

F. LELAND ELAM\* reports

# Relief Hill Hydraulic Pit Replaces Townsite

TEN years ago Western Gold, Inc., took over the Relief Hill hydraulic mine and slowly developed it. Now that debris from the mine can be dumped behind the Yuba Narrows debris dam near Smartville, the mine is being operated as one of the larger pits behind the dam.

Today, the firm has two monitors washing an 87-foot bank of gravel that extends in width for about 1,000 feet. Twenty-one men work three shifts every day to keep the two modern type monitors cutting into the bank.

The mine is located but a short distance from North Bloomfield in Nevada County, and in the early days of California mining a town of 1,200 persons stood on the site now being washed away. It was the town of Relief Hill from which the mine was named. These people are said to have taken out much gold, but it was all mined by tunnels and shafts. Washing operations are continually uncovering the gold workings. Later some hydraulicking was done but on a small scale. Two small pits were on the property when Western Gold, Inc., took it over in 1931.

Water is brought to the two No. 51 Joshua Hendy monitors by a 21-mile ditch owned by the firm. The flow is from Poormans Creek near Graniteville. It comes to a pipe reservoir near the mine and is then taken to the pit by a 22-inch pipe. This pipe tapers to a 15-inch pipe leading to each monitor. From 200 to 300 feet of the smaller pipe are used between the monitors and the 22-inch pipe. There are 2,800 feet of the big pipe carrying the water into the pit.

Each day 1,300 miners inches of water, under 270-foot pressure, are delivered. Six and seven-inch nozzles play the water to the gravel banks. Plans are now underway for a storage system that will provide enough water to work the monitors for eight to nine months each year.

This year, because there is a storage dam for the tailings, the mine is putting out as much in 8 hours as it used to in 36 hours. The Relief Hill has been worked five of the 10 years Western Gold has owned it, but only on a small scale as it was necessary to hold the tailings in a creek below the mine.

Between 3,500 and 4,000 cubic yards of gravel are washed down from the mountain and sent through the sluices each day. The sluice is 1,800 feet in length with 388 feet in an outlet tunnel. It is four feet wide and is equipped with 40-pound T-rail for riffles.

THE gravel bank at the mine is easy to wash for there is very little of the cemented type of material which requires a lot of blasting. The major portion of the necessary blasting is the "bulldozing" of

\*Sacramento, California

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The debris storage dam on the Yuba River, near Smartville, has made possible the expansion of hydraulic mining at the Relief Hill mine of Western Gold, Inc. A mining town of 1,200 persons once stood on the site now being washed away.

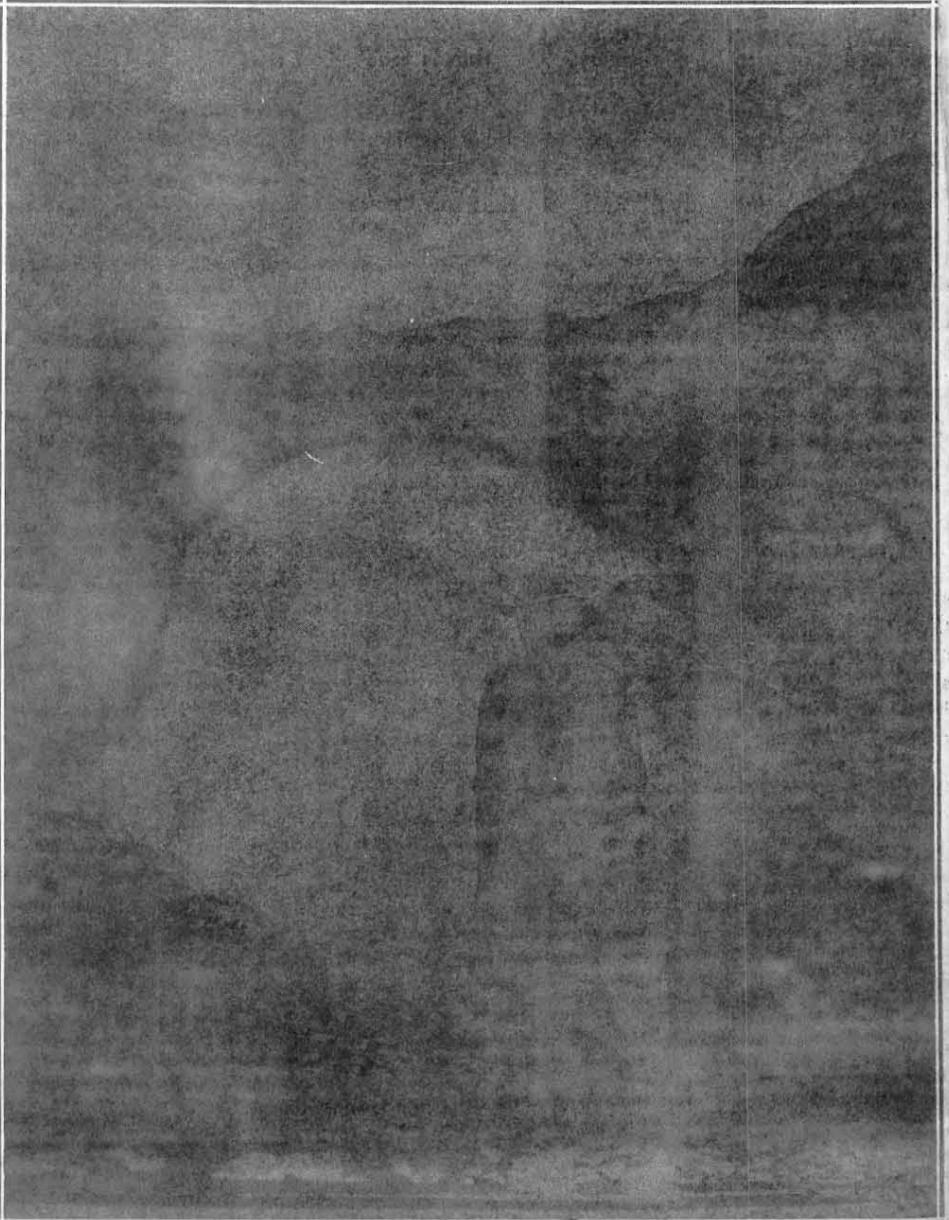
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big rocks which the monitors cannot send down the sluices. These are broken up with 40 per cent dynamite put on with a mud

cap. There also are some beds of pipe clay which must be broken loose with a stick of dynamite and here again 40 per cent gelatin is used. In this case a hole is drilled straight into the bed and the dynamite is placed deep in it. At present, blasting operations are being carried on along the two side walls of the deep ditch through which the sluice is arranged. This work is in preparation for giving more drop to the sluice for a faster run off of the water.

In addition, the Relief Hill is using a D-4 Caterpillar equipped with a bulldozer to

(Continued on page 36)



C. E. Clark, superintendent of the Relief Hill hydraulic mine, operates one of the seven-inch monitors used by his company. The gravel wall is 87 feet high and is being washed over a width of 1,000 feet. From 3,500 to 4,000 yards of gravel are sent through the sluices each day.

Mining Journal 1941

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GOVERNOR RALPH L. CARR\* speaks in defense of

# State's Rights and Control of Natural Resources

**T**O THE people of the East and the Middle West, where annual floods constitute a menace and a threat, the control of floods and the development of cheap power may seem to be the most important interest involving rivers. It is difficult for them to realize that with us "thunder is sacred, and water is a god." But the rest of the nation will be interested in learning that another bill has been introduced into the Congress which divides the whole country into nine regional river basins, which will place the people, their lives and their future under the control of such a super-state.

Under the recent new river decision by the United States Supreme Court, a subject of interstate commerce and navigation becomes comparatively unimportant. The real cause for concern involves the philosophy underlying the proposed act.

The difficulty with regional authorities appointed by the President and which are in no sense responsible to the Congress or to the states, is that they result in the establishment of an operative, active, super-state which is neither federal nor state-like in nature and which has power to accomplish things which the President, himself, under the constitution probably could not do. The new kind of government will supersede and supplant the quasi-sovereign states of the Union in the exercise of control over local functions and problems. It may modify existing rights in property with powers which even the federal government does not claim.

The creature has not only become greater than its creator but has, in turn, evolved a third agency which supplants the original creator.

If we are to control the lives, the property and the rights of American citizens by a new kind of government then the people should have some voice in determining whether that innovation is to be attempted.

The peculiar civilization of the semi-arid West which supports millions of people is the result of the very conditions there existing. Such a civilization is not to be modified or erased through the unchecked operations of a three-man board.

To no man or group of men has been given the talent to go into the semi-arid sections of the West and with only two main objectives—flood control and the development of hydroelectric power — to change the manner of life of all our people and render it necessary for them to modify their activities, their plans and their thinking so as to become subservient to an artificial authority set up without regard to geography, to climate, to history, to

A measure recently introduced in Congress is intended to place the drainage basins of the Arkansas, the St. Francis, the Red and White rivers under regional authority by a law drafted along the lines of the Tennessee Valley Authority. Governor Carr cited this proposal as an example of federal encroachment upon the rights of states and private individuals. It is his belief that the power to control the water of any country, be it desert, flood-ridden, or navigable, carries the power to control the lives of the people of that country, their property rights and their future.

property rights, or to the ideals of the individuals affected.

No statute or departmental rule or regulation has yet been written whose enforcement will level the mountains, bring rainfall to the semi-arid states, temper the heat of the southland, or warm the Canadian border in mid-winter.

In a country as large as ours, with its extremes of climate, of altitude, of rainfall, of scattered and diversified natural resources, no political system has as yet been devised for making the forces of nature harmonize with a partisan scheme of things not based on natural factors and no amount of arm waving or body weaving on the part of national baton wielders can make them do it.

We must cling always to our federal union, which is designed to protect and foster our national institutions and interests, but at the same time we must recognize the need for local regulation and administration. And to the same extent that the national government is not qualified to solve all of the local problems of all sections of the country, to just that same extent is it unable to establish regional authorities which would supplant and supersede state governments, and measure all of the needs, all of the hopes, and all of the rights of their people by a common yardstick.

But the establishment of regional authorities over river drainages is not the only evidence of federal encroachment upon the rights of states or private individuals.

**T**HE mining industry finds itself in a peculiar position. People engaged in it are told on the one hand to speed up production to meet the national defense needs; while on the other, numerous and sundry departments of government are devising various methods for retarding production. Those engaged in mining are so confused

that the average mining operator does not know what new interpretation of some recently enacted legislation will bring down upon his luckless head a vast army of government officials, investigators, and even court orders.

An enlightening example of the confusion which exists can be cited by referring to the Fair Labor Standards Act and its application to the mining industry. One of the larger California companies questioned the right of the National Labor Relations Board to interfere with its operations. It brought a test case. The circuit court of appeals decided that mining was intrastate in this instance, and the labor board had no jurisdiction.

Not only was this company affected by this interpretation, but numerous other operations were similarly affected and confused. May we ask just where the board's jurisdiction starts.

One agency of government proposes to conserve our metals and to buy these metals outside of our borders. Producers of these metals point out that no man can foretell what metals will be in demand 10 years from now. Only a few years ago molybdenum was not used in large quantities by the steel industry. Today vast quantities of this metal are being mined successfully in Colorado and elsewhere in the West to meet the demands of the steel manufacturers. Vanadium ores exist in such large quantities in western Colorado and eastern Utah that the national demand for this metal is being met quite successfully by the producers.

We wonder how producers in the area of lead and zinc can continue to operate with one agency of the government fixing the price and another agency of the government increasing costs of production. It requires a genius to figure how a miner can be required to meet a national defense need and lose money in the operation.

**T**HE future of mining is being jeopardized by the existing public land policies. Only those who have lived in the West can appreciate the need for new mining camps and new mining operations. We understood through the columns of the press that the mining industry was to receive government loans. How many men in this area have been able to get these loans? In Colorado over 600 inquiries and applications were made for loans and only six were granted. The terms of these were not satisfactory to the borrowers.

Great areas have been withdrawn from mineral entry. Every conceivable excuse has been used to make it impossible for the prospector to go on government land and find new mineral wealth. A recent speaker at a mining convention pointed out "that it was high time that a reservation was being created for prospectors." The efforts of the Northwest to defeat the con-

\*Governor of Colorado. Abstracted from an address delivered in Butte, Montana, before civic and business leaders of that community.

tinuation of this policy have been most commendable.

Government regulation of the mining industry is not conducive to higher production. Mining men cannot spend the greater part of their time with governmental inspectors and still be on the job operating their mines efficiently. The mining industry met the requirements of the nation during the last war; the mining industry will meet the requirements of the nation if given a free hand to meet the needs of the people. The hazards of nature are not equal to the hazards of governmental interpretations, especially by highly paid young governmental officials.

Mining needs encouragement; it needs the protection of the fundamental mining law of the West, and it cannot survive the destruction of states' rights. Mining lawyers know the full meaning of the "fundamental mining law." Western courts have given interpretations and legal precedents have been established which cannot be tossed out of the window over night by newly created governmental agencies.

Let us hope for the day when mining will be restored to its position of freedom—freedom of operation, freedom of accomplishment, and freedom to raise new capital which it so badly needs for its future development.

When problems arise which overlap state lines and involve the interests of the people of two or more states, there is no need to ask Washington for a board or a bureau to handle the problem. Under their inherent rights as quasi-sovereignities, the states with a better knowledge and understanding of local conditions, by cooperation and coordination, can meet the problem more intelligently, more sympathetically, and with better results.

The answer to the demand for the appointment of every regional authority then is found in the fact that the states of the region in which the authority proposes to operate can, by coordination and cooperation, reach a just and equitable solution. The federal government has plenty to do in taking care of national difficulties. Until it can show a little better record than we have now, it has no right to invade the province of the states.

Forty years ago, when the reclamation service came into being, there was a national policy which sought to encourage the development of the West. The national policy now is to cut down the production of American farms.

Few persons object to the development of a good neighbor policy. Every man recognizes that in order to sell our products we must be in a position to purchase from our neighbor nations. But no reason has been presented for making it impossible for American farmers to farm and to live and to develop in order to buy the favor of any foreign nation.

Our system of government is gradually being changed without the consent of the governed. Our written constitution is being made inoperative by the enactment of statutes which do not take that constitution into consideration. What cannot be

done directly is being accomplished by indirection.

If the states actually reserved any powers; if labor conditions are to be regulated locally; if we are to retain our constitutional theory of government — then the time has come to say so. The issue faces us. Our only request is that we be permitted as states, as citizens, as Americans to participate in returning the answer.

#### UNIVERSITY OF ARIZONA TO HAVE MINE SURVEYING COURSE

ACCORDING to Dean Thomas G. Chapman, the University of Arizona at Tucson will institute a new course in mine surveying which will require actual work at a mine for three weeks prior to opening of the fall term. About 25 senior and graduate students will be enrolled in the new course.

Ten hours a day of mine surveying and mapping will be required. Students will obtain experience in laying out mining claims, practice in the survey of drifts, raises, and stopes, and practice in shaft plumbing. A \$15 fee is required of all students, who also will provide their own room and board during the period.

It is understood that the mining camp will be at Bisbee, Ajo, or at the site of some large mining project in Arizona. Emil J. Nylund, associate professor of mining engineering, will be in charge of the field course.

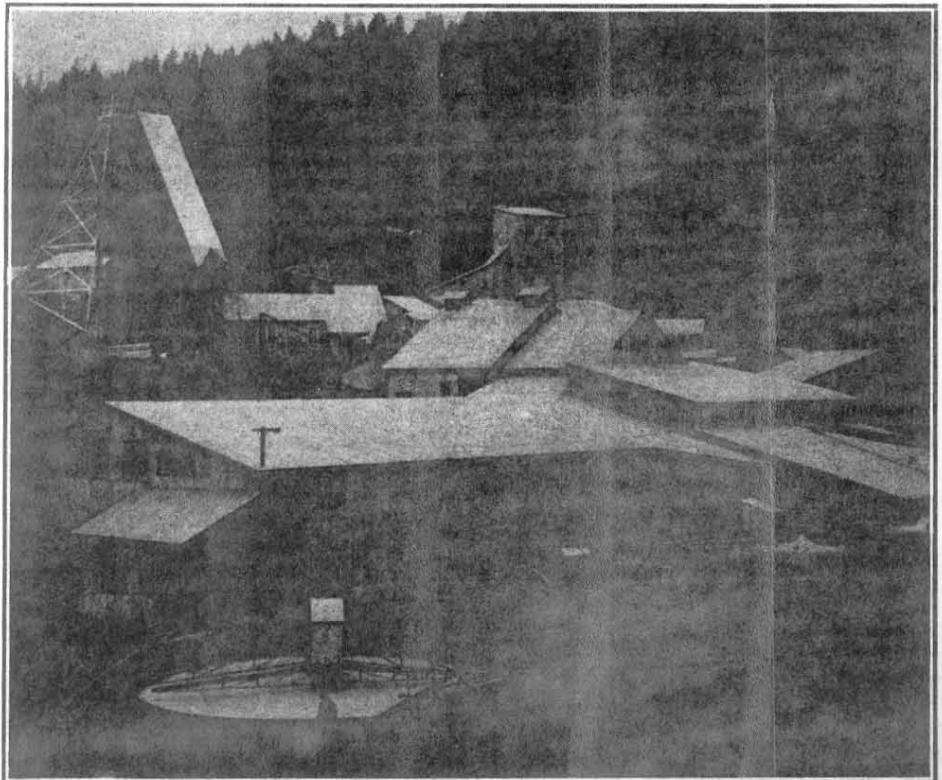
#### GOOD RECOVERY OBTAINED IN LAVA CAP CYANIDE PLANT

ACCORDING to Otto E. Schiffner, vice-president and general manager of Lava Cap Gold Mining Corporation, Nevada City, California, recovery in the new cyanide plant is running 95 to 96 per cent on gold and 98 per cent on silver.

The plant, located at the Central mine of the Lava Cap group, is considered one of the most modern cyanide plants in California, and was designed and built under the supervision of Schiffner and Bert Hardin, mine chemist. Twenty-eight steel tanks range from 50 feet in diameter and 16 feet deep to 14 feet in diameter and 8 feet deep. The unit has a capacity to handle 25 tons of mill concentrates daily and is thought to be capable of operating on a large tonnage basis. Until the plant definitely proves its ability to handle concentrates, it is being operated on tailings and flotation middlings. Mill concentrates are being sent to the smelter at Selby.

Diamond drilling continues from the sixth level of the Central shaft, but so far has not revealed any heretofore unknown ore bodies. Lava Cap employs a crew of around 383 men at its properties.

Although the company continues to mill 400 tons of ore daily, some of the tonnage has been from lower grade rock, cutting down the average in values, and, as a result, it was voted to pass up the regular dividend due June 30.



The new cyanide plant at the property of Lava Cap Gold Mining Corporation, Nevada City, California. Completed and placed in operation in October 1940, the plant is operating on tailings and flotation middlings. Mill concentrates are being sent to the smelter at Selby until it is proved definitely that they can be handled in the cyanide unit. Considered one of the most modern cyanide plants in the state, the Lava Cap unit consists of 28 steel tanks ranging from 50 feet in diameter and 16 feet deep to 14 feet in diameter and 8 feet deep, and is located at the Central mine of the Lava Cap group. It will handle 25 tons of mill concentrates daily and is thought to be capable of operating on a larger tonnage basis.

Mining Journal 1941

### OREGON STATE DEPARTMENT TO INVESTIGATE TIN DEPOSITS

THE negative findings of the United States Geological Survey as to the importance of tin in the Squaw Butte area near Burns, Oregon, were questioned by Earl K. Nixon, director of the Oregon State Department of Geology and Mineral Industries, who is making plans for further investigation.

"I regard as premature and possibly even misleading, the statement attributed to Dr. Mendenhall, director of the survey, that the material in dispute 'contained no significant amount of tin,'" said Nixon. "So far as we are aware, nothing like an adequate amount of either field or laboratory investigation has been done by either the geological survey or any other agency to justify the conclusion quoted above," he said.

Evidence so far gathered definitely suggests the presence of a fundamental problem in physical chemistry that is unsolved as yet, according to Nixon. "If such is the case, and the ultimate findings are at variance with the conclusion of the survey, the effect of a possible favorable result would be not only startling from a scientific viewpoint, but of the utmost strategic importance to the United States. This consideration alone, in the present national defense emergency, with our absolute dependence upon foreign sources for our tin supply, should compel the most serious consideration of this problem."

In the belief that further field and laboratory investigation is justified, the State Department of Geology and Mineral Industries, working jointly with the Department of Chemical Engineering of Oregon State College, is completing plans for a detailed research program in the tin problem.

Financing for this investigation is being supplied by the private group principally interested in the tin claims. Geologic mapping, sampling, and field investigation will start within the next two weeks and will be carried out by the geologic staff of the State Department of Geology and Mineral Industries. Laboratory research under the supervision of Professor George W. Gleason of Oregon State College, using present facilities at the College and additional special apparatus to be acquired, will be carried out as planned at present, largely by Dr. H. C. Harrison, research chemist and spectroscopist, recently secured by the Oregon Department of Geology and Mineral Industries.

Dr. Harrison, who will install and be in charge of the department's new spectrographic laboratory, will leave his present position at the New York State College of Ceramics and take up the Oregon work on August 1.

Results of the tin research, whether favorable or otherwise, will, of course, be made public at the proper time, according to Nixon.

### OBITUARIES

**Frank Cocca**, 74, of Tonopah, Nevada, died June 18, 1941, at his mining property in the Baxter Springs district of Nye County near Tonopah.

**Joseph Wirthlin**, 74, of Salt Lake City, Utah, died April 27, 1941. Wirthlin, long active in the Tintic district, was president of the Crown Point Consolidated Mining Company.

**Frank M. Buol**, 36, died after being injured in a fall while working at Boulder City, Nevada. Buol held a lease on the Johnnie mine in the Johnnie district of Nye County.

**Herrick N. MacLeod**, 71, state metal mining inspector for district No. 2, died of a heart attack while inspecting a property at Cripple Creek, Colorado. Born in Central City in 1870, MacLeod had served as mine inspector for the past 11 years.

**James E. Angle, Sr.**, prominent mining man of Washington, died recently at his home in Seattle. His mining interests extended into Washington and Oregon and included both lode and placer mining. For some years he was active in the management of the former Shamrock Silver-Lead Mines, Inc., near Keller, Washington.

**Charles Zabriskie**, 71, of Eureka, Utah, died May 27, 1941. He was for many years mine superintendent for the Jesse Knight interests in Utah and more recently

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Regular shipments of ore said to average about \$50 a ton are going out from the **Sugar Bowl** mine near Cherry, Arizona. Work is being carried on by the owners, J. L. Sessions, H. G. Allen, and George S. Purtyman of Cherry. The mine is opened by a 400-foot tunnel and a 25-foot shaft.

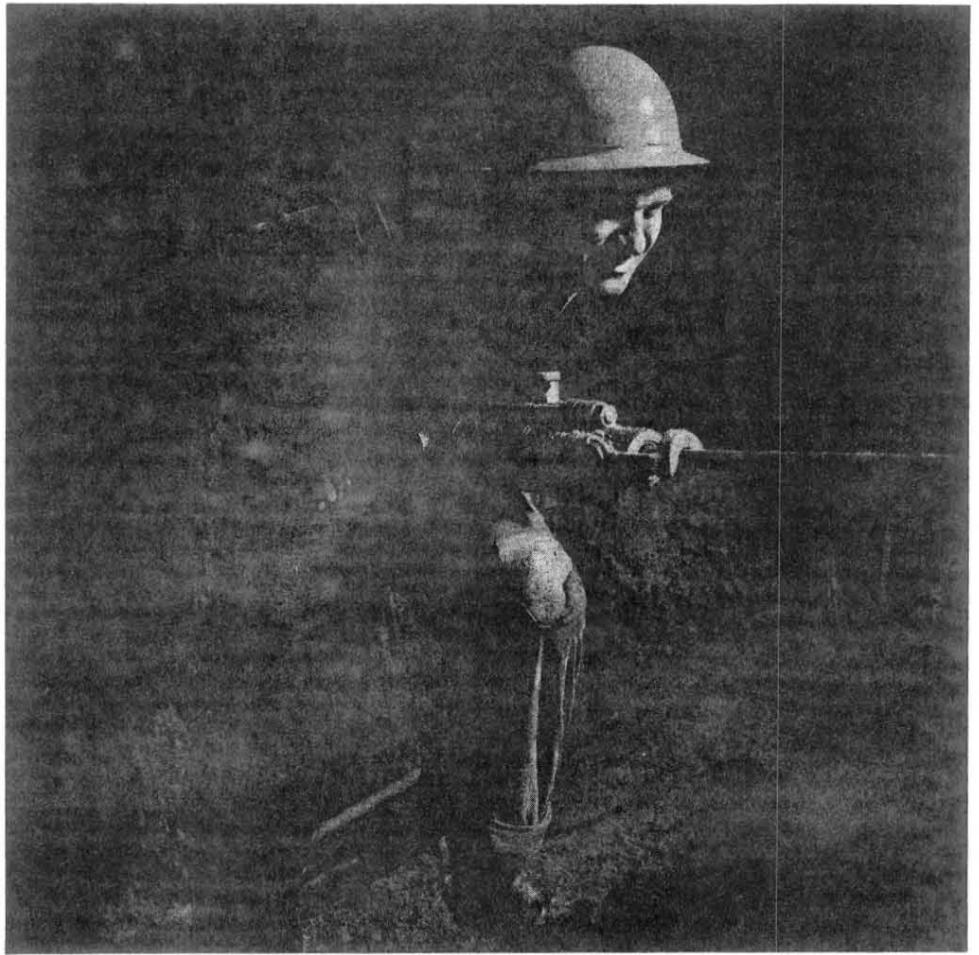
Miners are drifting on the vein 1,000 feet in each direction from the shaft at the **Black Hawk** mine, leased by J. C. Lovett, Box 487, Prescott, Arizona, and it is planned to drive a 500-foot crosscut for the purpose of cutting five other veins which have shown gold values at the surface. During the past five years around 200 tons of ore, averaging better than \$30 a ton in gold, have been shipped from the **Black Hawk**. The mine is owned by R. H. Tucker, Box 54, Cherry, Arizona.



**Yuba Consolidated Gold Fields, Ltd.**, F. C. Van Deirse, general manager, 351 California Street, San Francisco, California, is handling between 530 and 570 cubic yards of material daily with its No. 14 dredge which is working northeast of Marysville, California. The location is in an old channel a few miles from Hammonton which was once the main watercourse of the Yuba River. The ground being dredged is 800 feet wide. The equipment includes 92 buckets of 18 cubic foot capacity, which dump at the rate of 19 buckets a minute. The company has been working at this site for about two years, and it is estimated that about six years' work remain. Ed Cartwright is dredgemaster.

The construction program at the **Jenny Lind** mine near Hornitos in Mariposa County, California, has been finished and a modern surface plant, consisting of a combination office-warehouse building, hoist and compressor house, change house, a 55-foot steel headframe, and repair shops, has been completed. The 150-ton flotation mill has been rehabilitated and the flowsheet includes two-stage crushing, flotation, thickening, and filtering units. The material produced from the large, placer-type jig between the ball mill and classifier is treated in an amalgam barrel and the bullion shipped direct to the United States Mint in San Francisco. Underground development continues, and the shaft has been sunk to a depth of 1,600 feet, which is 100 feet below its original depth. The property is operated by the **Lind Mining Company**, a subsidiary of and under the same management as the **Pacific Mining Company**. P. R. Bradley, Jr., Bear Valley, California, is manager.

Satisfactory returns are reported from ore mined at the **New Deal** claims in the Stringer district near Randsburg, California. The property is being leased with option to purchase from Charles Burrows by Fred Crieth, Verd Wilson, and Noah Lynch. Ore is trucked to the **Burton Brothers** mill at Rosamond, and, accord-



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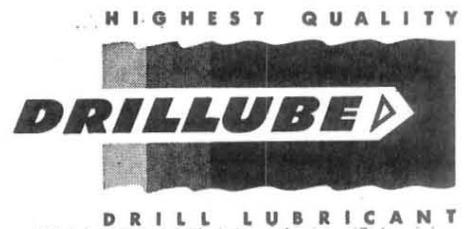
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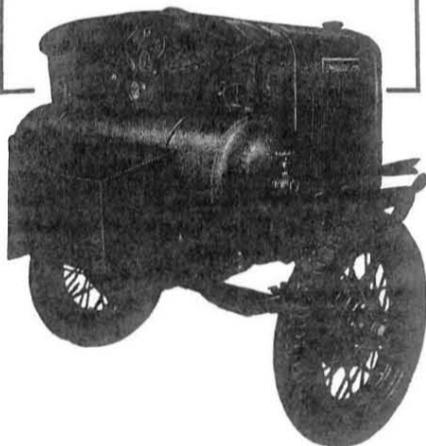
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ing to Crieth, returns from the last shipment ranged as high as \$211.90 a ton, and a preceding milling returned \$81.15 a ton. The ore is being mined from two veins at a depth of 170 feet. It is planned to install additional and better equipment as work progresses if the ore continues to prove of sufficient quantity and grade to warrant more extensive operation.

**Mutual Gold Mines Corporation** has reported gold production in 1940 amounting to \$189,252 with expenses at \$160,019, leaving a net profit of \$29,233. A large portion of expenses included taxes and new improvements. The company operates near Leevining, California, under the name of **Log Cabin Mines Company**, Frank A. Garbutt, 411 West Seventh Street, Los Angeles, general manager.

The **Long Valley Mining and Milling Company** reports continuous operation at its property since November of last year. Since the first of the year work has been conducted on a two-shift basis. William E. McCarthy, Box 216, San Diego, California, is one of the principals of the company.

Extensive examination of the **Wonder** group of eight claims two miles southwest of Alleghany, California, is in progress, preparatory to reopening the mine. Extensive deposits of black sands, carrying values in gold, are said to have been discovered on the property, G. E. Duke, Box 111, El Cerrito, California, is in charge of the work. The claims, which adjoin the Sixteen-to-One mine, formerly were operated by **Wonder Gold Mines, Inc.**, and later by **Golden Arrow Mines, Inc.** The latter company was designated as trustee for stockholders of **Wonder Gold Mines, Inc.**, original owner of the ground.

The tunnel at the **Palace** mine three miles above Strawberry Valley in Yuba County, California, has been driven 800 feet. Jim Bollingar, Strawberry Valley, is operating the property and work is carried on the year around.

The **Mosquito** group of claims has been reopened by Carl Johnson, Berry Creek, California, and D. H. Casey of Alleghany, owners. The gravel property is credited with a good production record 60 years ago and adjoins the **Bowman** mine in Plum Valley, also owned by Casey. The latter property is being worked hydraulically under bond and lease by Bill Ennis.

A crew of three men is employed in opening up the **Arizona** gravel mine seven miles northeast of Alleghany, California. Work is conducted by Walter Bowman, Gordon Stolberg, and Nick Kurzek, owners.

A crew of four men is engaged in opening up the **Charlotte** placer mine 13 miles northeast of Alleghany, California. A mile of new road is expected to be completed within 30 days, after which an Ingersoll-Rand compressor will be installed. It is planned to extend the 185-foot shaft for a distance of 300 feet in order to reach the bottom of the lower channel. A blacksmith shop has been built and a two-story log bunk house and cook house are on the property and in use. The ground, comprising 160 acres, is being worked by J. R.

Robbins, Box 981, Alleghany, and P. W. Barrows.

The **Omega** quartz mine in the Willow Valley district near Nevada City, California, has been leased by Carl Trevethick and associates, and operations are scheduled to begin at once. Ore will be hauled to the Queen Lil mill in the same district. The Omega mine formerly was operated by the Bradley interests.

The **Etna Gold Dredging Company**, working on Wildcat Creek near Callahan in Siskiyou County, California, is handling 3,000 yards of material daily and employing 17 men. The dredge was designed and built by the Walter W. Johnson Company of San Francisco, and is operated under the direction of O. E. Bahrenborg, dredgemaster and superintendent, Blake Hotel, Etna. The company is controlled by W. S. Mead and W. A. Kettlewell, both of 1730 Franklin Street, Oakland.

The dredging project, started nearly a year ago on Clear Creek near French Gulch in Shasta County, California, by the **French Gulch Dredging Company**, is reported to be producing satisfactory results. Equipment includes a 4½-cubic foot, continuous bucket-line dredge, purchased from the Washington Iron Works of Seattle, electrically operated, and with a capacity of 3,000 yards a day. Operations are under the direction of G. H. Sharrer, superintendent, and Ed Shuford, dredgemaster, both of French Gulch. A crew of approximately 19 men is employed. The French Gulch company is a close corporation headed by Etheredge Walker, 351 California Street, San Francisco. J. E. Croudace, 2404 Russ Building, San Francisco, is vice-president.

Progress is noted in the preparations for reopening the **St. John** mine about one mile north of Grass Valley, California. The 500-foot inclined shaft has been retimbered and unwatered for a distance of about 25 feet; a 50-foot headframe has been erected; pipe line has been laid; and a hoist house will be built for the double-drum hoist and compressor. The property is being reopened for exploration by Ed C. Jacobs of Nevada City, co-owner of the Parks Bar Dredging Company. He has held a lease and option on the St. John for nearly five years.

Fire destroyed the furnace building and main plant at the **Great Western** cinnabar mine southwest of Middletown, California. Besides the furnace, the building contained a great deal of other equipment, and the loss is reported to have been heavy. Mining is now being conducted in double shifts in order to have as much ore ready as possible, pending rebuilding of the plant. The property is owned and operated by the **Bradley Mining Company**, Worthen Bradley, president, 1022 Crocker Building, San Francisco. Production of quicksilver at the property has been increased in recent months as a result of the higher price for the metal. Hazen Crabtree is superintendent at the mine.

A mica deposit has been located in the Frazier Mountain district of California by Ralph Hollis and the Rietmann brothers of Simi, California. The claim comprises

20 acres and the men expect to increase the area after further exploration of the section.

The placer mine of the **Caledonia Development Company** one mile east of Downieville in Sierra County, California, has been reopened after a shutdown of several months. It is understood that operations will be resumed in the near future, and that improvements will be made in mining and recovery equipment. Roger E. Jones, Downieville, is president of the company, and John Daniell is in charge of work at the mine.

The **Blue Banks** claims east of Downieville, California, have been optioned by Gordon Lewis, who is preparing to start hydraulic mining soon. Equipment from the Riverside mine in the same district has been acquired by Lewis for the operation.

A dragline dredging operation is scheduled to start in the near future near Hayfork, California, under the direction of Raymond I. Smith. Equipment will include a Bodinson dragline dredge of 3,000 yards daily capacity, powered by a Diesel engine and a three-yard Lima dragline shovel, Diesel-powered.

**Magee Mercury, Inc.**, headed by Harry H. Magee of Thomas Magee and Sons, real estate firm, 69 Sutter Street, San Francisco, is developing a quicksilver property, formerly known as the Great Northern mine, in Sonoma County, California. Equipment includes a 4 by 60-foot Gould rotary furnace, and a crew of 20 men is employed. B. C. Austin, 351 California Street, San Francisco, is vice-president and engineer; H. B. Rucker of H. B. Rucker Company, insurance brokers, 354 Pine Street, San Francisco, is secretary; and Thomas A. Monahan, Box 326, Guerneville, California, is manager.

The **Nevada Rock and Sand Company** is working the Goodhue placer holdings on Grizzly Creek in the Genessee district near Quincy, California. Equipment includes bulldozer, power shovel, large trommel, and units for extraction of the gold. There is estimated to be sufficient gravel of commercial grade for operation of the plant during a long period, and an ample supply of water is available. The property is located in a district which was worked for its gold and copper 80 years ago, and is said to have been enriched by quartz eroded from ledges in nearby hills.

Bud Hilderbrand, Hotel Angels, Angels Camp, California, has taken a lease on the George L. Carley manganese deposits located near Murphys in Calaveras County. Work was scheduled to start the first of July. Promising showings of ore are reported on the property which is within reach of power lines and roads.

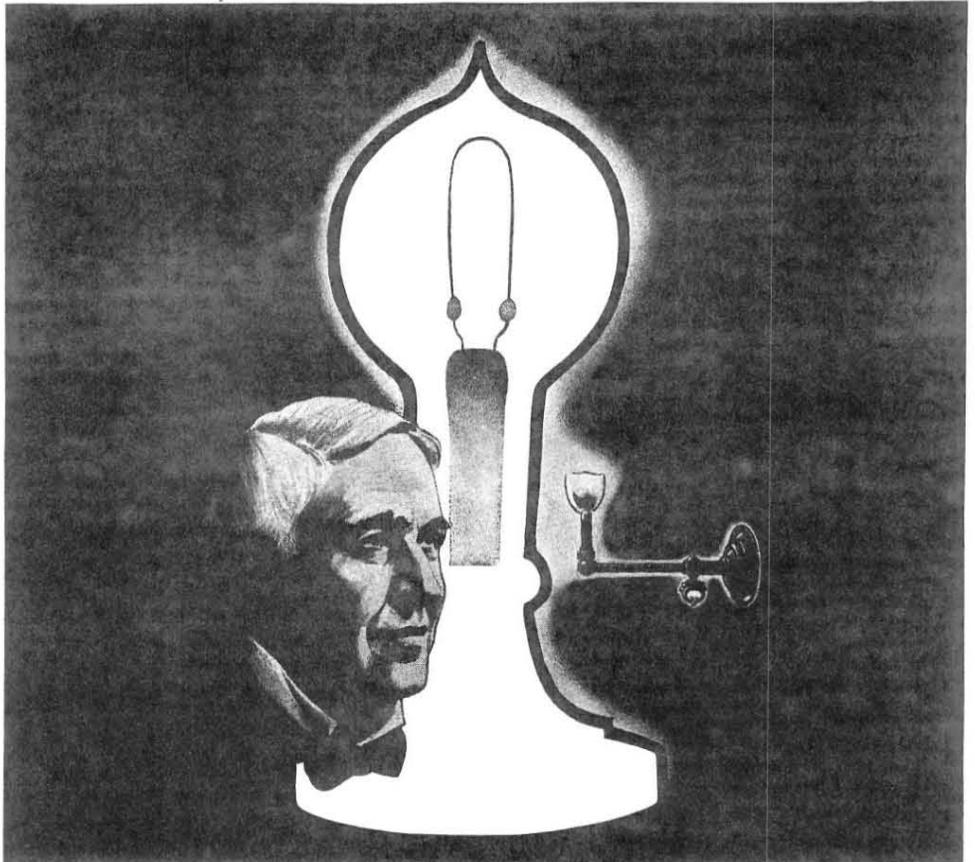
The **St. Jude Mining Company** has been organized as a California corporation with capitalization of \$75,000. The firm's mining property has been under development for some time and is located in the French Gulch district of Shasta County 25 miles northwest of Redding, California. Development has been through four old tun-

nels made during an early period of working. Offices of the company are at 1555 Russ Building, San Francisco.

**Poverty Hill Properties**, Walter W. Johnson, general manager, 910 Balfour Building, San Francisco, California, is a newly organized partnership which will work the old Poverty Hill placer mine near La Porte in Sierra County, California. Development work, which has been under the supervision of Army Adams, 714 West Main Street, Grass Valley, is nearly completed and operations are expected to be under way within the next 60 to 90 days. A 16-mile power line will be constructed to the mine and is expected to be completed by August 15. The ground, which

formerly has been worked hydraulically, will be handled as a dredging enterprise by the new operators.

A new recovery unit has been placed into operation by the **Spring Valley Mining Company** at its gravel property 2½ miles east of Valley Springs, California. The operators have encountered a dark blue gravel formation, carrying commercial gold values, below the 200-foot level and extending to bedrock at 259 feet. The pay material was disclosed after sinking a vertical shaft on what is known as the Deep Blue Channel and which is thought to have run through the area where the mine was started. D. W. McCarty is owner of the mine and Jack Melone is superintendent,



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both of Valley Springs. Charles A. Isham, 230 Redwood Avenue, North Sacramento, is geophysical engineer.

With completion of the present construction program and the addition of new equipment at the property of **Stockton Hill Corporation**, production of ore for the 200-ton mill is expected to be stepped up from the present rate of 100 tons to 130 tons daily. A double-drum hoist is being installed and the company will replace the one-ton ore cars with 2½-ton cars. Development work includes further sinking of the shaft to the 650-foot level. A crew of 50 men is employed at the mine which is located about nine miles south of Grass Valley, California. Walter R. Woock, Box 449, Auburn, California, is president and general manager of the company.

Gold dredging is under way on Indian Creek in the Missouri Flat section by H. E. Van Dyke, Clyde Modrell, and A. J. Warner of Placerville, California. The floating dragline dredge handles 60 yards of material an hour, operating two shifts with six men employed. Approximately 500,000 yards of gravel are estimated to be in sight. A trommel screen, mechanical bowls, and riffles are used in recovery of the gold. The partners formerly used the mining equipment in the Loomis, California, district.

According to reports, **Shattuck Denn Mining Corporation**, Thomas Bardon, president, 120 Broadway, New York City, has purchased the property of the **Scales Placer Mining Company**, Marysville, California. The ground, comprising nine patented and five unpatented claims, is located in the Port Wine Ridge area of northern Sierra County, California. It is understood that the new owners will begin extensive exploration work in an endeavor to solve physical problems which proved a handicap in earlier operations. The present water power facilities will be augmented by electric power from a line which is to be constructed into the district in the near future. Shattuck Denn's principal operations are at Bisbee, Arizona, under the direction of J. A. Wilcox, superintendent.

T. W. Mann, Randsburg, California, expects to begin operations at the property of **Operator Consolidated Mines Company**, Johannesburg, California. A lease and option on the mine was acquired by Mann in April, and since then he has revamped the mill and cyanide plant. He plans to develop some ore in the main shaft and to make tests on showings of tungsten ore. The plant will be used also for some custom milling. George Partenico, Randsburg, is superintendent in charge at the mine.

Diamond drilling is being carried on in unexplored territory from the end of the 6,000-foot crosscut at the **Murchie mine** of **Empire Star Mines Company, Ltd.**, Nevada City, California, to the North Banner mine. The work is to be continued for at least 300 feet. Leasing has been discontinued at the Murchie and the lower levels abandoned. A crew of 35 men is employed.

The **Rao Mining Corporation**, Fred H. Howard, president, Montebello, California,

is developing the Rao mine adjoining the Red Star mine near Alleghany, California. A tunnel has been driven 850 feet and a crosscut 180 feet in an endeavor to pick up the Red Star ledge. The latter property is credited with an early production record of \$100,000, but through a fault the ledge was lost and not relocated. Ed Caley is superintendent in charge.

Shaft sinking at the **Russell mine**, Garden Valley, California, is nearing the 100-foot level where a station will be cut and a crosscut and drifts run. The property is being leased by Uzelac and Hauhauth from Warren T. Russell, Garden Valley, owner. Three men are employed.

It is estimated that two years more of work remain at the Yellow Aster tailings which are being treated by **Anglo American Mining Corporation, Ltd.**, Walter Lyman Brown, president, 206 Sansome Street, San Francisco. The Yellow Aster mine near Randsburg, California, formerly leased by Anglo American, was returned to its owners, the Yellow Aster Mining and Milling Company, in 1940, but the former company retained the plant and equipment and has been treating the accumulated tailings. An increase in pay of 25 cents a day has been granted by Anglo American.

Shaft sinking has reached a depth of 95 feet at the **Cold Beef** group of claims operated by Ed Faris, Julian, California, and associates, and when the 100-foot level is reached, it is planned to drift in both directions on the vein. The vein is stated to be over four feet wide at the surface, widening to over eight feet at the bottom of the shaft. Several hundred tons of the ore have been stored at the surface, awaiting construction of a mill. At a depth of 50 feet, a stringer of ore assaying \$260 in gold to the ton is stated to have been encountered, but was left to be stoped from the lower level. Average value of the milling ore now being mined is said to average from \$6 to \$10 a ton in gold. The Cold Beef shaft is on the same vein as is the old Golden Chariot mine, which is credited with producing over \$2,000,000 in gold in early days. Work now in progress at the Cold Beef shaft is but 250 feet south of the main Chariot workings.

Ellis Patterson and associates of Oakley, California, expect to ship soon two 50-ton carloads of ore from chrome holdings in Plumas County near Quincy, California. Three mines are being developed at the present time, and it is thought that as work progresses, the shipments will be increased.

Production of quicksilver is expected to be under way within 30 days at the **Folwell and Lavender cinnabar** property near Bishop, California, recently acquired by the **Nevada Engineering Company**, Richard C. King, president, Box 5419 Metropolitan Station, Los Angeles. A furnace for recovering the quicksilver has been purchased. An investment of \$50,000 is said to have been spent on acquisition and improvement of the property.

At almost exactly nine months to the day since starting production, the **Sonoma Quicksilver Mines, Inc.**, finished bottling its one-thousandth flask of quicksilver at the

Mount Jackson mine in Sonoma County, California, according to H. D. Tudor, president, 58 Sutter Street, San Francisco. S. F. Wickham, Guerneville, is superintendent in charge of work at the mine. Around 2,000 tons of ore are handled monthly in the 80-ton Gould rotary furnace.

Operations will be resumed at the Kirkpatrick mine near Goodyears Bar, California. The mine, which has been a small-scale producer for the past few years, is operated by Charles G. Johnson, state treasurer of California, State Capitol Building, Sacramento.

Piedmont Dredging Company is conducting preliminary work preparatory to dredging 1,000,000 yards of gravel on the McLean property nine miles north of Chico, California, in Butte County. A crew is now engaged in repairing roads and installing a power line. Equipment will include a single bucket, Becker-Hopkins plant built by Yuba Manufacturing Company. C. A. Palmer, 519 California Street, San Francisco, is associated with the dredging company.

The Barker Corporation, Glenn Bump, president, Chinese Camp, California, has leased a large area of gravel on the South Fork of the American River below Lotus, California. The company has been operating on ground near Merced Falls, California, using a 2½-yard Judson-Pacific electric pontoon dredge and 95 Northwest dragline equipped with two 2-yard Esco buckets.

The Sunmar Dredging Company, Box 228, Oroville, California, is testing for gold on placer ground in the Dogtown district of Mono County, California. The ground was worked hydraulically in the early 80's but operations proved unsuccessful using this method of mining. William F. Baxter, Box 228, Oroville, is manager of Sunmar Dredging. The ground being tested is owned by Thomas Munn of Willow Springs. Sunmar Dredging Company is conducting a dredging operation east of Bangor, California, with John H. Frasher of Palermo, a partner in the firm, in charge.

The Jamison mine near Johnsville, Plumas County, California, has been leased by George Frasher, formerly of Nevada. The property is equipped with a 35-ton mill, and is owned by Colonel C. A. Lundy, Blairsden, California.

COLORADO

Authorization for the construction of a 250-ton milling plant is reported to have been given the Resurrection Mining Company at Leadville, Colorado. The company, controlled equally by the Hecla, Newmont, and U. S. Smelting companies, has been planning mill installation for several years, but plans were necessarily deferred. The Resurrection concern recently purchased the property of the Yak Mining, Milling and Tunnel Company at Leadville. It has operated through the Yak

tunnel since coming to the Leadville district early in 1939. Arthur Kendall is in charge of operations.

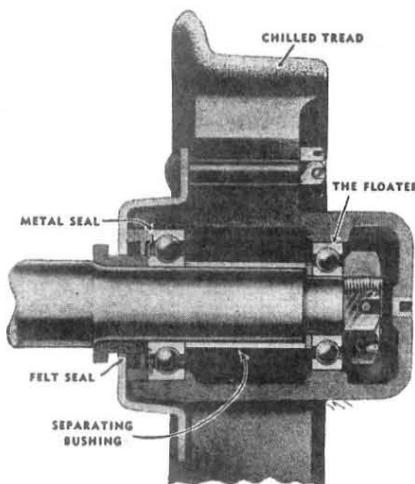
The Record mill at Alma, Colorado, was purchased May 10, 1941, from the London Extension Mining Company by James N. Redman, California Building, Denver, trustee for the Cornish Wall Mines, Inc., and the North Alma Mines Company, and other interests. The group which Redman represents will operate the mill on ores produced principally from the Cornish Wall, Moose, and American mines in the Alma district of Park County. The same interests also control the Russia, Dolly Varden, and Centennial properties in the same district. In addition to milling company ores, the new group expects to han-

dle ore from the area on a custom basis. A new operating and milling company will be incorporated to carry on this work.

Preliminary development work is under way in the Empire-Mascot group of claims in Maggie Gulch near Silverton, Colorado. Al Kolz of Silverton is superintendent in charge for a group which may undertake more extensive operations later in the season.

A drift is being run on an intermediate level above the third level of the Longfellow mine at Cripple Creek, Colorado, by the Longfellow Mining Company. Ore stated to average 2 ounces of gold to the ton is being shipped to the Golden Cycle mill. Wallace K. Howard, Box 353, Victor, represents the owners of the company,

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The town of Custer, in the southern Black Hills, received the first rush of gold prospectors, but the placers proved low in grade and inadequate for the many gold seekers. Prospecting began to advance north and east with the resultant discovery of rich placers in Deadwood Gulch and around Nigger Hill in the Northern Hills and at Rockerville in the Eastern Hills. The first placer claim on Deadwood Gulch was located by Bryant, Coder, and Cudney on November 17, 1875; however, news of it did not reach Custer until the following spring. At that time the town had a population of 11,000 which was rapidly reduced to about 100. By summer the population of Deadwood had reached 25,000.

The discovery of placer gold eventually led to the discovery of lode gold. The first lode claims were the Giant and Old Abe, located by J. B. Pearson on December 11, 1875, and now a part of the Homestake property.

The original Homestake claim was located by Moses Manuel and Hank Harney on April 9, 1876; in the fall of 1877 it was purchased for \$70,000 by George Hearst for the Homestake Mining Company. An adjoining claim, the Golden Star, was purchased at the same time. These two fractional claims contained about 14 acres. Since that time the history of lode gold mining has been largely the history of the Homestake mine, now the largest gold producer in the United States.

The bureau's report describes in considerable detail lode gold mining in the Black Hills. It gives the location and ownership of the various properties, descriptions, types of ore deposits, conditions, production statistics, data on past and present activity, and other information of an economic nature likely to be of interest to those interested in the development of gold in the Black Hills. The report, published as Bulletin 427, Bureau of Mines, is for sale by the Superintendent of Documents, Washington, D. C. The price is 20 cents.

#### RELIEF HILL HYDRAULIC PIT REPLACES TOWNSITE

(Continued from Page 2)

mine the areas not reached by the monitors and for the final clean-up next to the bedrock. The Caterpillar cleans up at the rate of five acres in 7 to 10 days. Previously, when this was done by hand, it would take at least one month. Great care is exercised to determine that the area mined by the Caterpillar is of enough value to be worth while. Continual panning tests are made of the soil as it is torn loose by the machine.

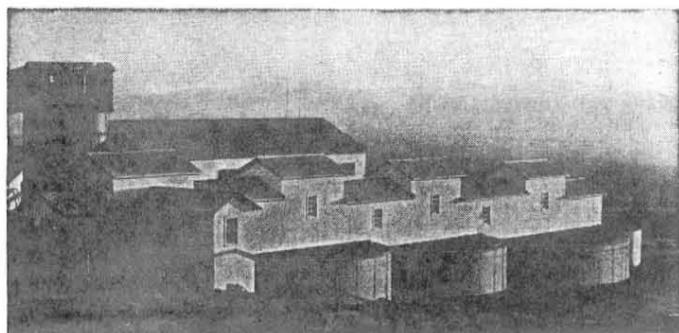
C. E. Clark is superintendent at the mine with his office in North Bloomfield. A. B. Landsburg is foreman. Western Gold, Inc., has its main office at 943 Russ Building, San Francisco. W. H. Taylor is president and George Brent is secretary.

#### FACILITIES OF BUREAU OF MINES OFFERED LA GUARDIA

SERVICES of the United States Bureau of Mines, in carrying out the civilian defense program, were offered to Fiorello H. LaGuardia, director of the Office of Civilian Defense, by Secretary of the Interior Harold L. Ickes. Ickes stressed the 30 years' experience which the Bureau of Mines has had in training persons in first-aid, and in devising and improving underground ventilation systems.

According to Secretary Ickes, the Bureau of Mines has issued certificates to more than one and one-quarter million persons who have completed its first-aid course, and has on hand the names of about 12,000 persons, living in 42 states, who are qualified to teach first-aid to key groups in various parts of the nation. The bureau also has available a newly revised manual of first-aid instruction. In addition, many of the bureau's personnel are familiar with underground construction, ventilation, lighting, and other factors which might enter in the problems of caring for persons in underground shelters.

Incidentally, stated Secretary Ickes, the Bureau of Mines probably has a greater knowledge of and is more familiar with gases, mineral dusts, and explosives than any other public agency, with the exception of the military services. Inasmuch as the mineral industries are the primary users of explosives for other than military purposes, the Bureau of Mines has done



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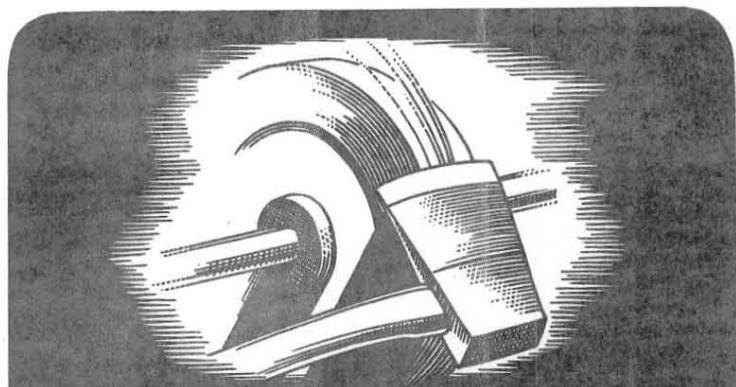
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a large amount of research, both in the laboratory and in the field, and has acquired a great deal of information as to the nature, properties, and uses of explosive and incendiary materials. It has had a vast amount of experience in the investigation of disasters due to explosions of gas, dust, and explosives, both in mines and in surface plants, and is versed not only in techniques of preventing and limiting disasters due to these causes but also in the handling of conditions subsequent to their occurrence.

**ENGINEERING GRANT AWARDED TO COLORADO SCHOOL OF MINES**

THE Colorado School of Mines is the recipient of the 1941 Engineering Foundation grant, established in 1914 through the gift of Ambrose Swasey of Cleveland, Ohio, for "the furtherance of research in science and engineering, or for the advancement in any other manner of the profession of engineering and the good of mankind." The foundation is sponsored by the American Institute of Mining and Metallurgical Engineers, the American Society of Civil Engineers, the American Society of Mechanical Engineers, and the American Institute of Electrical Engineers.

The grant is for the investigation of the mechanics of underground forces in mining. Research will be under the direction of Professor J. Burns Read, head of the department of mining at the school of mines, in collaboration with AIME. Some preliminary work has been done by Professor R. T. Gallagher of the school's

department of mining at the Sunrise mine of the Colorado Fuel and Iron Corporation, Sunrise, Wyoming. In an effort to reduce mining costs, the problems of both using and resisting underground forces will be studied.

In commenting on the grant Read said, "Frequently, underground forces result in expensive mining operations and serious accidents through cave-ins. At other times they are used for breaking the ore with accompanying reduced cost. Little is known of the magnitude and direction of these forces and therefore efficient and dependable results cannot always be predicted. This research has to do with supplying information about these unknown factors. It should be of inestimable value to the mining industry in Colorado and the west."

**DENVER MINT REPORTS EXPANSION OF ACTIVITY**

DURING the past three months additional coinage equipment has been installed at the Denver mint and the number of coins being turned out monthly has been greatly increased. The enlarged payroll is over \$50,000 a month, the number of employees being about 350.

During the first six months of the current year the mint received gold deposits worth \$38,314,298 and silver deposits amounting to \$445,097. This shows a considerable increase in gold receipts over the 1940 figures, but the silver deposits are about the same. For the entire year of 1940 the mint received \$53,860,747 in gold and \$863,661 in silver.

In July of this year another shipment of gold will be received at the Denver mint from the San Francisco mint, which will increase total value to approximately \$5,000,000,000. In 1934, when the new mint building in San Francisco was erected, \$2,500,000,000 worth of gold in coins and bars was transferred to the Denver mint. About \$14,000,000,000 in gold is said to be in the federal vaults at Fort Knox, Kentucky.

**WESTERN MINERALS ASSOCIATES PLANS NEW FRESNO LABORATORY**

A PILOT laboratory will be built at the mineral extraction plant of Western Minerals Associates on California Street in Fresno, California, if the final stamp of approval to a new chemical process for the separation of beryllium from crude beryl ores is given by Twining Testing Laboratories.

A demonstration of the new process was held in the Twining laboratories in the presence of technical men interested in the practical angle of scientific processing of western beryllium. Included in the group were Charles Lull, assayer and metallurgist of Grants Pass, Oregon, and Fred Hoyer, president of Midland Dredging Company, which operates in Siskiyou County, California.

Edgar Wilkins, mineral analyst of the Twining laboratories, is stated to have expressed himself as satisfied with the preliminary operations, but expects to make a more complete check-up of the process.

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ANDREW THICKSTUN\* describes

## The Commercial Ores of Tungsten

WHILE there are numerous ores of tungsten, only four of them are at present of commercial grade. Thus, a description of some of the tungsten occurrences should be of value to western miners who are becoming increasingly interested in American tungsten deposits, both as a source of revenue and as a bulwark of national defense.

All tungsten ores are classified as replacement material and are never found very far from granite. They are often associated with molybdenite, bismuth, tantalite, columbite, pyrite, chalcopyrite, beryl, gold, and silver. Granatoid and quartzose formations are the places to search for tungsten "in place." However, their great specific gravity and imperviousness to weathering make placer tungsten mining profitable in many localities. In some cases dollar-a-pound tungsten has been discarded in gold-placer tailings.

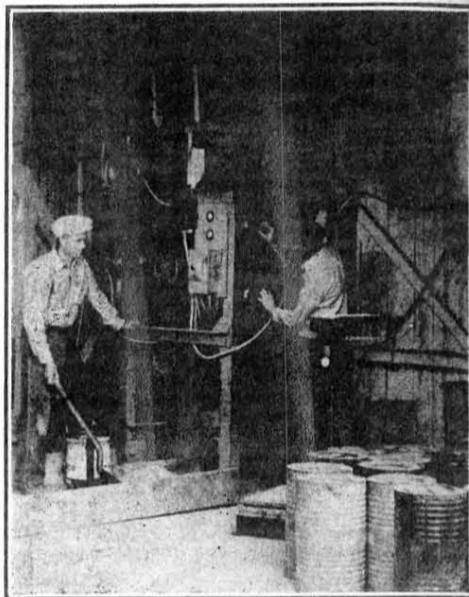
Of the four main ores of tungsten let us consider scheelite first. Scheelite is tungstate of lime. Scheelite may be white, yellow, or brown. Indeed, it may resemble a dirty piece of quartz. But the field prospector need lose no time in identification, for its specific gravity is 6! In structure it is granular and compact, with a resinous luster, when clean, accompanied by a faint translucency. Its streak is colorless and it is very brittle with a hardness of only 4.5. "In place" it is almost always associated with quartz and sometimes with mica. So don't pass up that heavy, dirty-looking quartz. But don't jump at conclusions too quickly. Barium is heavy too, and sometimes resembles dirty quartz. Barium does not possess the lamellar structure, and its specific gravity is only a little over one-half that of scheelite.

Ferberite (tungstate of iron) comes next, contains both iron and tungstic acid. It is black and metallic looking, however, its great weight, somewhat greater than scheelite, should identify it at once. Its hardness is greater than that of scheelite, being 5 to 5.5. Scratched with good steel, it leaves a dark brown color. Break it — flat, shiny surfaces will show. These simple tests will set it apart from magnesite, columbite, and tantalite.

Wolframite, the third tungsten mineral, contains manganese, iron, and tungstic acid. It is quite similar to ferberite but may be either dark brown or black in color. Oftimes its crystals are blade-like. Its hardness closely resembles ferberite, also its specific gravity. Distinguishing between wolframite and ferberite is really unnecessary as both command the same price.

Fourth and last comes hubnerite (tungstate of manganese) which resembles ferberite in almost all respects except color, which is somewhat that of dark liver to purplish black. Its specific gravity is 7.5. Don't mistake it for sphalerite and garnet. Sphalerite will dissolve in warm hydro-

\*Consulting Engineer, Western Minerals Associates, Fresno, California.



The K.U. type magnetic separator at the extraction plant of Western Minerals Associates in Fresno. Mineralogist Earl Petersen, of Western Minerals, adjusts the magnetic intensity of the three fields with the rheostat control, while Jim Wilson, tungsten miner, gets ready to shovel up his 70 per cent WO<sub>3</sub> concentrate. Cans in the right foreground are filled to 250-pound capacity with concentrate ready for storage in the company's bonded warehouse.

chloric acid and smell like rotten eggs. Hubnerite has a resinous luster and is opaque and quite brittle. Scratched with steel it leaves a reddish purple streak, less bright than specularite. It is sometimes found in fluorite, pyrite, and galena, and often accompanies the other tungsten ores.

One last word! Scheelite is the only one of the four tungsten ores that will fluoresce, so don't trust your "tungsten lamp" regarding the others.

### BULLETIN PUBLISHED ON WALLOWA MOUNTAINS, OREGON

AS A RESULT of the movement to set aside as a national park or primitive area the Northern Wallowa Mountain region in Oregon, the State Department of Geology and Mineral Industries made a study of the area to determine its economic importance for future mining purposes. The study was made in the summers of 1938 and 1939 and the results are contained in Bulletin No. 12, entitled "Geology and Physiography of the Northern Wallowa Mountains, Oregon." The authors are Dr. Warren D. Smith, professor of geology of the University of Oregon and John Eliot Allen, geologist of the state department. A detailed technical description of the rocks and their petrography with a number of photomicrographs is given by Dr. Lloyd W. Staples.

The Soriano group of gold mines showed a decline in April of \$56,251, aggregate output being \$598,259 from 110,917 tons compared with \$654,510 from 134,360 tons in March. Water shortage particularly affected production at *Masbate Consolidated Mining Company*, Rio Guinobatan, Masbate, according to report, and to offset this an effort was made to draw ore from the higher-grade sections of the mine, resulting in increased average recovery per ton in April.

The Haussermann group reported a decline in production for April. *Benguet Consolidated Mining Company*, Baguio, Mountain Province, which produced ₱932,901 from 39,739 tons of gold ore, an increase of ₱15,000 over March, was the only one to show higher production. Total production of the group amounted to ₱2,174,300 about ₱97,300 less than that for the month of March.

With a per ton recovery of ₱47.05 during April, *Mindanao Mother Lode Mines, Inc.*, Surigao, Mindanao, is considered one of the richest gold mines in the Philippines in point of the grade of ore. April output was reported at ₱319,142, a new record, from 6,782 tons, almost ₱100,000 more than the previous month's output from 7,150 tons when the per ton recovery was ₱30.86. D. C. McKay is general manager and P. R. Holdsworth is mill superintendent.

A number of Philippine companies have announced dividend payments. *Paracale Gumaus Consolidated Mining Company*, the only company on a monthly dividend basis, distributed one-half centavo per share on April 22 and again on May 20, each disbursement amounting to about ₱25,000. Total dividends to date, including the extra disbursements made last year, are reported as 3 centavos a share, or ₱150,000. *Hixbar Gold Mining Company* made its fourth 1941 disbursement in May, a 20 per cent cash distribution aggregating ₱54,872 or one centavo per share. This brought Hixbar's total disbursements for the year thus far to ₱219,488. *Lepanto Consolidated Mining Company* paid a 10 per cent dividend on April 23, its first for the year. *Masbate Consolidated Mining Company* of the Soriano group, operated by International Engineering Corporation, paid its initial dividend for 1941 on April 29, being ₱500,000, or one centavo a share; and *IXL Mining Company* voted a 20 per cent cash dividend equal to two centavos a share, payable on April 15, aggregating ₱300,000. Of the independently owned companies, *Mindanao Mother Lodes Mines, Inc.*, which joined the ranks of the dividend payers last year, declared its initial disbursement for this year of one centavo a share, or a total of ₱113,000, payable April 15.



#### OREGON PUBLISHES GEOLOGIC MAP OF BUTTE FALLS AREA

A GEOLOGIC map of the Butte Falls quadrangle in colors has been released by the Oregon State Department of Geology and Mineral Industries. The map covers the general area in the western Cascades of southwest Oregon between Roseburg and Medford and gives particular attention to the territory between Trail and Tiller. The section mapped is 25 miles east and west and 34 miles north and south. The various geological formations are outlined in colors and an explanation of the type of formations is given on the margin. The scale is about 7/10 of a mile to the inch.

The field work was done by the department during the summer of 1940 under the supervision of Dr. W. D. Wilkinson of the department of geology, Oregon State College. Copies of the map may be obtained for 45 cents at the State Department of Geology and Mineral Industries, 702 Woodlark Building, Portland.

#### AVERAGE PRICES OF METALS (Figures by American Metal Market)

	Copper Per Lb. Conn. Valley	Lead Per Lb. New York	Zinc Per Lb. St. Louis	Silver Per Oz. New York
1924	13.024	8.097	6.344	66.781
1925	14.042	9.020	7.622	69.065
1926	13.795	8.417	7.337	62.107
1927	12.920	6.755	6.242	56.370
1928	14.570	6.305	6.027	58.176
1929	18.107	6.833	6.512	52.993
1930	12.982	5.517	4.556	38.154
1931	8.369	4.244	3.638	28.701
1932	5.792	3.181	2.881	27.892
1933	7.276	3.870	4.031	34.728
1934	8.658	3.8595	4.162	47.973
1935	8.880	4.0648	4.331	64.273
1936	9.710	4.7091	4.903	45.088
1937	13.391	6.0085	6.517	44.805
1938	10.225	4.7388	4.613	43.222
1939	11.197	5.0531	5.117	39.082
1940	11.528	5.1788	6.339	34.773
1940				
Jan.	12.216	5.4712	5.644	34.75
Feb.	11.405	5.0761	5.543	34.75
Mar.	11.385	5.1923	5.75	34.75
Apr.	11.327	5.0712	5.75	34.75
May	11.324	5.0154	5.808	34.949
June	11.375	5.00	6.24	34.825
July	10.812	5.00	6.25	34.75
Aug.	10.954	4.8537	6.398	34.75
Sept.	11.536	4.9292	6.937	34.75
Oct.	12.00	5.3077	7.25	34.75
Nov.	12.00	5.7283	7.25	34.75
Dec.	12.00	5.50	7.25	34.75
Ave. 1940	11.528	5.1788	6.339	34.773
1941				
Jan.	12.00	5.50	7.25	34.75
Feb.	12.00	5.6023	7.25	34.75
Mar.	12.00	5.7654	7.25	34.75
Apr.	12.00	5.85	7.25	34.75
May	12.00	5.85	7.25	34.75
June	12.00	5.85	7.25	34.75

#### UNEMPLOYMENT TAX CONTINUES TO OVERBURDEN IDAHO MINES

IDAHO'S state unemployment compensation tax continues to rest more heavily upon the mining industry than on almost any other, according to a report of the state industrial accident board which administers the fund. Total receipts of the unemployment compensation division for the first two years of operation, the report shows, amounted to \$3,474,283, while payments of benefits were \$4,087,960.

Mining paid into the fund nearly 15 per cent of the total, while receiving only 10.35 per cent of the benefits. Heaviest contributor to the fund was wholesale and retail trade, which, however, drew more from the fund in proportion to its contribution than did mining.

Culprit of the whole situation was lumbering, which accounted for 37.74 per cent of all benefits collected and paid only 14.24 per cent of the benefits. Attempts in the last legislature to correct the seasonal labor condition failed. Construction and lumbering, the two principal seasonal occupations, thus will continue to draw the lion's share of the benefits, while mining will continue to pay, in proportion, the lion's share of the contributions.

#### REPORTS OF WINNING TEAMS OF ANACONDA FIRST-AID CONTEST

IN THE annual first-aid contest sponsored by the Anaconda Copper Mining Company, the Leonard No. 2 team placed first with 484.5 points and took the first prize, a cash award of \$300. The contest was held June 30 in the Columbia Gardens at Butte, Montana. Second prize, \$230, was awarded to the Anselmo No. 1 team with only 2½ points less than the winner. The Mountain Con No. 1 team placed third, winning \$120. Many other cash awards were made and in addition the safety engineers for the first four teams were presented with 10-unit first-aid kits. Each of the others received a fold-up first-aid kit. Each member of each team was awarded an automobile first-aid kit.

E. H. Denny, chief engineer of the U. S. Bureau of Mines complimented the men on their performance and said, "Although this is a contest to win awards, it also is more than that—it is training to win safety in industry, the home, and on the highway."

A. H. Zeilinger of Pueblo, Colorado, safety director for the Colorado Fuel and Iron Company, who was a guest on the occasion, told the men that high as the value of first-aid instruction was in teaching men to care for injured, such training had an even higher value—that of teaching men the prevention of injuries.

Reminder: Drop a note to American Lumber + Treating Co. to find out how costs on timbering and other lumber can be cut by using "Wolmanized Lumber". Address is 1651 McCormick Bldg., Chicago.

### PROGRAM COMMITTEE PLANS FOR ANNUAL CONVENTION

THE program committee of the American Mining Congress has chosen "Metals for Defense" as the theme for the Eighth Annual Metal Mining Convention and Exposition to be held in San Francisco, California, September 29 to October 2. At that time more than 2,000 of the country's leading mining men and allied equipment manufacturers will gather together to discuss ways and means of further aiding in our armament program.

In a preliminary meeting held in San Francisco late in June, the national program committee for the convention had before it suggestions received from hundreds of mining men throughout the country. From these suggestions a program is being arranged that will include not only speakers from the ranks of mining but various of those who are engaged in the administration of the defense program. Strategic minerals will receive special attention, and encouraging progress will be recorded in the effort to supply these key materials so vitally needed for munitions production.

Taxation, labor relations, distribution, and economic problems of the mining industry will be considered, as well as the need of adequate priority ratings for mining machinery and supplies in order to assure continued capacity production. Special sessions on practical mining and milling problems, of wide interest to operating men, will be held, and a complete exposition of mining equipment will be presented.



The program committee is under the leadership of James W. Wade, president of Tintic Standard Mining Company, Salt Lake City, Utah, who is general chairman. State chairmen are as follows:

Alaska—Ernest N. Patty, manager, Al-luvial Gold, Inc., Fairbanks;

Arizona—Arno S. Winther, manager, Miami Copper Company, Miami;

California—Estey A. Julian, consulting mining engineer, San Francisco;

Central and Eastern States—Wilber Judson, vice-president, Texas Gulf Sulphur Company, New York;

Colorado—William J. Coulter, Climax Molybdenum Company, Denver;

Idaho—J. B. Haffner, general manager, Bunker Hill and Sullivan Mining and Concentrating Company, Kellogg;

Lake Superior District—Patrick Butler, Butler Brothers, St. Paul;

Montana—R. D. Bradford, manager, American Smelting and Refining Company, East Helena;

Nevada—Percy G. Dobson, general manager, Summit King Mines, Ltd., Fallon;

New Mexico—William H. Goodrich, assistant superintendent of mines, Nevada Consolidated Copper Corporation, Santa Rita;

Oregon—H. C. Wilmot, manager, Bonanza Mines, Inc., Sutherlin;

South Dakota—Harlan A. Walker, assistant general manager, Homestake Mining Company, Lead;

Texas—M. W. Hayward, American Metal Company, El Paso;

Tri-State District—H. H. Utley, manager, St. Louis Smelting and Refining Company, Baxter Springs;

Utah—Gloyd M. Wiles, general manager, Park City Consolidated Mines Company, Park City;

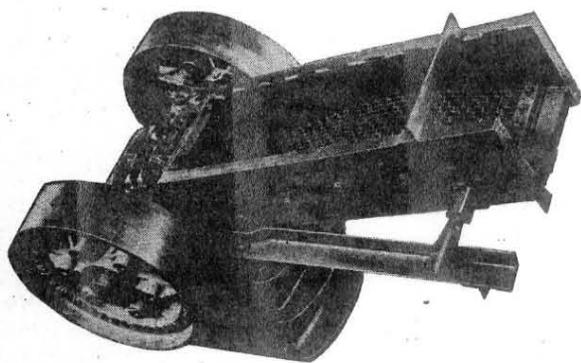
Washington—Jens Jensen, Pend Oreille Mines and Metals Company, Spokane.

### SUNSHINE MINING COMPANY STARTS OREGON PLACER WORK

THE Burnt River Division of the Sunshine Mining Company is building a four-foot bucket-line dredge on Burnt River near Whitney, Oregon. The dredge will be owned jointly by the Sunshine Mining Company and the Idaho Canadian Dredging Company. Harry B. Murphy, Box 2127, Boise, president and general manager of the Idaho-Canadian concern, is in charge of the operations. Ralph Bedell, Whitney, is foreman of the construction crew.

The Sunshine company, the largest silver producer in this country, operates at Kellogg, Idaho, where R. D. Leisk, Box 1080, Kellogg, is general manager. The company recently acquired the Crescent manganese property in Washington which it is operating through its Manganese Division.

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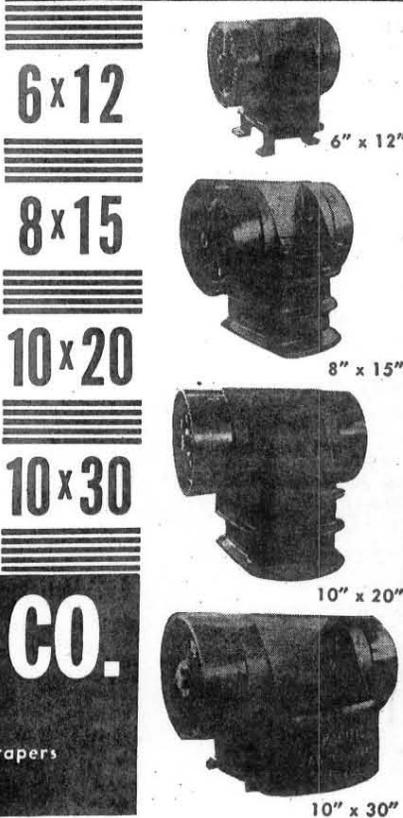
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the International Smelter at Miami. Arthur Murphy, 19 Ashland Street, Phoenix, owner of the Ash Peak, has been operating the property.

**Phelps Dodge Corporation**, Louis S. Cates, president, 40 Wall Street, New York City, has declared a dividend of 50 cents a share on the common stock, payable September 10, 1941, to stock of record August 15. The company made 25-cent payments in each of the two preceding quarters.

The **Tombstone Mining Company** has filed an amendment to its articles of incorporation changing its name to the **Gold Bar Mining Company**. The company operates the Allison mine in the Baboquivari district of Arizona, and has been making regular shipments of gold-silver bars. L. M. Vreeland, 1007 Valley Bank Building, Tucson, is general manager, and R. M. Gammell, 715 North Tyndall, Tucson, is general superintendent at the mine.



**Salmon River Dredging Company**, operating on the Salmon River at Forks of Salmon, Siskiyou County, California, has been reorganized as the **Salmon River Gold Dredging Company**. George G. Titzell, Jr., 310 Kearney Street, San Francisco, and J. P. Wood, Forks of Salmon, are general partners. F. F. Titzell is a limited partner. Wood is engineer in charge of operations.

The **Horse Shoe Dredging Company**, Placerville, California, will move from its former location at the Crossett ranch on the Copperopolis road to a new site near Placerville. Equipment includes a Bucyrus-Erie dragline equipped with two 1½-yard Esco buckets. George Butler is manager of the company.

**Lancha Plana Gold Dredging Company**, C. G. Patmon, president and general manager, Camanche, California, will begin dredging operations within 30 days at its new Butte Creek location six miles southeast of Chico. Equipment will include a 35-cubic yard bucket dredge, electrically operated. The area to be worked comprises 600 acres and adjoins territory formerly mined by the El Oro and Natomas companies. It is estimated that sufficient gravel is available here to furnish several years' operations for the company. Lancha Plana also operates a gold dredge near Fair Oaks, California.

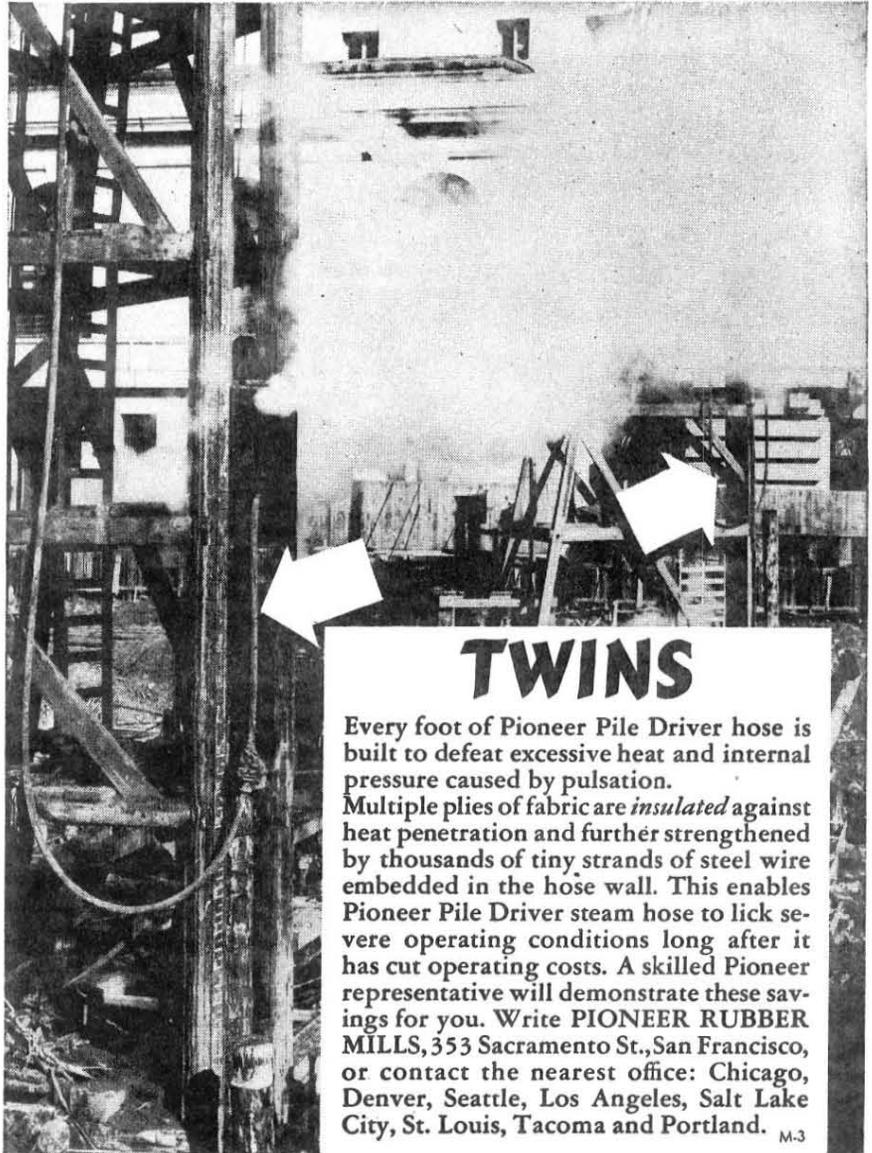
Installation of new mining equipment preparatory to a large-scale development program is planned by **Big Four Operators, Inc.**, at the J. M. Gardner gold mine north of Kelsey, California. A specimen vein 6½ feet wide made up of rich quartz calcite stringers was opened up in a 65-foot drift on the 50-foot level a few months ago, and a 22-foot vein of lower grade also was encountered. The recently incorporated company consists of W. T. Robbins, E. H. Shields, G. L. Smith, and Charles Votaw, all of Greenwood, California.

**General Dredging Corporation**, O. Jack Boucher, general manager, Natoma, California, is handling about 4,800 cubic yards of material daily at its location on the American River near Coloma, California. Here two 150-yard-per-hour Bodinson dragline dredges operate in conjunction with two 1½-yard Marion draglines equipped with 60-foot booms and 1½-yard and 1¼-yard Page and 1½-yard Esco buckets.

Development work on a new tunnel is expected to start in the near future at the **El Dorado Argonaut** mine about two miles northeast of Greenwood, California, and ore bodies, one of which is stated to run from 40 to 80 feet in width, will be opened

up. A series of test runs is being made in the 35-ton pilot mill on stoped ore and ore from a nearby dump, which is trammed 700 feet to the plant. A flotation unit and thickener are now being installed in the milling plant. Oliver Dupuis, Greenwood, Bryant Moore of Exeter, and Jack Sisler of Visalia are interested in the property.

Milling machinery from the Black Oak mine formerly operated by Russell J. Wilson of Garden Valley, California, will be moved to the millsite at the **Feliciana** mine near Mariposa, California, now operated by Wilson. The Feliciana was acquired by Wilson around 15 months ago and since that time he has carried on extensive exploration and development work. Over



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1,000 tons of ore are reported to have been blocked out. William Bessler is in charge of the work and will continue as mine superintendent. James Franklin is mill superintendent, and Francis Frederick, 2527 Hearst Avenue, Berkeley, California, will be in charge of all geological work.

The **Ancho Erie Mining Company** has encountered a vein said to average six feet in width in developing its property near Graniteville, Nevada County, California. A road is being built for hauling equipment and supplies to be used in construction of a mill and other surface buildings. The company recently was organized by several Grass Valley business men. Included in the group are C. A. Helbach and Fred Anderson, who have been working the property on a small scale for the last two years.

**Natomas Company**, Thomas McCormack, president, Forum Building, Sacramento, California, distributed dividends of 25 cents a share on July 1, 1941, payable to stock of record June 14. A similar amount was paid on April 1.

The beryllium oxide and alloy plant under construction at Harbor City, California, by **Copac Limited**, 117 West Ninth Street, Los Angeles, California, is expected to begin operating in less than 30 days. When completed the plant will have a capacity of from five to ten tons each eight-hour shift. The firm desires to contact additional sources of supply of beryllium ore running 10 per cent and better produced in the United States. A contract has been made with the Black Hills Keystone Corporation of South Dakota for ore of this grade.

The **Arctic Mining Corporation**, comprised of C. T. Dunkle, Sierra City, California, and J. P. Farrell, Downieville, is conducting tests at its gravel mine preparatory to dragline operation. The property is located in Sierra County.

An expenditure of \$22,220 is reported to have been made by Spencer Grant of Grant, Birkholm and Company, Inc., 206 Sansome Street, San Francisco, California, and his associate, R. W. Lea, for mining equipment to be used at their **Leagrnt** quicksilver mine in Panoche Valley, San Benito County, and a new road is to be built to the property. The mine, owned by the **Leagrnt Mine Syndicate**, comprises three leases, the Lily Berg, Goodall Estate, and the Manuel Ortiz property. E. H. L. Mitchell is in charge for the syndicate.

Lessees of the **Hilltop** antimony mine, located in the Argus Range, north of Trona, California, in Inyo County, have made two shipments of ore to a mill at San Fernando. Production is expected to vary from 25 to 75 tons a day. Mining machinery has been installed, and a road has been built to the mine. A crew of seven men is employed. According to the operators, Milus Robinson and Bill Lewis, both of Randsburg, the vein is running around 40 per cent. Archie Dean of Independence, California, is owner of the property.

**Alaska Juneau Gold Mining Company**, P. R. Bradley, president, 1022 Crocker

Building, San Francisco, California, has reported an estimated operating profit for June 1941 of \$113,400 taken after operating charges but before depreciation, depletion, and federal income taxes. This figure compares with \$115,500 in May 1941 and \$66,700 in June 1940. Operating revenues mounted to \$336,900 in June, compared with \$383,000 the preceding month and \$339,000 in the corresponding month of 1940. The June figures bring the estimated profit for the first half of 1941 to \$731,600, taken before charges. This amount is against \$611,500 in the corresponding period of 1940. Operating revenue totaled \$2,291,900 compared with \$2,200,500. During the first six months of the current year, 377,060 tons of ore were mined and trammed to the mill. The company has declared a dividend of 12½ cents a share on the capital stock, payable August 1, 1941, to stock of record July 7. The company distributed similar amounts in the two preceding quarters and paid 15 cents a quarter or a total of 60 cents in 1940 and 80 cents a share in 1939.

R. E. Combs, Prineville, Oregon, has taken an option on 32 quicksilver claims in Lassen County, California, from James Harris and Clyde E. Baces, both of Wendel, California. Comprising 20 acres each, 20 of the claims are in the Amadee district and the other 12 are located a mile west of Wendel. Combs is vice-president and general manager of Oronogo Mercury Mines, Prineville.

The gold mine, formerly owned and operated by the **Hoge Development Company**, A. W. Hoge, president, Box 214, Nevada City, California, has been purchased by Leo and Clarence Cooley. Financed by Los Angeles capital, the brothers will start development work on two large ledges intersecting the property. The mine, consisting of 125 acres, is near Nevada City. The Cooley brothers have operated the Tennessee Flat mine near the Hoge for five years.

The **Rainbow** mine on Kanaka Creek near Alleghany, Sierra County, California, is to be reopened by M. F. Sizer and associates. Investigation is reported to have revealed large quantities of serpentine containing chromite and magnesium.

Because of seasonal water shortage the **Omega Company** has shut down its mine near Washington, California, except for a few men employed in maintenance work and in improving the water storage facilities, ditches, and flumes. Operation of the mine was started this spring with completion of the Upper Narrows debris dam at Smartville on March 9. The company has 12 miles of ditches and flumes. Pipe and flumes carry the water 2,500 feet for the operation, and a 1,000-foot drop gives pressure to the water. Four monitors have been in operation with a crew of more than 30 men employed. The gravel is washed through 2,000 feet of sluice boxes, approximately 1,100 feet of which are underground. Operations will be resumed around November when a water supply is available again. It is estimated that there remains sufficient gravel at the Omega mine for 20 years' operation. The Omega Company is a co-partnership com-

prised of California and Oregon interests. Theodore A. Larsen is superintendent at the mine, and G. B. Little, Whittier, California, is assistant superintendent.

A three-foot vein, carrying values from \$25 to \$34 a ton, was discovered recently at the Accident No. 1 claim near Strawberry Valley in northern Yuba County, California. A previous strike in Accident No. 2 has proved to be a steady producer with assays reportedly running from \$6 to \$120 a ton. The Accident claims, which are under development by James, Richard, and David Young, contain two distinct veins, both highly mineralized. The property has been equipped with a milling plant, including ball mill, jig, and flotation units. Development work includes sinking a 700-foot shaft.

The McCoy and Butler Dredging Company, Ross J. McCoy, general manager, Georgetown, California, is employing 11 men in its dragline operation near Georgetown. Equipment includes a dryland washing plant, and riffles are used in recovery of the gold. Arthur Martin is mine superintendent.

The United States Bureau of Mines has completed its development and investigation program at the Black Rock tungsten property near Bishop, California, and the Coso mercury mine near Little Lake, California. The work was carried on by trenching and drilling, using a rotary bucket drill to cut a minimum size hole 16 inches in diameter which gives an excellent sample of the ore, according to Leon W. Dupuy, bureau engineer, 6508 South Halldale Avenue, Los Angeles, who has been in charge of the project.

A reportedly rich strike of gold ore in Canyon Creek is said to be under development by William Ladd, Denny, Trinity County, California, who is stockpiling the material preparatory to milling. Ladd also plans to reopen property formerly worked by his father.

Placer Properties, Inc., H. G. Kumle, president, Box 532, Oakdale, California, has purchased a 10-acre tract of ground in the Orange Blossom Colony near Knights Ferry, California, for a reported price of \$5,750. It is estimated that \$50,000 in gold is available after removing about 10 feet of overburden, and that around \$30,000 will be expended in recovering the gold. The company, a dredging concern, has been operating in the district for several years.

The Gerlinger Mining Company has started dredging on Weaver Creek at the mouth of Little Browns Creek in Trinity County, California, using a 3/4-yard bucket, dragline outfit. A. B. Ogilvie, Hayfork, California, is in charge of the operation.

A certain amount of development has been discontinued at the property of Lava Cap Gold Mining Corporation, Nevada City, California, in order to use men formerly employed in that work to stope ore for the mill. A shortage of experienced miners is reported by the company. Four hundred tons of ore are milled in a day by the Lava Cap company. A crew of 335 men is employed at the Central and Banner mines under the direction of John

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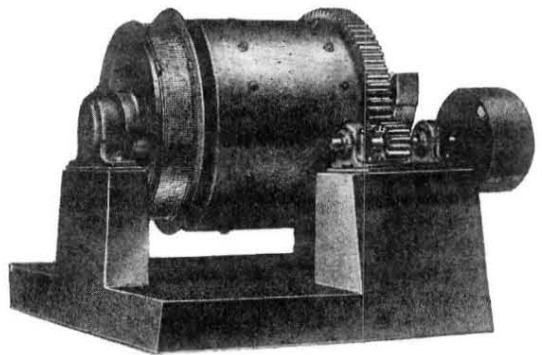
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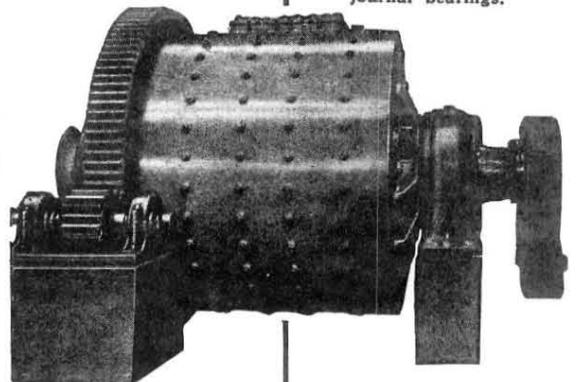
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Chandler, superintendent. Otto Schiffner, Nevada City, is general manager of the company.

Four five-inch monitors are in use at the Birchville mine near Graniteville, California. The property, owned by William Moulton and Harvey Trubeschenck, North San Juan, California, is located in the old San Juan Ridge district famous in the 50's for its hydraulic mining. With completion of the Upper Narrows Dam on the Yuba River making it no longer necessary to stack tailings, hydraulicking is being revived in the section.

Charles Gillis, Angels Camp, California, and his partner, Howard Castle, have taken over several chrome deposits in Calaveras County, California, including the Burnham mine near Copperopolis and the Gillam mine near Valley Springs. Fifty tons of chrome ore have been shipped from the Burnham property.

Commercial ore bodies have been opened up at the Old Slave mine operated by Al Adams, Grass Valley, California. The property was acquired by Adams 10 years ago, and six months ago he retimbered the shaft and drifts and began development work. A five-stamp mill was placed in operation on a two-shift basis and handled an average of 50 tons of ore daily. The mine receives its name from having been worked in the early 60's by a crew of negro slaves owned by Colonel F. Farrington, a southerner.

Production is expected to begin this month at the Gold Wreath mine in Quartz Valley near Yreka, California. A small pilot mill is now being used for sampling, but a larger plant will be built at the mine. The main building, which includes living quarters, dining room, kitchen, and office, is nearly completed. Twelve men are employed at present and that number will be increased to 21 when production is under way. C. G. Rogers is mine superintendent.

Satisfactory results are reported from the C. and E. Dredging Company operation on McAdams Creek where regular cleanups and shipments of gold are being made. Operations at the location were started May 9, 1941. A crew of 11 men is employed under the direction of Hugh Williamson, general superintendent and dredgemaster, Fort Jones, California. The company is headed by A. B. Cutler, 1002 Pacific Building, Portland, Oregon, and Alton L. Collins, 909 Terminal Sales Building, Portland, is general manager. Equipment includes a No. 6 Northwest dragline with 1½-yard Esco bucket and washing plant.

E. L. Cord, 811 North Hillcrest, Beverly Hills, California, is handling 150 tons of scheelite daily in the Keeler mill which he acquired recently. Ore from his tungsten properties near Darwin, California, is trucked over a 23-mile road to the plant. The Keeler mill had been under lease for the past two years to the Del Norte Mining Company prior to being taken over by Cord. The tungsten holdings were purchased last spring by Cord from the Darwin Consolidated Tungsten Corporation.

COLORADO

The mill south of Ohio City, Colorado, is reported to have been purchased by J. J. McClain of Ohio City and son, who are operating the Bertha mine. The mine is near Ohio City, Gunnison County.

Work has been resumed after the winter shutdown by Ernest Hubbard of Del Norte, Colorado. The property is in San Juan County on the Rio Grande side of Stony Pass and has been operated by Hubbard for the past several seasons. Hubbard is at Silverton in personal charge.

The interests operating the Phillips mines at Alma, Colorado, organized as the Two-Three-Four Mines, Inc., are said to have reorganized and will henceforth be known as the Buckskin Joe Mining Company. Charles W. Jordan of Leadville, president of the former operating concern, also heads the new company. Holdings are the consolidated Phillips group and a 40-ton flotation mill acquired from the Alma-Betts property.

Three to four carloads of ore are being shipped daily by the Golden Cycle Corporation from its Ajax mine at Cripple Creek, Colorado, to its plant at Colorado City. Average values are said to have increased during the last month. A crosscut is being driven on the twenty-third level, with some drifting on the twenty-fourth and twenty-sixth. Surface improvements include plans for a new change room and hoist house. Charles Carlton of Cripple Creek is mine superintendent, employing about 70 men. A. H. Bebee, Box 127, Cripple Creek, is vice-president in charge of mining. The Ajax was one of the first of the Golden Cycle properties to be drained by the Carlton tunnel. The tunnel, which reached the 30,991-foot mark June 30, is scheduled to be completed on August 1 of this year at which time it will have reached the Portland No. 2 shaft. Two smaller tunnels will then be driven, one to undercut the Vindicator shaft and the other to the Crescon.

The Great Western Silver Mines Corporation, headed by Walter A. Moore of Gold Hill, Colorado, is reported to have given a block lease on the Blue Bird mine near Nederland to D. J. Van Baak, of Los Angeles. High-grade silver ore is said to have been opened by Van Baak who recently made a shipment to the Leadville smelter.

Alfred B. Iles of Ignacio, Colorado, is developing a tungsten deposit in a drift from the Yukon tunnel in his Ariadne property at Silverton, Colorado. The tunnel is 6,000 feet long and opens the property at a depth of 2,000 feet. Ariadne holdings consist of the Yukon claims, which include the Uncle Sam, and the Ariadne group and were formerly operated under lease by the Gold Hub Mining Company.

Concrete foundations for the proposed 25-ton mill are being poured by the Treasure Mountain Gold Mining Company which holds the Golden Fleece, San Juan

Mining Journal 1941

12-15-91 A 170

### SMELTING COMPANY ACQUIRES HOLDINGS IN NEW MEXICO

UNITED STATES SMELTING REFINING AND MINING EXPLORATION COMPANY, a subsidiary of United States Smelting Refining and Mining Company, has acquired extensive mining property in southwestern New Mexico, on which it has started exploration and development work.

Following a report made by J. B. Knaebel, superintendent and engineer in charge of operations, who began examination of the properties last fall, the company obtained options on the following groups of claims: Bull Frog, Rowlee Slate, C. R. Altman-Nellie Patterson, Lutz, Homestead, Cashier, Eniquita, Boston Bicket, Silver King, Gold Spot, and Betty Jo. The claims are lead and zinc properties, located mainly in the Central mining district adjacent to the Chino mines of Nevada Consolidated Copper Corporation, Ground Hog mines of A. S. and R., and the Black Hawk Consolidated Mines Company property.

A 45-foot headframe has been erected at the Bull Frog shaft, and a 30-horsepower hoist and two 350-cubic foot air compressors have been installed. Ore bins, warehouse, shop, office, and other buildings have been constructed. Underground development also is under way in the Rowlee Slate shaft in addition to diamond drilling from the surface.

Western headquarters for the company are in the Newhouse Building, Salt Lake City, Utah. F. S. Mulock, Box 1980, Salt Lake City, Utah, is general manager in charge of western operations.

### FOUR MONTHS' STRIKE IS ENDED AT TRONA, CALIFORNIA

THE strike of almost four months' duration at the plant of the American Potash and Chemical Corporation, Trona, California, has been ended and production was resumed at the plant when 500 employes returned to work. The company normally employs 1,300 men in three shifts.

The potash company's wage proposal of 78 cents to \$1.20 an hour, based on skill, was accepted, and the differences over a closed shop and working conditions were submitted to arbitration. The union had demanded 92 cents to \$1.35 an hour. Before the beginning of the strike the wage scale was 67½ cents to \$1.05.

### MINE-TIMBER STUDIES FROM COLORADO SCHOOL OF MINES

THE Colorado School of Mines has announced the publication of Mine-Timber Studies, which is Volume 36, No. 3, of the Colorado School of Mines Quarterly, now off the press and ready for distribution. Included are two papers: Stresses in Mine-Drift and Timber-Sets by Raymond L. Grazier, and Increasing the Endurance of Drift-Sets by Robert B. Gayer. Both are reports on research carried on under the direction of the department of mining at the Colorado School of Mines. The Quarterly comprises 65 pages which include 6 halftone reproductions of photographs, 17 diagrams, and charts and 17 tables.

The first paper reports on laboratory tests on various phases of model timber-

sets, using direct loading, uniform distributed loading, and uniform distributed loading with a systematic interruption of the load. Tabulation of the data resulting from each test, together with sample calculations for each type of loading used, is presented.

In the second paper the results of loading on cap-and-post arrangements are recorded. The notes and data for 45 individual tests under various controlled loadings are given with diagrams. Photographic records were made of two representative tests at progressive stages of loading and these records are reproduced.

The Quarterly may be obtained from the department of publications of the Colorado School of Mines at a cost of fifty cents.

### PHELPS DODGE SUBSIDIARY TO ERECT PLANT AT LOS ANGELES

ACCORDING to an agreement with Defense Plant Corporation, subsidiary of the RFC, Phelps Dodge Copper Products Corporation, 40 Wall Street, New York City, will build and equip a plant at Los Angeles, California, to be used in the manufacture of copper products. An expenditure of \$2,995,000 was first authorized for the construction program, but an additional \$105,000 has been granted to Phelps Dodge by the federal agency.

Phelps Dodge Copper Products Corporation is a wholly owned subsidiary of Phelps Dodge Corporation. The latter concern has extensive mining properties in Arizona, Mexico, and New Mexico.

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ifornia, and Nevada. More recently he has been in charge of mill design and construction for the Calistoga Mining Company at its Grand Reef mine, Klondyke, Arizona.

**Dr. Curtis L. Wilson**, who has been head of the metallurgy department of the Montana School of Mines at Butte, has been made dean of the Missouri School of Mines and Metallurgy, University of Missouri, at Rolla. He took office on August 1. Wilson is a graduate of the Montana School of Mines, obtaining his degree in metallurgical engineering in 1920. After being employed in the Anaconda smelter for 1½ years, he joined the staff of the Montana School of Mines, serving on the faculty for the past 20 years.

**C. V. Brennan** has been transferred from assistant general manager of the Britannia Mining and Smelting Company, Ltd., Britannia Beach, British Columbia, to the staff of the parent concern, the Howe Sound Company. His address will be 2430 Monte Vista Place, Seattle, Washington. Some years ago Brennan was active in optioning and developing the Chelan copper mine at Holden, Washington, which Howe Sound now operates as its Chelan Division. His present work is along the lines of exploration and development.

## OBITUARIES

**William H. Cole**, 73, master mechanic for the Utah Ore Sampling Company at Murray, Utah, died June 29 in Salt Lake City following an accident in the plant. He had been with the company for many years.

**Manuel F. Garrido**, mining engineer with Cia. Fundidora de Hierro y Acero de Monterrey, S. A., Monterrey, Nuevo Leon, Mexico, died in Piedras Negras, Coahuila, on July 17 at the age of 73 years. He was one of the founders and a director of Mina La Concha Taxco, S. A., Taxco, Guerrero.

**Julius P. Hall**, 54, of Wallace, Idaho, consulting engineer and geologist, died July 12, 1941, after a long illness. Hall came to the Coeur d'Alene district around 1908 and had been consistently active in the district. He was prominent in the formation and promotion of the Four Square Gold Syndicate.

**Clarence Estes Wheelock**, 49, general superintendent for the American Metal Company of Texas at the Presidio mine, Shafter, Texas, died July 14, 1941. Wheelock had been with the company for a number of years, from 1933 until 1935 serving as mine superintendent and later receiving his promotion to general superintendent.

**George I. Taylor**, pioneer mining figure of Mohave County, Arizona, died in King-



man July 13, 1941. Going to that section of the state nearly 40 years ago, he first became interested in metal mining in the Cerbat Mountains. In later years he located the feldspar properties north of Kingman, now operated by the Kingman Feldspar Company.

**Philo E. Seelye**, president and general manager of the Gibbonsville Mining and Exploration Company, died at the property July 11, 1941. He had operated mining properties throughout the northwest, Alaska, and South America. For about 20 years he was superintendent of the Daisy mine in Washington and served in the electrical department of the Bunker Hill and Sullivan mine for 11 years.

**Marvin McGrew Piper**, engineer with Phelps Dodge Corporation, Morenci, Arizona, died July 12, 1941. Following overseas service in the first World War, he was associated with the old United Verde Copper company, after which he spent three years in the employment of a copper company in Chile. Prior to his connection with Phelps Dodge he served as engineer on the Bonneville Dam. He was born in Prescott, Arizona.

**Norman Smith**, 82, retired assayer and prospector and a native of Angels Camp, California, died July 5, 1941, while on a visit to Santa Cruz. For more than 20 years Smith was connected with the chlorination plant of the Utica Mining Company of Angels Camp, after which he began prospecting in the Mother Lode district and located several pockets in Carson Hill, Calaveras County, which netted him over \$20,000. Later he became interested in the Mother Lode Central and Big Springs quartz gold mines near Angels Camp.

**Herman C. Bellinger**, 74, vice-president of the Chile Exploration Company, died at his home near Spokane, Washington, to which he had retired a few months ago. Bellinger, a Saunders gold medalist of 1941, had been vice-president in charge of operations of Chile Exploration since 1920 and is credited with the complete mine electrification and bench mining system at the Chuquicamata mine. He was born in Germany, but came to this country as a young boy. He worked in the August Heinze smelter at Butte, Montana, later going to Trail, British Columbia, then to South America. He became consulting metallurgist for the Guggenheim interests in 1914.

He introduced a liquid oxygen explosive for blasting porphyry rock at Chuquicamata mines in 1926 and in 1935 he was awarded the Order of Merit, grade of night commander, by the president of Chile for his betterment of the economic welfare of the nation's people.

## LEE C. BLACKETT

**LEE C. BLACKETT**, 47 years old, assayer for the West Coast Mines at Winnemucca, Nevada, died August 4, 1941, from injuries received in an automobile accident near Lovelock, Nevada. He was born in Nephi City, Utah, and had been associated with a number of companies in Utah and Arizona before going to the West Coast property.

Among the companies with which he had been connected were the Ray Consolidated Copper Company, Hayden, Arizona, as mill man and chemist; Utah Apex Mining Company, mill shift boss during 1925 and 1926; American Metals Company, Shafter, Texas, 1927 and 1928; Mollin Mining Company, Searchlight, Nevada, as assayer in 1934 and 1935; Backbone Mining Company, Kennett, California, assayer and chemist in 1936; Producers' Mines, Inc., mill superintendent from 1937 to 1940.

## U. S. G. S. WILL MAKE FURTHER TESTS OF BURNS, OREGON, TIN

**IN AN EFFORT** to find the answer to the question, "Is there tin at Burns, Oregon?" Dr. W. C. Mendenhall, director of the United States Geological Survey, has announced that further tests are to be made of the Burns "tin" deposits. Tests also are being made at the present time by the Oregon State Department of Geology and Mineral Industries in cooperation with the Oregon State College.

The added investigation is being made by the U. S. G. S. at the request of Senator R. F. Holman of Oregon, who urged that certain "cyanide fusion" tests be made which, according to the Oregon tin proponents, bring out the metal which otherwise eludes detection.

Dr. Mendenhall informed Senator Holman that his staff will make further cyanide fusion tests as requested, although convinced that "if any tin at all is present, it is in such small quantities as to be insignificant."

Other tests used by the survey are more reliable and would have shown tin if as little as one pound per ton existed, but none of the 16 samples reacted positively, Dr. Mendenhall declared.

The Burns deposits are held by private interests which have been involved in a dispute with federal agencies as to whether or not tin exists.

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**St. Joseph Lead Company** and subsidiaries, 250 Park Avenue, New York City, reported for the six months ended June 30, 1941, a net income of \$2,518,957, equal to \$1.29 a share. This figure compares with \$2,576,820 or \$1.32 a share for the corresponding period in 1940. Allowance was made for depletion and federal income and excess profits taxes. Net sales reached \$21,334,406 for the 1941 period and \$18,184,652 for the previous year. The company operates the Sheepranch mine near Sheepranch, California.

About 1,200 tons of copper ore are mined and milled daily at the property of the **Walker Mining Company**, H. M. Hartmann, manager, Walkermine, California. There is no plan to step up production in the near future. A crew of 500 men is employed. Although the ore contains copper as the principal value, a considerable amount of gold and silver also is present.

A vein of high-grade ore is reported to have been struck at the **Kelly mine** near Hayfork, California. The property is operated by Tom Kelly of Hayfork.

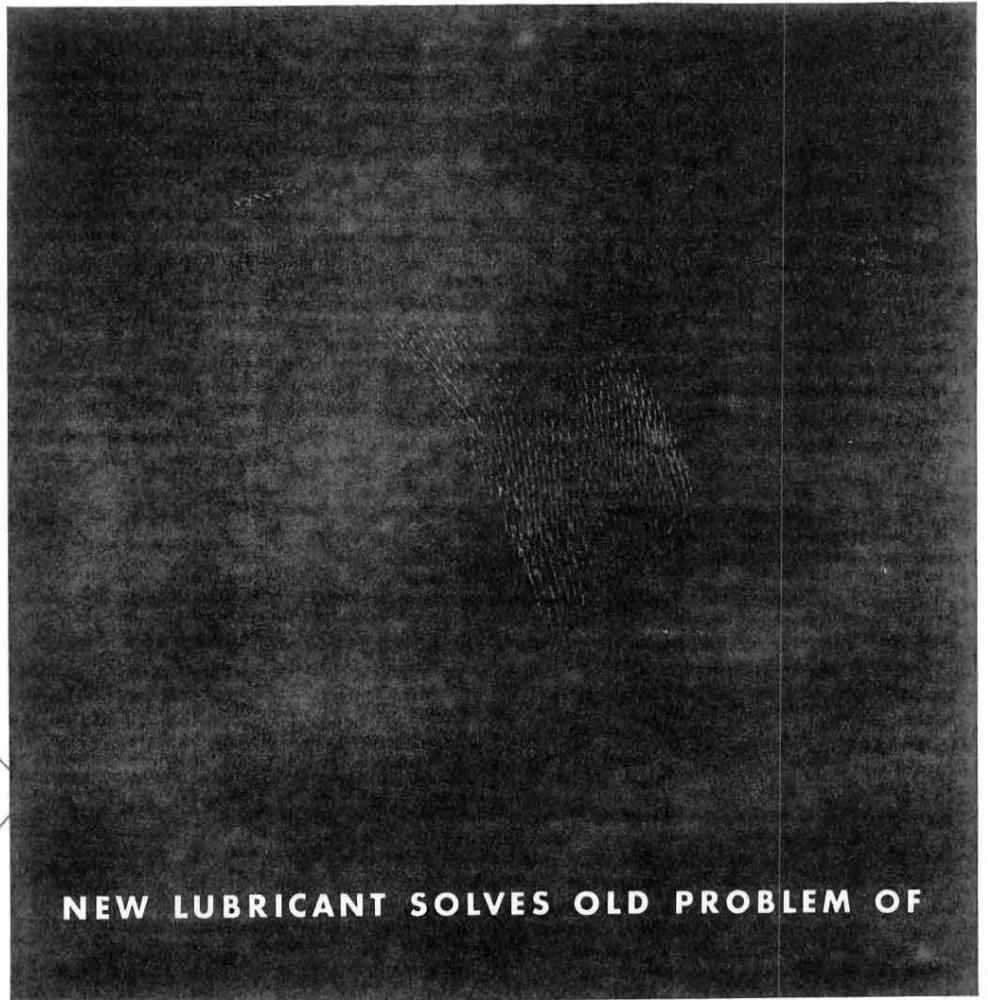
Operations at the **Canyon Creek** placers near Dedrick, California, have ceased for the season, which began December 8. According to George H. Bergin, who, with associates, conducts the operation, results of the work have proved satisfactory.

Construction of a 100-ton ball mill is nearing completion at the **Domingues** gold mine in Mariposa County near Hornitos, California. A transformer is being installed and the property will be supplied with electric power. Ernest Roblin and associates of Mariposa operate the mine.

According to reports, the **Three Kings** mine, formerly known as the Irelan, near Alleghany, California, will be operated by Edward B. Pond, Alleghany. Pond is president of the **Oro Flame Mining Company** which has been working the Oro Flame mine in the same area, and it is understood that work at that property will be stopped. The Three Kings formerly was held by Sierra Kings Mining Company, which suspended operations several months ago.

Around 10 men are employed by the **Caledonia Development Company** in working the gravel banks on the North Yuba River east of Downieville, California. The banks are dynamited and the loosened gravel fed to the trommel using a No. 105 1 1/4-yard Northwest shovel and a bulldozer. Roger E. Jones, Downieville, is president of the company, and John Daniell is in charge of the work at the mine.

**Empire Star Mines Company, Ltd.**, Nevada City, California, has started to drive a tunnel from its **Zeibright** mine at Emigrant Gap to the Omega Diggings above Washington. It is understood that the length will be five or six miles, and construction will be carried on from both ends of the tunnel. Tailings from the Zeibright mill



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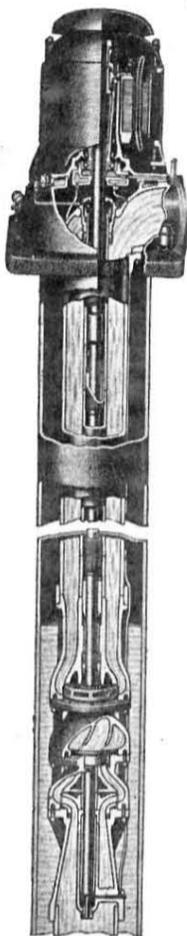
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will be sent through the tunnel to the Omega Diggings and the South Yuba River. A flood a year ago washed out the tailings dam, and since that time the milling plant has been idle. Prior to the forced suspension of operations, 800 tons of gold ore were being handled daily. Although the mill has been closed, development work has been continued steadily. Diamond drilling is being continued from the end of the 6,000-foot crosscut at the Murchie mine to the North Banner mine, a project started about two years ago. It is thought that an extension of 1,500 feet of tunnel will be driven to explore most of the North Banner property. Development of two veins encountered during the work last year has proved disappointing.

The Wolhall Dredging Company has moved from its former site on Cherokee Creek near San Andreas, California, and is working on the Calaveras River. It is expected that one year's work will be provided at the present location. The equipment is all-steel constructed and was designed and built by the two partners of the concern, Edward Wolin and Albert Hall of Elk Grove, California.

Henry and Weaver, dredge operators of Stockton, California, have started operation of their dragline equipment on the John Stringer property three miles north of Milton in Calaveras County, California. This spring the partners worked on the upper part of El Dorado Creek near Mariposa. James H. Henry, 740 West Willow, Stockton, is a member of the firm.

Around 50 tons of ore a day are produced from the California mine about a mile from Grass Valley, California, and operated by Dick Bernard. The ore is hauled to the Spring Hill mill, Grass Valley. A crew of five men is employed. The property, formerly known as the Pittsburgh, is stated to have produced around \$1,000,000 before it was closed in 1920. The vein being mined at present is on the 250-foot level and is linked with the earlier workings.

Walter Jansen, Lincoln, California, is continuing his dredging operation near Lincoln. Equipment includes a mobile dryland plant equipped with a Model 5 Northwest dragline and 1¼-yard Page bucket powered by a Caterpillar Diesel engine. A second unit consists of a 200-yard-per-hour Bodinson dragline dredge with Marion dragline and 85-foot boom, equipped with 2½-yard Esco and Page buckets.

The Golden Center Mining Company is handling its concentrates in its new 30-ton cyanide plant, construction of which was started over a year ago when a strike at the Selby plant held up smelting for over three months. The cyanide unit is located at the Scotia shaft of the Golden Center mine where the ore is reduced in a 150-ton flotation mill. Cooley Butler, 745 Rowan Building, Los Angeles, California, is the owner of the Golden Center.

Development work at the Spring Hill mine, Grass Valley, California, is being concentrated on drifting at the 1,900-foot level. A low-grade ore found at that level is being handled in the mill, which is run

on a two-shift basis. C. C. Cushwa, Box 1001, Grass Valley, is in charge.

A large deposit of manganese ore located at the intersection of Lake, Sonoma, and Mendocino counties, California, is under development by Leroy S. Elliott and his father, Frank L. Elliott, Whispering Pines. A bulldozer is being used to open up the area, known as the Caldwell claim and also the Wild Horse Canyon deposit, which contains a commercial deposit similar to the Caldwell.

A crew of six men is engaged in development work at the Black Hawk tungsten mine near Atolia, California. Work includes drifting east on the 100-foot level at the Brown shaft and following a stringer south of the shaft. It is planned to use dry placer equipment in recovery of the values. The property consists of 105 acres on which considerable work has been done in the past and is being reopened by John J. Nieto and associates of Atolia, California.

A 50 to 60-foot ledge showing free gold has been reported uncovered in development at the Fisher Maiden mine by A. J. and George M. Carey, owners, Nevada City, California. The ore also contains iron, and in some veins zinc and galena are associated with the gold. The property is located 14 miles east of Nevada City on Mt. Oro.

Royalties amounting to \$492 were paid to the city of Redding, California, on returns obtained during the quarter ended June 30, 1941, from the Blue Gravel mine on the west edge of the city. Larson Brothers operate the property, owned by the city of Redding, and pay 10 per cent royalty on all the gold which is taken from the mine.

Central Eureka Mining Company, C. C. Prior, president, 111 Sutter Street, San Francisco, California, has declared a dividend of 8 cents a share, payable August 15, 1941, to stockholders of record July 31. Mining properties are at Sutter Creek, California, and operations are conducted under the direction of James Spiers, superintendent.

Cuban-American Holdings, Ltd., J. J. Kennedy, president, 367 Mills Building, San Francisco, California, has started production at the Bradi-Mason manganese property recently acquired by the mining company in Plumas County. E. L. Reeves is in charge of operations. Western Minerals Associates, 1256 Fulton Street, Fresno, California, has contracted to purchase the first 12,000 tons of the ore, reported to run 45 per cent manganese, and will ship the product to eastern mills. Cuban-American Holdings, Ltd., also has the Jumbo group of six gold claims about eight miles east of Independence, Inyo County, California, which it took over in 1939. The company plans development of a mica deposit at Wells, Nevada.

Permission is reported to have been granted H. C. Wilmot of Sutherlin, Oregon, to build a road into the Webb cinnamon claims in the Siskiyou national forest in northern California just over the line from Josephine County, Oregon. Wilmot is general manager of the Bonanza Mines,

Inc., and it is understood that the option was acquired for the company. David L. Webb of Kerby, Oregon, is the owner of the ground. A small furnace and other equipment have been ordered and the roadway has been surveyed. The Bonanza company's principal operations are at Sutherland where 200 tons of ore are mined and reduced daily by a crew of about 85 men.

**Idaho Maryland Mines Corporation**, Albert Crase, general manager, Grass Valley, California, has declared the regular monthly dividend of 5 cents a share on the capital stock, payable August 21, 1941, to stock of record August 9.

A 3,500-foot tunnel at the **Gibraltar** mine near Downieville, California, is being extended by Joe White in an endeavor to strike the McCrea Channel. The mine is owned by Jacob and Peter Kieffer and M. P. Fisher, who years ago struck gravel at 310 feet. A large mining concern then took over the property and drove the present tunnel in an effort to tap the channel, but the work was left uncompleted when the company went broke.

About 10 men are employed at the **Pride** placer mine in Sierra County, California, where returns from operations are reported satisfactory. A Lorraine-Thew combination dragline and shovel is used in the work in conjunction with a trommel. The ground is being worked by Martin B. Reed, Sierra City, California, and associate, who plan an extended development program. Several million yards of gravel are estimated to be available at the Pride mine. Arthur Pride, Box 135, Sierra City, is owner of the mine.

A crew of 10 men is employed by the **Ancho Erie Mining Company** at its property near Graniteville, Nevada County, California. Drifting is in progress on the main vein, and a ball mill is under construction. Fred Anderson, Grass Valley, California, is in charge of the work. C. A. Helbach, 370 Alta Street, Grass Valley, is president of the company.

The **Kleinsurge** chrome mine 32 miles southwest of Red Bluff, California, will be reopened as soon as the road to the property is completed. The mine comprises 2,000 acres and has not been worked since the last World War, at which time it is said that daily shipments of 500 tons were made. William Recknagel, Red Bluff, has been looking after the property.

The gold gravel washing plant constructed at the Shasta Dam site nearly a year ago is reported to have shown returns which warrant continuing its operation until completion of the dam. The unit was installed in the gravel plant of the **Columbia Construction Company** just outside of Redding, California, to extract the gold values from the sand and gravel used in building the dam. An agreement was made between the construction company and Chris Kutras of Redding whereby the profits were to be divided equally after deducting costs of the operation. About 28 per cent of the 11,000,000 cubic yards of sand and gravel which will be run through the gravel plant will be treated in the gold recovery unit. W. A. Beach, Box 579, Redding, is general superintendent.

R. L. Middleton is day operator and J. J. Shaw is night operator of the gold recovery section of the gravel plant.

The **New Brunswick** mill of **Idaho-Maryland Mines Corporation**, Albert Crase, general manager, Grass Valley, California, has been shut down during construction of the new surface plant. Ore from the upper levels is being hoisted through the old Brunswick shaft and trucked to the Idaho mill. Ore from the 2,300 level and waste from shaft sinking are hauled through one drift to the bottom of the Idaho shaft. The new surface plant under construction includes a 135-foot, all-steel headframe, one 1,000-horsepower motor, Ottumwa double-drum hoist, and one 600-horsepower Nordberg single-drum hoist. The sinking pro-

gram, which has 4,000 feet as the objective, is being continued at the New Brunswick. Fred W. Denton is superintendent of the New Brunswick and Idaho mines.

The **Mountain Copper Company, Ltd.**, William F. Kett, general manager, 351 California Street, San Francisco, California, is maintaining steady production at its Hornet and Iron Mountain mines, Mathe-son, Shasta County, California. The Iron Mountain was worked for many years as a copper property, but is now mined with power shovels for gossan. The Hornet mine produces pyrite ore, which forms a basis for sulphuric acid. The Hornet-Iron Mountain unit has a mill for preparation of pyrites for market and a 600-ton cyanide mill for treating gold-bearing gossan.

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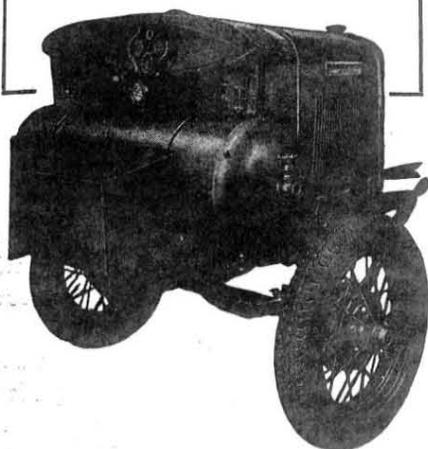
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The **Orolomo Company** is continuing dredging operations in the Missouri Flat district about four miles west of Placerville, California. Equipment includes a tractor for removing brush and vegetation, a Model Number 6 Northwest dragline with 1½-yard bucket, and a Bodinson dryland dredge. Gold is recovered using a trommel screen, mechanical bowls, and amalgam traps. Around 1,400 cubic yards of material are being handled daily. Jerry Bickel, Box 881, Nevada City, is in charge of operations. Upon completion of the dredging project it is planned to restore the area so that it may be used for agricultural purposes.

Construction of a ball mill is proceeding at the **Funny Bug** mine in the Gold Hill district six miles northwest of Placerville, California. The milling plant is expected to handle 10 to 15 tons of ore daily. A large tonnage of ore is stated to be ready for treatment, including 5,000 tons on the dumps, estimated to average over \$8 a ton. The Funny Bug is developed by a 200-foot shaft, and 1,200 feet of drifts have been run. Values are in gold, copper, antimony, and other metals. H. H. