yield from these mines was from

a system of north and south veins that strike almost at right angles and dip in an opposite direction to the old Wardner lode ore course. These veins were only recognized as a distinct system of fissures six years ago as a result of an expansive geological study to which the territory was subjected in preparation for a big apex suit which was fortunately settled out of court.

The Stewart Mining Co. operations, which gave the best year's output of its meteoric career, is on one of these north-south veins.

This is also true of the operations of the Ontario Leasing Co., of the Sierra Nevada Mining Company, the Sierra Nevada Lease, and of the Caledonia Co., and of several important fissures in the footwall country of the main development area of the Bunker Hill & Sullivan Co.

This great yield of rich mineral from these fissures aptly illustrates the necessity of geological study and extensive exploratory work in connection with mining operations in a permanent field, and also demonstrates the value of the optimistic prospector in ferreting out the unproven possibilities of the minor surface showings and lesser attractions of an established district, for two of the most profitable producers of this series of fissures in 1914, were brought into productive shape by men of very limited previous mining experience and very little capital to start with. I refer to both the Stewart and the Caledonia. The productive stage of the Stewart is largely credited to H. F. Samuels and the Caledonia to Chas. McKinnis.

The Caledonia mine has proven the bright particular star in the past year's mining results in Shoshone County. This mine was an abandoned and discredited prospect a few years ago when it was taken hold of by its present manager, Mr. Charles McKinnis, and two associates, and was considered of no value by local experts by reason of its relative remoteness from the main Wardner lode in the foot wall country, where paying ore bodies up to that time had not been recognized. It was picked up from under the nose, and, in fact, partial ownership, of a former manager of the dominant mining institution of the county at that time, and a great deal of credit is due to the persistent efforts of this unassuming operator, Mr. McKinnis, to whose intuitive foresight and insistent push the National Copper Mine at Mullan is also very largely credited.

The Caledonia Mine carries the highest average silver values of any lead mine ever opened in the Coeur d'Alene field and is paying more profit per man employed, even under the present adverse metal market, than was ever made by any mine previously opened in Shoshone county.

The Hypotheek Mine—Six miles west of the nearest Kellogg Wardner operations and entirely in an enormous area of Prichard formations, the Hypotheek Mine, a formerly discredited prospect, has been subjected to a year's vigorous development work on a very intelligent plan involving the construction of a well timbered three-compartment vertical working shaft 900 feet deep connected with a drift at the 700 foot level, from a smaller prospect shaft to the surface. This extensive piece of new development work was decided upon a little over a year ago as the result of the opening of a splendid shoot of oxidized lead concentrating ore at the 700-foot level, that was 200 feet in length and over 10 feet wide. A drift had to be extended along the vein 400 feet to intercept the site of the new shaft, and the vein proved to be continuous with an excellent showing of oxidized gossen ore the entire distance and ore still going west. A cross cut, 200 feet below this level has been run from the new shaft and the vein encountered is 20 feet wide, disclosing a good stoping width of clean 18 per cent lead carbonite ore carrying good values in both silver and gold, with the additional big width of low grade concentrating mineral.

The interception of the vein and paying ore at this new 900-foot level, together with the fact that it is 400 feet west of the richest ore showing on the 700 level practically assures the establishment at this point of another bonanza recourse of clean lead-silver ore carrying an important savable value in gold when the ore chute has been drifted out, for this is one of the most powerful and distinctive fissures in the Coeur d'Alenes. When the vein was cut at this level a big flow of water was encountered that has retarded the work temporarily, involving the installation of a big electric pump. This interesting ore development is remarkable from the fact that it has continued largely in an oxidized condition to a depth of 900 feet, which is considerably below the surface level of Lake Coeur d'Alene and river, and in a section of rather gentle topography. This interesting development not only seems to assure

another big profitable source of lead-silver-gold ore for the Coeur d'Alene district, but occurring as it does so far out in the Prichard formation, and at such a distance from the other operating mines, lends the impression that the Coeur d'Alene field, in spite of its enormous production, approaching three hundred million dollars in gross value, is still largely virgin territory for mine development enterprises, as the ore bearing value of the Prichard formation has now been so thoroughly demonstrated, and this particular horizon of formation has almost as great an areal extent in the Coeur d'Alene district as all the other ore bearing horizons combined, and is much the thickest of the deep ore carrying precambrian series, of which it forms such a conspicuous part.

Metalurgical Progress—The metallurgical progress of the Coeur d'Alene district during the past year has continued to center around flotation methods for the recovery of by-products associated with lead ore and the finer slimed lead mineral losses previously sustained in the concentrating mills. The Federal and Hercules companies have been the pioneers in working out or adopting this new method of ore recovery, and with such success their example has been profitably followed by all the leading mills of the district.

One of the newest, boldest and most creative steps ever undertaken in this field in the metallurgy of sulphide minerals was a consistent effort pushed during the past year by the Bunker Hill & Sullivan Company's management to develop a cheap electro-chemical method of extracting the pure metals of lead, zinc, silver and gold direct from crushed ore without the expensive intervening practice of concentration and smelting.

Barrel laboratory tests on this process have successfully demonstrated the feasibility of getting the metals out of the ore, and a practical working unit of 50 tons daily capacity for working out the economic phases of the process has been installed by this company at a cost of \$50,000. This much desired result has not yet been fully worked out. It has attracted the attention, personal interest and encouraging advice of the leading metallurgist of the Federal Bureau of Mines, and high hopes are at present entertained by its sponsors for the ultimate commercial success of the method, which would have a far reaching and

beneficial industrial effect on the State, as one step of the process produces the pure paint pigment oxides of the metals, including iron.

Other Districts—Outside of the Coeur d'Alene district the other mining districts of the State experienced an extremely dull year in the matter of development and ore production.

Bonner County Mines—The Continental Mine, in Bonner County, completed its new concentrating plant of 200 tons daily capacity, together with a big power plant and mine machinery installation and extended its development underground with most gratifying results in the matter of demonstrating its great ore resources, but was discouraged from shipping or entering into a campaign of mill operations by the slack market for mineral and the property has remained idle since the middle of the summer, except some small leasing operations. Several other new mills in Bonner County were also idle from similar causes.

Active development work on new placer enterprises on the tributaries of the upper Kootenai Valley were carried on throughout the year and are so far advanced as to promise extensive operations and important precious bullion results the coming season.

Of these enterprises the Idaho Gold & Radium Co. have expended a large amount of money in canal and reservoir construction and hydraulic equipment and have an enormous deposit of relatively high grade placer gravel, which, according to apparently authentic reports of its average value, is said to contain 50 cents per cubic yard in a bank of small gravel over 100 feet high and should result in a greatly increased yield of precious bullion for Idaho when the extensive equipment has been gotten into full operation.

