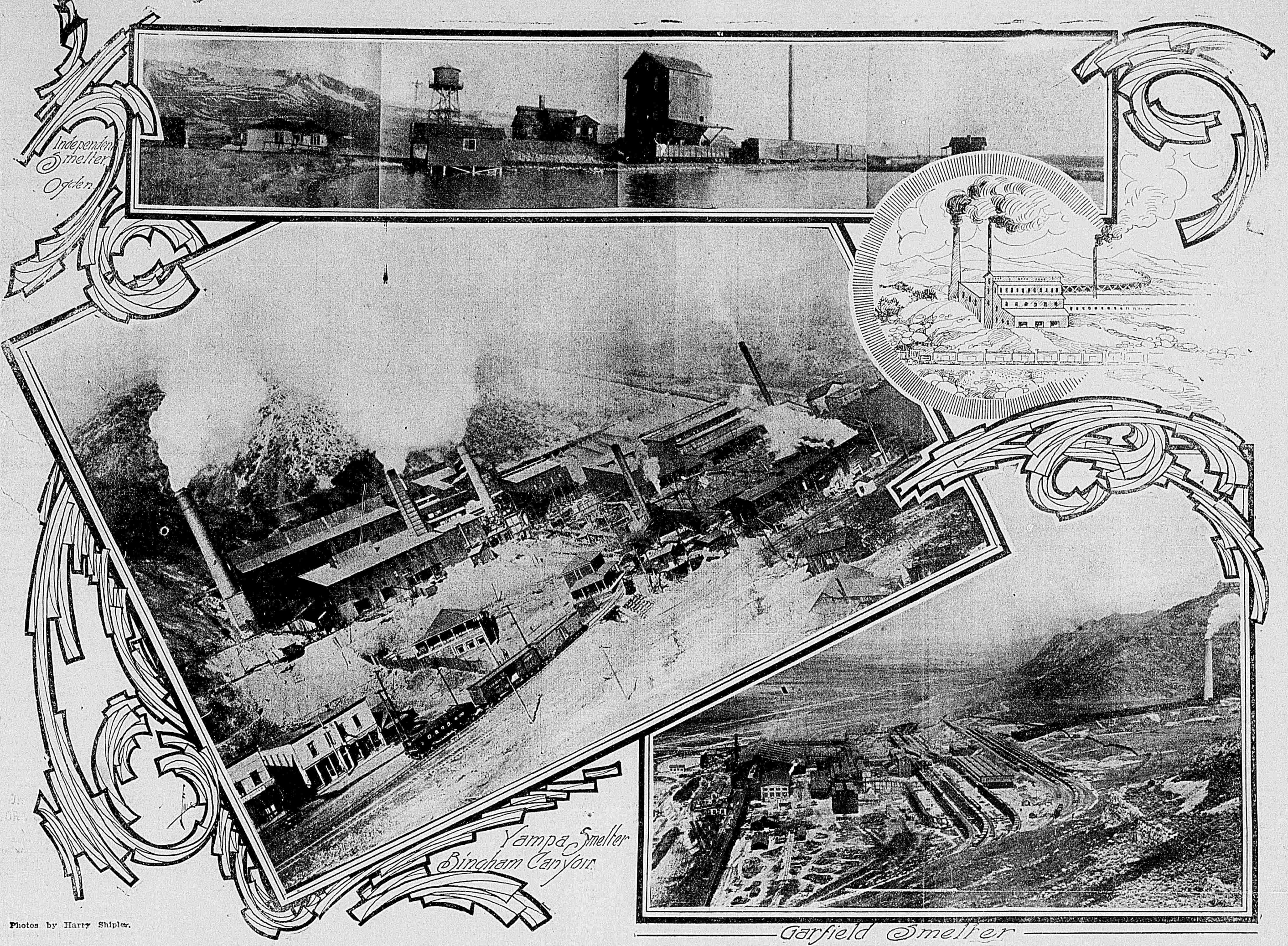


Future for Utah Mines Never Looked Brighter



Photos by Harry Shipley.

ONE year ago today, the outlook for mining in Utah was not altogether rosy. The country was then in the throes of a financial panic and all branches of industry were temporarily crippled. Naturally, the metal market was affected by these conditions, and there is where the miner and the producer of ore were brought to feel the "stringency." Matters were made worse in this state by a decree of injunction issued from the federal court closing down practically every smelting plant in the Salt Lake valley; being the outcome of the trial of the so-called smelter smoke cases, which had been pending in the courts for a number of years. Thus, to a large extent, a market for the products of the mines was cut off, although for a time there was little inducement to enter it with the products of the mines because of the low metal prices which came as one of the fruits of the slowing down of the wheels of industry. But fortunately, no one lost heart. Those who were strong enough to do so, continued the development of their mines, firmly believing that the conditions then existing were not final and that it would only be a matter of a short while until things righted themselves again. Subsequent developments have demonstrated that they took the right view of the situation. Conditions might have been much different.

A factor which played an important part in the rapid return of confidence is found in the fact that large enterprises, after the expenditure of millions of dollars in preparation, were just blossoming into maturity when the dark clouds of depression seemed the thickest. For illustration, the Utah Copper company is mentioned. This great corporation was just getting ready to conduct its operations upon a gigantic scale; the mining of its affairs had confidence in the future and instead of sitting idly by and waiting the return of better times, they gave orders to put more men on the pay rolls; hence, hundreds who had been bereft of employment elsewhere were given work. The copper smelter of the American Smelting & Refining company at Garfield, situated safely without the prohibited smoke zone of the Salt Lake valley, was also setting under a fair head of steam and although the latter were severely criticized by producers of ore for having taken undue advantage of them in the raising of smelting charges—and there were excellent grounds for complaint—yet it must be admitted that the American company did its share towards the early return of confidence. Better conditions came more quickly than many had anticipated; while now, on the eve of the dawn of the new year of 1909, can be seen ahead the light of prosperity shining forth with more brilliancy than ever. Confidence has been fully restored; the mines are outputting more tonnage in the shape of copper ore than ever before—this being particularly applicable to Bingham. The production of gold, silver and lead has probably not been as great during 1908, as in previous years; but this is accounted for by the disturbances enumerated in the foregoing. For like

reasons, the volume of dividends has not been so great; yet a number of Utah mining companies have done handsomely by their shareholders. Two new names have been added to the dividend list—Utah Copper of Bingham and the Sioux Consolidated in the Tintic district. But the prospects for greater profits during the coming year could not be more inviting.

"UNCLE" JESSE'S PART.

It would be unjust to "Uncle" Jesse Knight, commonly referred to as the "Wizard of Tintic," to omit in this story mention of the good things he has accomplished in the promotion of the general welfare of the mining industry of the state. First of all, when the Salt Lake valley smelters were closed, and the avenues of competition closed to the producer of ore, Mr. Knight set out to build a smelter of his own with the view of making his own mines entirely independent, as far as smelting facilities were concerned. He received encouragement from other producers, who had complained of the treatment accorded them elsewhere, so Mr. Knight decided to make the plant larger than was first intended and to engage in the custom smelting business. Accordingly, plans were laid along these lines and something like \$200,000 has been expended in carrying them out. The Tintic Smelting company was formed and a smelter erected near Silver City, in the Tintic district, within convenient reach of all the principal mines of the district; but rendered more accessible by the construction of the Eureka Hill railway, also a Knight enterprise. The smelter was recently placed in commission and while the usual hindrances encountered by most new plants when starting were experienced, it is now giving good satisfaction. Only the lead furnaces are in operation, but it is expected that the treatment of copper ores will begin soon after the first of the year. Not only has Mr. Knight built this smelter, which is quite an undertaking of itself, but in addition to this he has managed to keep a vigorous campaign of development going on continuously the various mining properties with which he is identified. He is a mine maker and his success in that respect has been regarded by some as being simply marvellous. While Mr. Knight's operations have been centered mainly in the Tintic district, he has also been reaching out into new fields. His money is now being applied towards the development of several attractive properties situated in Park City, Alta, and American Fork districts, as well as in Beaver and Millard counties.

NEW SMELTER ASSURED.

Among the most gratifying announcements of the year was that which came recently from the executive offices of the Utah Consolidated Mining company, in New York, to the effect that another large custom smelter would be erected in Tooele county during the coming year. This plant will be a formidable competitor of the American Smelting & Refining and United States Smelting, Refining & Mining companies and will be provided to treat both lead and copper ores. While the Utah Consolidated is not directly interested in this enterprise, it will be indirectly and become a potent factor in the direction of the affairs of the company formed to operate the smelter.

ORES GOING TO GARFIELD.

When it became manifest to the

management of the Utah Consolidated that the farmers of the Salt Lake valley would win out in their contention that their premises were being damaged by fumes, steps were taken to obtain a site for a new smelter in Tooele county. Accordingly, a large area of land was purchased, options and smoke easements obtained upon a still larger area, together with valuable water rights, etc. Thus the company became prepared for the worst. Following the closing of the Murray smelter, the management succeeded in obtaining a contract to ship 800 tons of ore daily to the Garfield smelter, with a clause giving the privilege of renewal for another year provided notice to that effect was served within six months after the beginning of the first year's contract, which was done. An effort was then made to secure a five-year contract with the Garfield smelter, but the Garfield Smelting company, but upon terms more favorable to Utah Consolidated stockholders. The Guggenheims, however, refused to do this; whereupon the Utah Consolidated directors took up the matter of building its own plant. The Guggenheims, it is said, employed tactics to prevent this, even going so far as to try and buy a majority of the stock, in which move they failed. Not long ago, the land purchased for a smelter site, together with the options, etc., were transferred to W. D. Thornton of Butte, who contracted with the Utah Consolidated to provide facilities therefor and treat the ores of the Utah Consolidated mine for a period of 10 years, commencing in April, 1910, the details of which are set forth in the following communication recently sent out to Utah Consolidated shareholders by President Broughton, which says:

"During the eight years I have presided over the affairs of your company I have addressed you but once, except through the medium of an annual report. In September, 1907, I denied certain statements that were being industriously circulated in the public press, which statements have since been proved to be unfounded.

CLOSING OF SMELTER.

"I now desire to give you information upon a matter of importance to your company. In January of this year our company's smelting plant in Salt Lake valley was closed by order of court, after the case had been carried to the court of last resort. Your company was then confronted with the proposition of building a new smelting plant in another location which meant the cessation of production for about a year and a half, or the alternative of entering into a contract for the smelting of its ores with the Garfield Smelting company. In February of this year a contract was made with the Garfield Smelting company for a period of one year. This contract was the best that could be made under the circumstances; by its provisions your company had the option, in six months' time, of extending the contract for a second year, and the right of discussing the question of a certain modification, and the making of a contract for a period of five years.

NEW PROBLEMS PRESENTED.

"In July your company exercised its option to extend the contract for a second year, and informed the Garfield Smelting company that it was prepared to take up the other question. The

Garfield Smelting company notified your company could not agree to, for these questions for 90 days, which your company could of agree to, for the reason that certain options upon land adjoining the smelter site owned by your company expired Oct. 1. Your company, however, agreed to a postponement until Sept. 14 upon the condition that its contract should run for 18 months from that date. On Sept. 23, the Garfield Smelting company notified your company that it could not change any conditions of the existing contract, but would make a contract for five years, but not on any more favorable terms to your company. Your company immediately, as a protection, exercised its options on the lands adjoining its new smelter site.

"Your company has now entered into a contract with W. D. Thornton of Butte for the smelting of its ores for a period of 10 years, commencing April, 1910, the proper performance of which contract is guaranteed by four persons acceptable to your board of directors. Under the provision of this contract Mr. Thornton agrees:

"1. To erect a smelting plant in Tooele county, Utah, to be in operation by April, 1910, and treat the output of your company's mines up to 1,200 tons per day, at a rate which is 67.50 cents per ton more favorable to your company than the contract now existing with the Garfield Smelting company.

"2. To acquire from your company, at cost, all the lands and options it has acquired in Tooele county.

"3. To give your company an option upon any part of \$500,000 par value of the capital stock of the company to be furnished to operate the new smelter, upon as favorable terms as may be extended to any other taker or subscriber to stock.

"The cost to your company of transporting ore to the Tooele smelter will not exceed 15 cents per ton.

"All figures in connection with the existing contract and that entered into with Mr. Thornton have been approved by E. P. Mathewson of Anaconda, your company's consulting engineer.

"Upon the basis of your company's present output of ore, 800 tons per day, the contract entered into with Mr. Thornton will result in a saving to your company, as compared with the contract now in existence, of over \$200,000 per annum, or \$1 per share upon the capital stock of your company."

SOME CHIEF EVENTS.

The construction and placing into commission of the Tintic smelter, the formation of the Independent Smelting company and the purchase by it of the smelter near Ogden; the starting of the great concentrating mills at Garfield owned by the Utah Copper and Boston Consolidated companies, which have a combined capacity for the treatment of 9,000 tons of ore from Bingham per day and the announcement of the plans to build a smelter on the Utah Consolidated mine in Tooele county were among the chief events of the year affecting the welfare of the mining industry of Utah. None the less important, however, was the metallurgical triumph of the United States Smelting, Refining & Mining company, in solving the problem of smoke conservation at its smelter located at Bingham Junction. The United States company spent a fortune for experimental purposes

and it was while in the progress of these experiments that a successful method for the elimination of fumes was discovered. The operation of the process is kept as far as possible; but the company has its rights preserved by patents in this, as well as in foreign countries. When it was positively determined that fumes which play havoc when coming in contact with vegetation can be so neutralized that the operation of the company's smelter at Bingham Junction would not endanger growing crops or livestock in the slightest degree whatsoever, the court was appealed to for a modified decree permitting the operation of the lead section of the plant, which was granted. The furnaces have been in commission since last September and, according to authentic information, the operation of the process referred to has more than come up to expectations. An average of 800 tons of ore a day is being smelted and it is difficult to discern at any time as much smoke issuing from the top of the 250-foot stack as from an ordinary house chimney. The most of the time, a thin white vapor is visible, but to view the plant from a distance it bears every evidence of being idle.

The bag house is similar to bag houses in use at other plants, the present one contains 3,200 bags and an addition is being built to make room for 1,200 more. Since the 16th of last July, the date when the smelters started, after a six-months' shut down, not a single bag has been replaced. These bags are 24 feet in length and made of woollen cloth. There is not the slightest doubt that the United States smelting company is further ahead in the handling of its gases and fumes than any other smelting concern in the world.

SECRET PROCESS DOES IT.

By its newly developed and patented process for the neutralization of the acids in the fumes it has made a big step forward in being able to bag-house its roasters and arsenic, as well as its blast furnace fumes. It is the general understanding that while there are many baghouses in operation in filtering blast furnace fumes, no plant to date but that of the United States company has been able to filter through the bag house the hot and acid fumes emanating with the roasting of heavy sulphide ores. In accomplishing this result the combined efforts of the staff of the United States company have been continuously expended in the experiments that have been secretly going on for this period, the results seem fully to have justified the expenditure of both time and money. Not only will the baghousing of these gases result in savings of lead and silver that otherwise by volatilization would escape in the atmosphere, but it solves for the United States company the vital question of damage to vegetation in Salt Lake valley. The smelters near Salt Lake City are located in the midst of a rich agricultural district, and while it has been claimed that great damage has occurred thereby to vegetation, the extent of which is very much in question, still the system adopted by the United States company in the absolute and unquestionable control of all deleterious matter in the fumes and gases, seems certain to relieve that company of the expense

of litigation with ruralists in the future.

The experiments with the gases were conducted in September and the success that has attended its experiments seem to have justified the United States company in the construction of expensive improvements at the plant, for instance the erection of the addition to the baghouse, which will mean 62 per cent added capacity; also the construction of a plant for handling the baghouse dust. This is commonly termed an arsenic plant, and means the roasting of all the baghouse product by means of a Brunton furnace and catching the arsenic in an elaborate flue system, with additional flues for refining and manufacturing the commercial product of white arsenic.

STANDARD ESTABLISHED.

The standard adopted by the United States company bids likely to be the standard that all lead plants will have to come to. The claims for damages to vegetation in Salt Lake valley have amounted to over a half million dollars during the past four years and while this sum is undoubtedly a gross exaggeration of the actual damage sustained or the value of the crops, nevertheless the resulting litigation has been expensive to the smelters as also to the farmers and the relief that comes with the news that the United States smelting company's operations in future will be absolutely free of damage to vegetation is a source of congratulation to both interests.

SIX BLAST FURNACES.

In the lead plant of the company where six blast furnaces and 23 roasters also regular furnaces are in constant operation, all the solids and liquids are removed from the fumes so that comparatively no smoke is visible from the stack. The neutralization of the acids is by process which includes the driving of zinc oxide from secretly mixed ores into the fumes by specially adopted furnaces and the chemical feeding of the manufactured zinc oxide as a finishing neutralization. The entire process has been covered by patents held by the United States Smelting, Refining & Mining company.

The zinc oxide used is made on the spot and this explains why the company is drawing the low grade lead zinc ores from its Bingham mines and concentrating it in the mill built a short distance south of the smelter several years ago. This plant has capacity to treat 400 tons of ore daily, resulting in 225 tons of concentrate. For the purpose of making the saving work perfect, 11 additional tables are being installed. Eight Wilfleys and three Sherman slimmers.

COPPER PLANT, TOO.

There is a likelihood of the copper smelting department of the United States plant being utilized again; for the company's metallurgists declare that it is just as easy to cope with the fumes arising from copper ores while undergoing treatment as it is to neutralize the gases coming from lead ores. It is quite probable that the court will be sought again to modify the decree which enjoined the company from operating its copper furnaces.

The old Bingham Consolidated and Utah Consolidated copper smelters, reduced to idleness through adverse de-

PROPOSED SMELTRY.

An independent smelting enterprise, in which a number of persons high up in the mining world have figured, has been in course of incubation for several months. Whether the scheme will materialize or not remains to be seen; but there has been some talk of establishing a smelter at a convenient point somewhere along the Salt Lake Route, preferably at Leamington, in Millard county. Among those mentioned as having something to do with the undertaking are David Keith, Senator W. A. Clark, Thomas Kearns and others. The powers directing the affairs of the Western Utah Copper company have discussed the proposition of building a small matting plant for the treatment of the ores of the Gold Hill mine at Gold Hill in the Deep Creek district, but as yet no definite decision has been arrived at. The late important developments in the mines of the Pioche, Nev., district has impressed upon the operators of that district that one of the great needs of their camp is better mill and smelting facilities and while new plans are also being discussed, there is also some talk of extending the Callard & Pioche branch of the Salt Lake Route to Ely, in which event Pioche mines would find a market for ore in both Ely and Salt Lake.

WHERE BULK COMES FROM.

While Bingham, Tintic and Park City have produced a large bulk of the mineral wealth wrested from the mines of the state during the year, a great deal of effective work has been done elsewhere. At Mercur, for instance, the Consolidated Mercur Gold Mines company has been conducting a very vigorous development campaign in the Brickyard and Golden Gate mines—both owned by this company—and with highly gratifying results. The management claims that the physical condition of the Con. Mercur properties is better than it has been in many a day and that the prospects of the company are getting back on a dividend basis again are exceedingly bright. In the Consolidated Mercur mill an average of 800 tons of ore per day is treated from which is being realized approximately \$50,000 monthly. A consolidation of several well known properties on Lion Hill in the Mercur district was effected recently and among the participants in the coalition are the Chloride Point, Northern Light and other mines. The Boston-Sunshine Gold Mining company was organized several months ago with the Sunshine mine at Sunshine as the basis. While little was done with this proposition this year, steps have been taken to place it on the active list in the near future. The mine is equipped with a mill in which has been installed equipment similar to that in the plant at the Consolidated Mercur mines.

IN MISCELLANEOUS CAMPS.

In the Ophir canyon region the Ophir Hill, owned by Senator W. A. Clark of Montana, has been active almost continuously throughout the year; while the Cliff Mining company, operating the old Buckhorn mine, has been a regular shipper for some

(Continued on page twenty.)