Mineral Lumber—Further south, one of the most interesting results of the past year in our mineral industry was the development of a process to utilize some extensive resources of short fibre asbestos, situated on State land at a point about 12 miles north of Kamiah near the line between Idaho and Clearwater counties. At this place an ingenious German has invented a simple method of pulping, washing and forming this high heat resisting mineral into commercial lumber shapes and a \$20,000 plant is being installed for the purpose of treating this

mineral and the production of really fire-proof building material, among which one of the specialties is a shingle for roofing purposes that can almost compete with the common red cedar shingle in price. These products are flexible and almost as easily handled and worked with carpenters' tools as organic lumber forms, and the enterprise promises to be the nucleus of a big industry, for the superiority of a really fire-proof and unburnable mineral lumber at anything like ordinary lumber prices can readily be appreciated. The mineral is formed under hydraulic pressure after being pulped and washed and can be tinted in any shade desired. The deposit from which it is made appears to be very extensive and may run into millions of tons, as it shows surface outcrops over an area of one mile wide by three miles in length. The new company handling this enterprise is substantially financed and have obtained a favorable lease from the State for a long period of years, which is so drawn that the State, after a reasonable period of development, is to substantially participate in the net profits of the enterprise in addition to its tonnage tribute, if the venture proves to be successful.

Red Ledge Mine—In Adams County, at Deep Creek, near the north end of the Seven Devils district, and only 12 hours' traveling distance from Boise, what promises to prove one of the notable mineral discoveries in the history of the State was made in April. This discovery was made in a 300-foot cross cut tunnel which now discloses an ore body 84 feet thick, of which 30 feet is oxidized ore carrying about \$7.00 in gold and silver, and 54 feet is massive copper iron sulphide mineral containing average values of 4.6 per cent copper and \$5.00 in gold and silver. The further development of this ore body has since been undertaken by some prominent Idaho operators and it has the earmarks at this time of proving a sensation as a gold and silver bearing copper ore resource, as the big body of mineral already encountered is only one phase of the possible resources of this interesting prospect, which, in addition, carries a surface exposure of red oxidized porphyry 1,000 to 2,000 feet wide and several miles in length, outcropping up a very steep canyon slope, which carries light values in gold and silver with traces of copper scattered over its entire surface, according to numerous tests, and may prove

on further development to contain sufficient value, when the permanent water horizon has been penetrated, to afford enormous resources of the low grade concentrating type of porphyry copper ore.

Big Creek District—Several expert examinations were made of the big low grade gold ore deposits of the Big Creek district in Idaho County, which resulted in some favorable average values being obtained. These ore bodies range from 60 to 200 feet in width or thickness and would seem to warrant further extensive development and the prospect of equipment with extensive milling plants, for while these mines are in a remote and isolated district and at present difficult of access, the superior values they contain in their shallow development over what is now being capitalized on an enormous scale in the southeastern Alaska fields, leads me to believe that we shall ultimately develop a big center of gold mining and production in this Big Creek district that may largely discount the present total annual gold yield of the State.

I have succeeded in calling these deposits to the attention of several responsible mining operators and handlers of low grade ore, but it seems extremely difficult to get the buyer and seller together on reasonable terms in this situation and the prospect owners of these deposits have repeatedly stood in their own light and the progress of the district in this respect.

Considerable activity was manifested in the gold placer resources from a dredging standpoint in the vicinity of Warrens and Resort, on the road to Big Creek; these placers are also rich in monazite, and at Warrens the old Rescue vein was successfully developed at a new deep level, where a shoot of high grade gold ore was encountered and is now being drifted upon. This development has greatly stimulated interest in the numerous ore veins in the Warrens district and will doubtless mean further exploration and development of these interesting deposits. Some activity was also manifested in the adjacent Marshall Lake district, which has a reputation for phenomenally rich specimen gold ore as well as some very high average values.

Custer County Mines—At Mackay, the Empire Copper Company's market for ore was shut off during the summer by the war, but a full complement of lease operations has

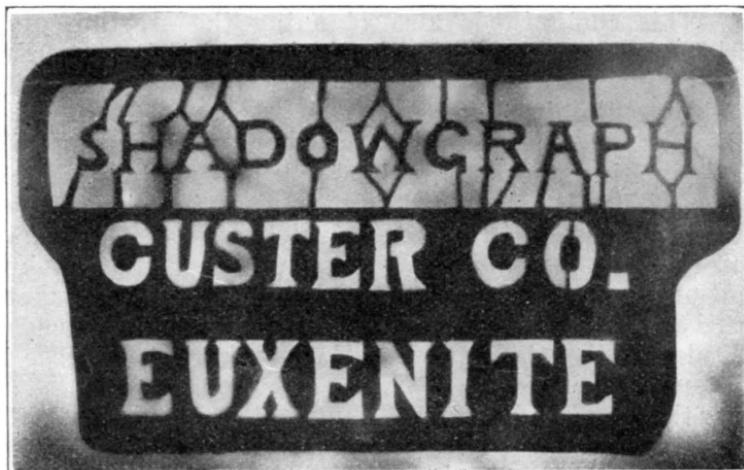
since been continued by the company, giving employment to a force of over 60 men, and when visited last fall the many interesting phases of this company's group of mineral claims was showing the usual rich promise of continued production when a market is afforded. This company is pushing a deep tunnel that will undercut the main deposits nearly 1,000 feet below the present lowest level. This tunnel has already attained a length of between 3,000 and 4,000 feet and will probably be driven into the main ore zone within another year and has every promise of disclosing a greatly expanded tonnage of profitable copper ore. This company is also planning the erection of a Christensen Process mill with which to treat its extensive body of low grade mineral on the ground that will not stand present shipping charges.

At Clayton, the Red Bird Smelting Co. operated its small smelting plant for a short run and made a production of 2,700 bars of lead bullion carrying good silver values. The Red Bird Mine, which was the principal source of ore for this operation, has a splendid development of relatively high grade smelting mineral that is estimated at 100,000 tons and should afford a profitable source of lead and silver bullion when the metal prices advance to a decent figure.

Further south in Custer County, at Jordan Creek, the Oster lease on the old Montana Mine succeeded in finding a handsome chute of high grade gold and silver milling ore that yielded very handsome returns in a mill run and shipping production consisting of a small carload that is said to have netted the producer about \$300 per ton.

Radium Ore—The accompanying illustration tells its own story and the photograph from which the half tone plate was made was taken with its own light exclusively from a sample of euxenite mineral, discovered by Henry Sturkey in a placer mine at the head of Kelly Gulch and within 300 feet of a low divide which separates that tributary from Stanley Creek in the Stanley Basin country. This is a rare mineral, rich in uranium oxide, the principal source of radium, and also containing other rare oxides. The picture was made and the mineral classified by A. G. Van Eman, the well known local chemist and assayer of Boise, and the discovery amplifies my suggestion of a year ago, when the radium subject was such a prominent figure in the press of the country, which was to the effect that

while Idaho's dominant sedimentary formations were unfavorable, as far as experience had gone in other sections for the occurrence of carnotite, the yellow oxide of uranium, the crystalline formations of Idaho are especially favorable at many points for the occurrence of the richer uranium oxide minerals. The point at which this ore was discovered by Mr. Sturkey is in such close relation to an erosion divide he is of the opinion that its primary source can be found with a little further prospecting in a series of pegmatite veins that cross the divide.



Other specimens of rare mineral oxides have been reported from other parts of the State and their merits are now being investigated, and it is not unlikely that among its great variety of rare mineral substances a commercial deposit of radium bearing ore will ultimately be found in Idaho.

Blaine County Mines—Some interesting progress was made in mine development in Blaine County, tending to establish the permanency of its ore bodies and a recovery of their former productive importance by the discovery of rich values at deeper levels and below faulted conditions. The Independence Mine, near Ketchum, made a good output of rich silver-lead mineral and reserved several important shipments in storage to wait better metal markets. Two of this county's gold mines made an interesting output, indicating better days, and others are

in line for further development and give eminent promise of successful results.

Fremont County Mines—The Wilbert Mine, in the Dome mining district, on Little Lost River, operated its milling plant for several months, produced and shipped several million pounds of lead in ore, but was forced to close its milling operations in the fall on account of low metal prices which left no margin of profit on the operation. An interesting and encouraging feature of the year's development at this enterprise was the discovery of much higher silver values in the lead ore on the new No. 5 bottom level now being developed through a 200 foot winze where the average silver values are said to show an increase of 100 per cent over the levels above.

Lemhi County Mines—At the Gilmore mining district, in Lemhi County, the Latest Out Mine enjoyed a profitable year's operation, but its output was greatly restricted by low markets. The development of this mine, however, is showing its strongest manifestations of mineral at the bottom level, 600 feet deep, but still 600 feet above the bottom level of the adjoining Pittsburg-Idaho Mine, which outcrops lower down the same steep mountain slope on which they are both situated.

The Pittsburg-Idaho Mine made a much smaller output of mineral than in former years, which was largely derived from leasing operations in the middle levels. The property has been cleaned up and carefully studied as to its ore courses and faulting system above the No. 6 level, but no extended permanent development at depth was undertaken. This mine has been quite a large and profitable producer of lead-silver ore during the past few years since the railway reached Gilmore, but has been handled on a petty profit sharing policy without regard for its permanent development. The bottom level, at 600 feet, has apparently reached permanent water level with a definite change in the character of ore from straight oxide mineral to straight sulphide mineral, involving pumping and milling facilities. The main ore course, however, is as large and as rich in lead and silver values as at any level above, with the added prospect of a valuable by-product of zinc. The sulphide phase of the deposit consists of coarse friable crystals of galena blend and iron and presents no serious problem in milling separation. The geological

situation of the deposit has been very thoroughly worked out by a United States government bulletin and gives the most encouraging evidence of a deep-seated ore body and the enterprise presents a splendid opportunity for a little intelligent mining development finance with every evidence of profitable results that may last indefinitely.

In conjunction with the Pittsburg-Idaho Company, the adjoining Allie and Gilmore Mining Companies, have constructed a joint development and transportation tunnel which is connected at the surface by a short incline tramway to the Gilmore and Pittsburg railway terminal. This tunnel cuts the Pittsburg-Idaho vein at the 400 foot level. It has been extended into the mountain a total distance of 4,764 feet and has attained a face depth of about 1,000 feet, cross cutting on its course fully a dozen pronounced lead-silver bearing fissures that traverse the uniformly bedded ancient blue limestone formation and intrusive dikes, and affords a splendid avenue for drifting out these very promising ore courses at good depth, several of which warrant the anticipation of similar profitable ore results that have been obtained from the present comparatively shallow development of the Latest Out and Pittsburg-Idaho veins of the same fissure series.

One of the most attractive features of this interesting series of veins, and situated only a few hundred feet east of the main Pittsburg-Idaho lead-silver vein, is a big fissure ore course ranging from a few inches to 20 feet thick and developed for several hundred feet in depth and length on the joint property of the Allie and Gilmore Mining Companies that only carries small traces of lead and silver and whose exclusive commercial values are in gold and iron. This powerful fissure is filled with a clean, earthy, brown iron oxide mineral which on account of its high fluxing value receives a premium from the smelters. It carries average gold values of \$12 to \$15 per ton and occasionally small bunches or streaks of very rich visible native gold specimen ore; one of these slabs disclosed in the development of this ore course from the 400 level during the past year was 40 feet long and nearly as deep by two feet thick, which produced a 50-ton shipping product that netted the company better than \$300 per ton at the smelters, while the total shipping receipts from the operation of this ore course during the past year pro-

duced gold bullion receipts of considerably over \$100,000. Occasional small pebbles of copper carbonate stained ore are found with a nucleus of chalcopyrite and are indicative of interesting results at further depth; otherwise, it is an almost straight brown iron oxide and bright high grade free gold in dry ground. The specimen ore found is indicative of other bonanza values in carload lots at further depth, which, together with the strength of the fissure and its closely related geological situation, present an interesting comparison, from a prospective standpoint at least, with the famous old Mammoth Mine at Tintic, Utah, with its long history of profitable production and rich ore occurrence. These leading Gilmore properties and the big series of pronounced fissures they embrace present a fallow field for a mining merger and a campaign of deep development in which most of the preliminary risks have been already substantially eliminated. The adjacent territory also affords some flattering chances for systematic mining development ventures.

Gold Production.

The gold production of this State shows a decided falling off for the year, which I believe, was true of several other adjacent gold-producing States, which is a serious situation in the present condition of the Nation's finances and a subject that is worthy of consideration by our Federal authorities, who are largely to blame for the lack of interest in the search for and production of this most vital element of the national credit.

It is unquestionably true that the easily available bonanza deposits of gold-bearing ore have been largely discovered and many of them exhausted. It is equally true, however, in my opinion, based on 30 years' experience in Idaho's mineral resources, and a partial knowledge of the resources in this line of adjacent States, that the Rocky Mountain country is still potentially very rich in virgin gold deposits. It is a fact worthy of consideration that practically all metallic ores of the Rocky Mountain States contain more or less gold, and the further fact that there are enormous deposits of gold-bearing rock available, which, while very low grade, make up in quantity what they lack in quality, and judging from the ex-

amples afforded by a few eminent engineers of the highest standing, especially Fred W. Bradley and D. C. Jackling and their close associates, who are capitalizing mining and milling enterprises to the extent of millions of dollars in actual cash investment, based on ore values containing \$1.50 per ton, I consider that the opportunities and resources along this line of values are of such a nature and extent that with proper encouragement they can be made to not only maintain our maximum national annual yield of gold, but to increase it 50 per cent in a few years. This is the only metal for which there is at the present time and always has been, and probably always will be, uniform international demand as a credit basis, and if our country was producing, as I believe it is able to produce, one hundred fifty million dollars worth of new gold a year in place of suffering a rapidly receding output of a little over half that amount, we should be held in different standing by other great nations abroad, and be in a far more independent and prosperous condition for attracting capital than we are at the present time.

Federal Restrictions.

It seems carrying inconsistency to a ridiculous degree for this Nation, in the prosecution of a fad, to include in its conservation idea the conservation of its idle virgin gold resources, especially when, according to press reports, it is in a position of temporarily repudiating its debts abroad and to have been on the verge to suspension of specie payment in its effort to maintain the legal requirements of its available gold reserves.

The specific instances of discouragement to the discovery and development of new sources of gold by the present national policy are its petty supervisory restrictions in the acquisition of title to mining lands through the special agents, Forest Reserve Officers and Interior Department rulings, and the petty ways under which they operate, which are so inimical to the discovery of new gold. Added to this are the direct persecution of established gold producing enterprises with unwarranted and morally outlawed claims against mining companies for cutting timber on public lands during years gone by, when such privileges

were recognized and countenanced by the Federal authorities as a pioneer necessity and always had been.

A specific instance in this connection is in the case of the Delamar Mining Co., one of our oldest and most substantial mining enterprises in Owyhee County, who have enriched the commerce of the country with millions of dollars worth of new gold from an operation on a desert range of mountains remote from railroad transportation, where they had to depend on the wood rustlers of the region for the few knotty stulls they needed and their domestic fuel requirements, consisting largely of desert brushwood that never had any lumber value and which was bought and paid for at excessive prices by reason of its scarcity and which they are now asked to pay for again at finished lumber values, which the material never possessed, on the findings of an officious special agent, under the bureaucratic rulings of our conservation controlled Federal Departments at Washington, based on the spiritless verbiage of law that had been permanently annulled by common usage and constitutional pioneer privileges of the previous history of the entire nation.

This company has produced gold bullion to the value of several hundred thousand dollars a year since it was first incorporated, more than 20 years ago. Of late years it has gotten into lean ground on which the possible margin of profit was very small, and this unjust suit of the government for the recovery of two hundred and fifty thousand dollars has disheartened and discouraged its operators to the point of almost total suspension, with the consequent loss to the Idaho gold yield that was seriously felt during the past year and is likely to result in the total abandonment of unsolved geological problems that are rich with the promise of big virgin coin metal results.

A similar suit which I believe demands ten times the value of this one is hanging like a Damocles sword over the Anaconda Copper Co., of Butte, Montana, for timber used during the ancient history of its pioneer days, which it seems to me is also an unjust exaction and persecution that the gold producing industry is called upon to bear, totally inconsistent with the present urgent needs of this Nation for an additional supply of new gold.

The unearned increment to our national government in the way of beverage revenues alone that has accrued from

the Anaconda's operation in Montana as a result of the use of that timber, has probably amounted to several times the excessive charges now being sought, and the efforts of this great pioneer company in mining and metallurgy is largely responsible for the present great copper sulphide ore mining and treatment industry in the United States of America, which has resulted in giving this Nation a monopoly in the copper metal business of the world that makes the German potash monopoly we hear so much about seem like a talcum powder trust by comparison, in addition to which this company's pioneer work can be safely credited with a big percentage of our present annual gold yield.

Almost all the copper ores of the west, as well as all other metallic ores, produce an important amount of gold. This is also true of our straight lead-silver ore in the Coeur d'Alene district, which while the producers receive no credit for it, puts into existence annually, nearly \$100,000 worth of new gold, and it seems ridiculous that the government should put a straw in the way of the progress of this most vital basis of its rapidly expanding business demands.

In recent years, the agricultural claimant has been given precedence in consideration over the mining claimant in government land title matters. Our Prussian Forest Reserve policies, in spite of its suave arguments to the contrary, gets in the way of mining progress constantly with its petty restrictions, and there is no logical reason on earth why this industry should not be given the encouragement of all the ripe timber it can use to a point of profitable development in place of conserving it to the detriment of the second growth and at the demand of expansive protection against the risk of destruction by forest fires. The encouragement in title matters should be loosened up to the old liberal plans that made the Nation great and saved the face of its credit after the civil war by the production of coin metals.

Mining lands are, in nine cases out of ten, absolutely unfit for any other purpose than mining, and the old plan of analytical tests showing a trace of metal considered by the repeated decisions of the United States Supreme Court, on which millions of dollars were won and lost by contending apex litigants, should be sufficient warrant for the discovery requirements and initiation and patent-

ing of mining locations that are not specifically an agricultural or timber grab, against the petty exactions of commercial ore values at the surface and disregard of tributary conditions, with so many examples of buried ore bodies of great commercial value that the industry affords and over which even an analytical assay could hardly be obtained.

There are very few examples that I can recall where any effort is or has been made to grab government land in large areas on mining pretenses; in fact, no such evidence of misappropriation of land can be found in Idaho. The largest group of claims I recall is owned by our dominant mining company, in the Coeur d'Alene district, and covers an area of 2,000 acres. It has largely been bought as necessary protection against apex conditions under our imperfect mining statutes, and there is not an inch of the entire group that is not warranted for this purpose. The rugged mountain slopes it embraces is totally unfit for any other purpose than mining, except in the renewal of its former timber growth, which nature is industriously accomplishing without any special Forest Reserve aid. The acquisition of this land has involved the investment of millions of dollars in purchase price and litigation costs over apex rights and the demand for commercial ore values at the surface of the few dangerous litigation breeding loophole fractions that still exist in its map seems ridiculous.

Titles have been industriously contested by eminent representatives of the Interior Department and the Forest Reserve in the Coeur d'Alene field, where manifest good faith was shown by large expenditures of money in prospect development work, and while the ore outcrop requirements do not measure up to the present exacting cold letter of the law, the prolificness of the mineral development of the adjoining territory from similar blank surface showings fully warranted the claimant in expending his money and driving hundreds of feet of tunnel work in a favorable formation with the necessary metal trace assays that formerly sufficed, and it seems radically unfair that an industrious prospector or small development company should be deprived of his rights to acquire title to land of this class who spends his good money in a search for mineral and especially on the ground I

have in mind, that covers a barren mountain top, without a lumber tree of any description on it worthy of the name.

State Revenue Rights.

The conservation policies of the National Government, which have been largely copied from the methods of the Mailed Fist of Imperialism abroad, do not fit the American plans of government, of freedom and equality of action, and their application to the resources of Idaho is the present principal bar to its industrial progress and the proposed tightening up and extension of these unconstitutional bureaucratic methods should form a subject of serious consideration for our forthcoming Legislative Session, for the bills now pending in Congress, if successfully passed, will not only deprive our State of the rights guaranteed to us by the organic law of the Nation, but will seriously deteriorate the quality of our citizenship and in common with adjoining public land States will ultimately result in the creation of a feeling of sectional hatred and distrust in this Nation.

The way I understand the literature of the National Conservation theorists in restricting our opportunities, it is largely based on the decision of the Supreme Court at Washington, which says that the Federal Government has the power and prerogative to do about as it pleases with its unappropriated territorial assets in the public land States. I believe in a strong central government with a high power prerogative, but there are some things, in my humble opinion, that even the parent government cannot do without amending the Constitution. It cannot be partial in its distribution of State privileges; it cannot take money from a weak State and divert it to the benefit of a strong State without seriously running the risk of deteriorating the first word of its great title. It cannot unjustly transform its conservation theories to a money-making scheme at the expense of the newer States because of their temporary historical disadvantage.

It has always been a common subject of debate by our National Councils, when Territories were seeking admission to the Union as States, as to what the Territory contained in the way of natural resources on which to main-

tain a State government and on which to base its claim of recognition in the sisterhood, and this subject has always been pretty thoroughly looked into before the Admission Act was signed, for the reason that the fathers of the National Constitution, the delegates from the Thirteen original States, specifically retained to themselves the sovereign right and privilege of administering their own local resources, and all the States that have been admitted since have carried in their Admission Act, and subsequently enjoyed until conservation came, the same privileges reserved and demanded by the thirteen original commonwealths, which to my notion acts as a first mortgage against the central government in its trustee ownership of its unassigned territorial area within the new State, excepting in such limited national requirements as Indian, Military and National Park areas.

Idaho's people have displayed all the national attributes of self government and statehood in a high degree. The history of our present territorial boundaries in the struggling periods of its first settlement discloses among our people a fair quota of minute men, minute women, and minute children for that matter. When I came to Idaho over 30 years ago, the tales of the pioneer and his family who had been forced to stand guard for days and weeks against their treacherous Indian foes and the hardships they frequently had to endure to protect themselves against massacres, were of common and wide-spread occurrence and the map of the State is pretty thickly spotted with Indian creeks, battle grounds and massacre sites, that our brief history records, when our United States authorities were a long way off and in poor shape to afford protection. We have since supplied a regiment and several companies of men on the demands of the Nation's need. We have sent to Washington to the highest council of the Nation as big a proportion of a high quality of gray matter as any similar unit of government in proportion to our population.

Our State affairs, with a few trifling exceptions, have been handled in a creditable manner since we were admitted to the Union, and there is no just reason why we should be discriminated against by any government policy.

Idaho's future success as a commonwealth depends upon the national recognition of its place in the Sun. This

place in the Sun argument, is, of course, a borrowed phrase of the European government's excuses for going to war, but it is specifically applicable in our present situation and critical history making period.

Our natural resources are very largely sun products or the result of solar activity through the ages and are indigenous to our territorial boundaries. We are willing to give them up in a liberal degree to the Nation's necessity, but such a transfer must involve a just recognition and compensation on the part of the national government and at least an Indian's consideration to be fair and equitable, and we cannot afford to permanently trade them off for the temporary alleviation of any pressing need of a part of our population.

Idaho's Natural Resources.

Idaho's assets in natural resources and sun products are of such variety and value, when properly appreciated, as to form the basis of one of the most populous and prosperous States in the Union.

A partial list of its potential industrial possibilities, in addition to its very fertile but limited area of arable lands, and thirty million acres of grazing lands, are as follows, based largely, of course, on opinion, which, however, in the mineral features, has successfully prevailed with eminently profitable results against the adverse opinion of some of the highest authorities in the land:

Lead, silver and zinc ores well developed, one hundred million tons.

Gold and silver bearing copper ores, five hundred million tons.

Gold and silver bearing silicious milling ores, five hundred million tons.

Portland cement rock, several thousand million tons.

Phosphate rock, high grade, between 70 and 80 per cent, ten billion tons.

Phosphate rock, second grade, 40 to 50 per cent, one hundred billion tons.

Sulphur, one hundred million tons.

High grade coal, our weakest resource, fairly assured, ten million tons.

Idle water power, five million horse power.

Timber resources, one hundred twenty-five billion feet, board measure, including twenty billion feet of pulp wood pine.

We have also an extensive area of potash and nitrate bearing formations, that compare, to say the least, with the best prospects that have yet been disclosed in other States and did not cost the national government five cents to discover.

Add to these magnificent assets an infinite variety of rare minerals, many of which promise commercial quantity and profitable operation. Our mineral and other natural resources are of such magnitude and are of such common industrial demand as to afford an extremely fertile field for legitimate industrial investment and are susceptible of ultimately affording a home market for all the present products of our farms.

Our agricultural resources are limited by the rugged typography of the State, which consists of a highly elevated and deeply eroded broad plateau; its northern half a dense forest and its southern half an almost treeless desert. We have a total maximum area amounting to five million acres of irrigable land. We have at the present date less than two million acres under irrigation and its production has to depend for a market on the adversity of other sections of the United States in crop production and is hampered by an intervening freight charge covering distances of 500 to 2,000 miles. It is a physical impossibility to shorten these long hauls of Idaho farm products to present markets, and it is decidedly improbable that the present per ton mile haulage rates will ever be much lower. These facts put our agricultural industry at a definite and serious geographical disadvantage that can only be overcome by the local development of a home market.

The current proposition from Washington is that we trade the almost priceless industrial assets I have outlined, or at least our right to enjoy progressive use of and tax benefits from them, for a petty advantage of a government loan to finish a few of our irrigation projects that have fallen down through some engineering mistakes, but mostly through loose financing. There is not any reason why the government should exact a permanent relinquishment of our natural rights in the sun for this

loan while we are expected to contribute our share as a gift to other States for the permanent establishment and improvement of national interior waterways.

There is no question but what the suffering settlers on our unfinished irrigation projects should have recognition, and that a thoroughly unbiased study be made of the possibilities of economically completing some of these projects, but if we take as an example the proposition in this line that is nearest our nose, the prospects in matters of cost are rather discouraging. I refer to the Boise Government Project, which, when it was first launched, was estimated by its engineers would cost the settler \$12 per acre; later the estimate was raised to \$25 per acre. By the time this project is finished, the water right that will be transferred under it and the contingent drainage system involved, it is estimated by conservative judges will cost the settler fully \$100 per acre. His acquisition of the land either by homestead settlement labor or relinquishment purchase, will figure up in most instances another \$100 per acre, which means his land and water costs, not figuring maintenance and taxes, will be close to \$200 per acre, and it is questionable in the opinion of agricultural authorities whether there is such a thing as \$200 land for general farming purposes in the Snake River valley, excepting suburban tracts, for under the present remote market conditions for his products there is hardly anything that the farmer of this region can raise profitably, outside of the animal industry, on such land values, and it is further questionable as to whether meat animals generally can be successfully raised within a fence the year round on irrigated land.

Our irrigated farms are at the present time the principal source of tax revenue for the maintenance of State and local government and the burdens they must necessarily bear in water tributes that must be involved under whatever scheme of further improvement is undertaken to increase the present acreage, is going to make their tax payments a severe burden for a long time into the future, unless a closer and more dependable local market can be provided for their products to eliminate in a large degree the excessive freight charges these products must bear to find a market under present conditions.

That such a remedy and such a local market for the farmer can be developed there is no question in my mind, from the basis of industrial resources this State possesses in addition to agriculture, and which I have outlined, and which, to my mind, presents the only remedy and only permanent relief that our great leading industry can figure on in the future.

Our people have developed a splendid sheep industry, but it is near its limit and is based on the fact that its operators by paying the Government are afforded range pastures for their flocks during the greater part of the year, and it is definitely manifest that no such industry could be maintained under fence on irrigated land throughout the year.

Our dry farm operations are of very doubtful merit from a taxable property creating standpoint, and the sheep men are more than half right in declaring that the large acreage now being mistaken for dry farm purposes in the more arid desert sections away from the mountain slopes are simply destroying a decent winter range for the sheep to very little purpose and a very slim prospect of ever developing taxable land values, as a few successive years of low precipitation and dry spring conditions would destroy the present doubtful productive value of many of these dry farm ventures, and that such a cycle of dry years may recur it is only necessary to refer back about 12 years for an example. In the summer of 1902, near the middle course of the Snake River in Idaho I personally rode down the main thread of the main stream for several miles from below the Blackfoot bridge to Fort Hall bottom without getting my horse's shoes wet. I cite this fact simply to call attention to the unreliability of this new feature of agricultural property values and taxable resources and urgent necessity for a maintenance of our people's sovereign right over their other natural assets of a revenue producing value, in addition to their limited agricultural resources, upon which it is impossible to base any prospect of material industrial advance over our present distressed condition, and if we are to be deprived of our constitutional birthright in our other important resources of business and revenue creating

value by the present proposed Federal enactments and exactions, it will be a sorry day for this commonwealth when it lets these guaranteed advantages slip from its control.

Water Power Resources.

As I have stated, it is the opinion of competent engineers that our water power resources, an acknowledged asset of the State of Idaho, will aggregate fully five million horse power.

The present pending legislation in Congress would annul and permanently alienate this right of our people to the sovereign administration of a government bureau, and have the nerve to charge the users of this natural source of wealth \$1.00 a horse power a year for an otherwise practically worthless riparian land right involved with the definite prospect that the people of Idaho, who are to ultimately use this power, be charged this extra tax. Another pending bill is to specifically and permanently fix the sovereign right of the National government in most of our other natural resources and would only dispose of them for use under a restricted lease privilege and long range supervision, while other States have been afforded their guaranteed constitutional right to have these sun products distributed to private ownership under most liberal laws and quickly passed to a condition of available local State government revenue resources.

On the government side of this argument there isn't any doubt but what the past Federal methods of liberality in such matters has been turned to license and attempts at undue grafting control by financial interests. We have an example of this under our eyes here in Boise, of investments based on water power, in which the juggling and the pyramiding of securities have been carried to a disgraceful extent, and it is surprising that any responsible financial institution would be connected with such flimsy evidences of credit, but it seems to me that there must be some other way for the government to curb this wildcat inclination of financiers without killing legitimate investment, which should and would pay big interest on honest capitalization; instead of exacting an unjust tribute and relinquishment of his recognized

and constitutional sovereignty from the innocent bystander, for, as pointed out in this connection by Representative Underwood, the government always retains its excise power of regulation in such matters, and in addition there has been created Utilities Commissions, who, if necessary, can be given a regulative power, passed by the government, without destroying the constitutional rights and privileges of the public land states in the management of their purely local affairs with the result of permanently obscuring their place in the Sun.

Comparative Assets.

As a comparative example of the value of such assets to a recognized unit of the National Government, we may take the enormous advantages that have accrued to the commonwealth of Pennsylvania (where our most vicious persecutor lives), as a result of its phenomenal resources of coal. That coal was produced during the carboniferous age of the earth's history, when the Sun was especially powerful and the local earth's surface conditions especially favorable for the accumulation of vegetable matter, which was subsequently compressed into coal. During the same age and time of the earth's history the same Sun was shining on that portion of the present area of the State of Idaho, now constituting the solid surface of six of our southeastern counties, which at that time consisted of an ocean surface with probably a few oblong islands of barren rock formation, unfavorable to the accumulation of vegetation. These islands, however, were bordered and surrounded by a vast marine plateau of warm shallow water, forming an ideal cultural medium for the development of myriads of organisms, according to the conspicuous record of the rocks, in the form of bivalve and univalve shell fish, in sizes varying from a present day periwinkle to that of a big oyster and to whose excretia and decaying bodies is attributed our phenomenal resource and accumulation of rock phosphate, in beds and veins as uniform and regular, as extensive in tonnage resources and higher in tonnage spot value, than Pennsylvania coal and according to the highest scientific authorities as essential to the continued welfare of man in America as is coal. The resources

of this mineral in Idaho, in conjunction with the same series of mineral veins or beds in the adjacent States of Utah, Wyoming and Montana, is practically exhaustless. It is capable by proper encouragement and handling of at least doubling the present total average grain yield of the United States in a few years from the present cultivated acreage, which means an increased asset to the whole Nation of several billion dollars annually presents the prospect of increasing the internal traffic of our northern railroads to such an extent as to make their Panama loss seem a mere bagatelle by comparison, and there isn't any logical or just reason under the Constitution why Idaho should be deprived of the same liberalities in the use and enjoyment of this unquestionable sun product and local resources in the same degree that has been accorded Pennsylvania with its coal, to its eminent industrial advantage.

The fathers of the original Constitution were unquestionably right and far sighted in retaining their sovereignty over these purely local resources on which the individuality and prosperity of their respective commonwealths had to depend, and which our form of government demands recognition of and cannot segregate by selfish regional discrimination.

The varying advantage of their place in the Sun, which the different States enjoy, is aptly illustrated by California, whose current and direct advantage of excess sunshine and its effect on crop production, combined with its other local conditions, draws money like a magnet in the form of wealthy and well-to-do permanent and transient residents from other States. There has been no suggestion of charging California any tribute to the older States for the enjoyment of this local natural advantage.

Our present able Secretary of the Interior, Franklin K. Lane, is said to be a native Californian and a Conservationist. In my opinion, this able statesman sizes up like a brand new gold dollar in comparison to a bogus nickel with his immediate predecessor in office in his conception of the resources of the western public land States, but as a Conservationist in the present drastic exactions of the fad, the glitter of ambition's idol must be the mote in the eye of his natural instincts of equity, as no true unbiased son of the Golden West would deprive the sister Pacific

States of their relative rights and privileges and place in the Sun that California enjoys.

We have a man now representing us in the Senate of the United States at Washington who, according to the captious critics of the east, ranks among the upper ten of American Statesmen. He is a big asset in National affairs at this time, and Idaho's people are proud of him, of his ability and of his laudable ambition. He will doubtless be there with the proper protest when our melon patch is further raided by the discredited political prophets, vested interests, and ill-informed sentimentalists of the east in their effort to permanently alienate our remaining rights to the control of national absolutism and long-range administration; in fact, there is no other course for him to pursue. I listened to the speech of acceptance of our Senior Senator, before the 12th Idaho Legislative Assembly, in which he stated that they were the executive representatives of a definite unit of the qualified and real creators of our national laws and asked to be supplied with their desires in this connection and he would use his own judgment in endeavoring to have them executed. There should be no hesitancy on the part of the successors of that Legislative Session now assembling to furnish this able representative of ours with the necessary ammunition for the protection of our rights and privileges, and if these matters are given proper consideration in the prevention of the prospective further alienation of our commonwealth, Idaho can enter an era of prosperity and progress and make good in a brilliant way its apt title of "Gem of the Mountain States."

The quality of the further National control of our local affairs is definitely forecasted by the recently published extracts from the annual report of the present National Secretary of Agriculture, who would tie a red tape around every remaining tree in Idaho that is not already under the surveillance of a Federal officer and even extend his tags to the sagebrush and chaparral, by leasing every remaining acre of the government land largely for the revenue benefit of other States, and also makes the further generous proposition that if the people of this State want good roads on the present three-fourths, trustee-owned National area of Idaho, that they should be willing to pay two-thirds of their construction cost, while

our national landlord pays one-third, and that the poor, suffering local taxpayer should be willing to carry all the burdens of their maintenance. These alien, un-American sentiments are a pleasant thing for the Idaho citizen to anticipate and are about on a par with the present administrative policy of the extensive national forest reserves, now covering one-third of our area and whose officers have the power to drag a free-born American citizen into a Federal Court for cutting a rotten ripe pine tree without their august permission, while if said officer sees a crime committed on his preserves, ranging from petty larceny to murder, he can shrug his liveried shoulders and let the stump grubbing local taxpayer take care of the resulting police and court costs. Such a system is not only Prussian, it is Russian, and does not fit this country or its people. About the only Americanisms that have been injected into it are the results of the single-handed efforts of our late lamented statesman and unselfish patriot, Weldon B. Heyburn, who died with the respect of his keenest adversaries in debate and whose living presence today would be of incalculable value to the current critical history-making period of our commonwealth.

In conclusion, I wish to say that the foregoing diversion from the ordinary lines of Mine Inspectors' reports are blended with the statutory requirements of my position to exhibit and encourage the development of the mineral resources of the State. I have no personal quarrel with any government official, for I find that those of them with whom I have come in contact, with a few subordinate bonehead exceptions, are clever and efficient gentlemen and only too well represent the rigid conservation ideas of their employers, but it is the unfairness of the system and its proposed extension and inevitable interference with the Constitutional State rights of our people that my argument is directed against.

I would further state that my views are not influenced by political considerations, as my personal political ambitions have been amply and fully satisfied. I have accumulated during the past 14 years more popular votes than any other man in the history of Idaho State house politics. I am not insensible of this splendid evidence of confidence on the part of the people of the State and have

always tried to distribute the limited funds with which my department has been supplied to the best advantage of all concerned.

My present arguments are simply an effort to pay a debt of gratitude to the people of Idaho and to try and awaken them to the business creating value and variety of the treasures of nature with which our State is endowed, and the necessity for their protection against predatory influences. I am fully aware of the stone wall of opposition my anti-conservation arguments will meet, but the good Lord hates a quitter, and I still have confidence in the spirit of fairness and equity of the whole people of the United States and their respect for its organic law in spite of the borrowed hobble skirt, European styles of administration our National Solons have been catering to of late and that they will get back to old principles after a while and handle the vexing problems of both local and national import with essential justice to all. The remedy I have suggested for the present depressed condition of our agricultural industry and land values may seem far fetched, but it is potentially sound, as I believe that the statement can be sustained that the present industries of Idaho, other than agriculture, are providing a home and a cash market equal to 25 per cent of its present fenced farm products.

If I have seemed too personal or biased in any of my remarks, it is only with the purpose of seeing justice done, and to use another borrowed phrase, would say that "it is a mistake of the head rather than of the heart," and explained by the fact that I am admittedly biased to Idaho and wrapped up heart and soul in the splendid opportunities its natural resources afford, which I believe are susceptible of ultimately furnishing employment to hundreds of thousands of men and hundreds of millions of legitimately profitable capital investment, and an era of permanent prosperity and progress for all of its people.

Metal Production for 1914 by Counties.**ADA COUNTY.**

Gold, fine oz., 210	\$	4,340 70
Silver, fine oz., 157		86 05
Total value	\$	4,426 75

ADAMS COUNTY.

Gold, fine oz., 850	\$	17,569 00
Silver, fine oz., 1200		677 72
Copper, lbs., 35,000		4,725 00
Total value	\$	22,921.72

BINGHAM AND BONNEVILLE COUNTIES.

Gold, fine oz., 250	\$	5,167 50
Silver, fine oz., 180		98 66
Total value	\$	5,266 16

BLAINE COUNTY.

Gold, fine oz., 851	\$	17,600 17
Silver, fine oz., 93,989		51,515 37
Lead, lbs., 1,238,600		48,305 40
Zinc, lbs. 767,000		39,960 70
Total value	\$	157,381 64

BONNER COUNTY.

Gold, fine oz., 310	\$	6,407 70
Silver, fine oz., 12,000		6,777 20
Lead, lbs., 350,000		13,650 00
Total value	\$	26,834 90

CANYON COUNTY.

Gold, fine oz., 27	\$	558 09
Silver, fine oz., 8		4 38
Total value	\$	562 47

CLEARWATER COUNTY.

Gold, fine oz., 2,184	\$	45,103 28
Silver, fine oz., 1,270		696 10
Total value	\$	45,799 38

CUSTER COUNTY.

Gold, fine oz., 1,562	\$	32,286 54
Silver, fine oz., 50,945		27,922 95
Copper, lbs., 1,726,425		233,067 38
Lead, lbs. 377,000		14,703 00
Total value	\$	307,979 87

ELMORE COUNTY.

Gold, fine oz., 2,520	\$ 52,488 40
Silver, fine oz., 436	238 97
Total value	\$ 52,727 37

FREMONT COUNTY.

Gold, fine oz., 37	\$ 763 79
Silver, fine oz., 16,500	9,043 65
Lead, lbs., 3,700,000	144,300 00

Total value	\$ 154,107 44
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IDAHO COUNTY.

Gold, fine oz., 2,340	\$ 48,367 80
Silver, fine oz., 1,142	625 93
Copper, lbs., 40,000	5,400 00

Total value	\$ 54,393 73
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LEMHI COUNTY.

Gold, fine oz., 15,295	\$ 315,947 65
Silver, fine oz., 92,324	50,443 78
Lead, lbs., 3,010,000	117,390 00

Total value	\$ 483,781 43
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MINIDOKA COUNTY.

Gold, fine oz., 350	\$ 7,234 50
Silver, fine oz., 25	13 70

Total value	\$ 7,248 20
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NEZ PERCE COUNTY.

Gold, fine oz., 270	\$ 5,580 90
Silver, fine oz., 45	24 66

Total value	\$ 5,605 56
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OWYHEE COUNTY.

Gold, fine oz., 1,000	\$ 20,670 00
Silver, fine oz., 25,000	13,702 50

Total value	\$ 34,372 50
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POWER COUNTY.

Gold, fine oz., 60	\$ 1,240 20
Silver, fine oz., 12	6.78

Total value	\$ 1,246 98
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SHOSHONE COUNTY.

Gold, fine oz., 4,052	\$ 83,754 84
Silver, fine oz., 13,409,095	7,349,524 97
Lead, lbs., 338,607,000	13,205,673 00
Copper, lbs., 3,276,000	442,260 00
Zinc, lbs., 48,472,000	2,526,391 20

Total value	\$ 23,607,604 01
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TWIN FALLS COUNTY.

Gold, fine oz., 70	\$ 1,446 90
Silver, fine oz., 14	7 68
Total value	\$ 1,454 58

WASHINGTON COUNTY.

Gold, fine oz., 540	\$ 11,161 80
Silver, fine oz., 70	38 37
Total value	\$ 11,200 17

TOTAL FOR THE STATE.

Gold, fine oz., 62,238	\$ 1,286,459 46
Silver, fine oz., 13,621,123	7,412,378 77
Lead, lbs., 345,334,106	13,426,086 23
Zinc, lbs., 49,239,000	2,166,351 90
Copper, lbs., 5,178,000	685,430 00
Total gross value, 1914	\$ 24,976,706 36
Total gross value, 1913	24,572,396 47
Increase	\$ 404,309 89

The above statistics are not presumed to be accurate, but are based on close estimates and the best information obtainable at the close of the year, which are better appreciated by interested people than an accurate obituary written six to nine months later, and have generally cut reasonably close to government figures covering the same field, and issued the following fall, and to whose splendid detail work I am somewhat indebted in arriving at total values.

The year's current New York metal quotations have been used and the gross metal contents of the mineral shipped, for while a relatively small margin of the results come back to the producer as profits, the total metal contents of the ore except a small percentage of actual loss in smelting finds its way into the commerce of the country and its state of origin should be given credit for it.

Annual Metal Output of Idaho Since 1898.**TOTAL FOR THE STATE FOR THE YEAR 1898.**

Gold, fine oz., 91,698	\$ 1,895,566 00
Silver, fine oz., 5,256,700	3,654,020 00
Lead, lbs., 122,479,275	4,899,171 00
Total	\$ 10,448,757 00

TOTAL FOR THE STATE FOR THE YEAR 1899.

Gold, fine oz., 75,054	\$ 1,550,958 00
Silver, fine oz., 4,480,174	2,688,105 00
Lead, lbs., 86,449,506	3,760,553 00
Copper	60,000 00
Total	\$ 6,059,616 00

TOTAL FOR THE STATE FOR THE YEAR 1900.

By direct shipment:	
Gold, fine oz., 102,782	\$ 2,124,603 94
Silver, fine oz., 4,324,133	2,534,480 00
Lead, lbs., 96,425,500	3,857,020 00
Copper	35,000 00
	\$ 8,551,103 94
Through the U. S. assay office	1,699,760 22
Estimated from other sources	1,000,000 00
Total	\$ 11,250,864 16

TOTAL FOR THE STATE FOR THE YEAR 1901.

Gold, fine oz., 110,228	\$ 2,280,422 76
Silver, fine oz., 3,305,154	1,983,092 00
Lead, lbs., 65,967,000	2,638,680 00
Total	\$ 6,902,194 76

TOTAL FOR THE STATE FOR THE YEAR 1902.

Gold, fine oz., 119,363	\$ 2,467,233 21
Silver, fine oz., 5,259,778	3,655,866 80
Lead, lbs., 119,223,000	4,172,805 00
Total	\$ 10,295,905 00

TOTAL FOR THE STATE FOR THE YEAR 1903.

Gold, fine oz., 92,938.42	\$ 2,085,993 76
Silver, fine oz., 7,224,021.58	4,334,412 60
Lead, lbs., 220,857,956	9,386,213 13
Copper, lbs., 2,524,000	336,954 00

Total	\$ 16,143,573 49
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TOTAL FOR THE STATE FOR THE YEAR 1904.

Gold, fine oz., 84,461.89	\$ 1,845,282 08
Silver, fine oz., 8,284,639.12	4,970,783 40
Lead, lbs., 226,261,728	9,729,425 86
Copper, lbs., 5,422,007.05	704,860 91

Total	\$ 17,250,898 25
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TOTAL FOR THE STATE FOR THE YEAR 1905.

Gold, fine oz., 60,515.91	\$ 1,250,863 85
Silver, fine oz., 8,626,794.55	5,196,270 51
Lead, lbs., 260,791,456.00	12,257,198 43
Copper, lbs., 6,661,400.00	1,025,189 46
Zinc, lbs., 2,174,960.00	127,887 89

Total	\$ 19,876,409 89
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TOTAL FOR THE STATE FOR THE YEAR 1906.

Gold, fine oz., 58,762.32	\$ 1,214,617 15
Silver, fine oz., 9,136,860.73	6,071,443 96
Lead, lbs., 255,966,083.00	14,487,680 30
Copper, lbs., 11,640,565.00	2,252,449 32
Zinc, lbs., 1,477,000.00	91,426 30
Antimony, lbs., 90,000	20,700 00

Total	\$ 24,138,317 03
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TOTAL FOR THE STATE FOR THE YEAR 1907.

Gold, fine oz., 66,426.29	\$ 1,373,031	40
Silver, fine oz., 8,491,356.13	5,546,553	82
Lead, lbs., 234,404,920	12,470,341	74
Copper, lbs., 10,847,905	2,241,177	17
Zinc, lbs., 9,192,551	534,087	21
		\$ 22,165,191
Total	\$ 22,165,191	34

TOTAL FOR THE STATE FOR THE YEAR 1908.

Gold, fine oz., 68,145.16	\$ 1,409,992	97
Silver, fine oz., 7,660,507.38	4,047,811	63
Lead, lbs., 207,998,499	8,764,485	35
Copper, lbs., 10,110,506	1,336,608	89
Zinc, lbs., 64,000	3,020	80
		\$ 15,561,131
Total	\$ 15,561,131	64

TOTAL FOR THE STATE FOR THE YEAR 1909.

Gold, fine oz., 70,898,938	\$ 1,465,481	05
Silver, fine oz., 7,039,451.20	3,625,317	40
Lead, lbs., 217,594,679	9,356,571	20
Copper, lbs., 7,759,886.0	1,034,651	50
Zinc, lbs., 1,906,200.0	104,841	00
		\$ 15,606,862
Total	\$ 15,606,862	00

TOTAL FOR THE STATE FOR THE YEAR 1910.

Gold, fine oz., 49,289.22	\$ 1,018,808	20
Silver, fine oz., 7,890,388	4,268,813	00
Lead, lbs., 239,144,570.00	10,761,057	70
Copper, lbs., 5,837,639.00	753,055	40
Zinc, lbs., 5,995,600.00	333,513	60
		\$ 17,135,695
Total	\$ 17,135,695	90

TOTAL FOR THE STATE FOR THE YEAR 1911.

Gold, fine oz., 66,927.11	\$ 1,375,068	22
Silver, fine oz., 8,592,400.00	4,579,621	15
Lead, lbs., 274,492,873	12,225,912	56
Copper, lbs., 3,962,060	502,488	67
Zinc, lbs., 10,087,600	386,593	94
		\$ 19,270,212
Total	\$ 19,270,212	00

TOTAL FOR THE STATE FOR THE YEAR 1912.

Gold, fine oz., 69,300.10	\$ 1,432,434	00
Silver, fine oz., 8,238,971	5,011,766	00
Lead, lbs., 296,054,813	13,233,650	00
Copper, lbs., 7,392,280	1,224,161	00
Zinc, lbs., 16,243,840	1,127,316	00
		\$ 22,029,327
Total	\$ 22,029,327	00

TOTAL FOR THE STATE FOR THE YEAR 1913.

Gold, fine oz., 67,792	\$ 1,450,531	50
Silver, fine oz., 10,163,205	6,044,925	11
Lead, lbs., 318,377,280	13,907,447	04
Copper, lbs., 8,627,242	1,316,509	20
Zinc, lbs., 30,271,323	1,707,352.62	
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Total	\$ 24,572,396	47

TOTAL FOR THE STATE FOR THE YEAR 1914.

Gold, fine oz., 62,238	\$ 1,286,459	46
Silver, fine oz., 13,621,123	7,412,378	77
Lead, lbs., 345,334,106	13,426,086	23
Zinc, lbs., 49,239,000	2,166,351	90
Copper, lbs., 5,178,000	685,430	00
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Total gross value, 1914	\$ 24,976,706	36
Total gross value, 1913	24,572,396	47

Increase	404,309	89
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Total output all metals for the past 17 years, since state records were kept	\$283,684,057	36
Total Idaho output for preceding 37 years (estimated)	342,000,000	00

Grand total for 54 years	\$625,684,057	36
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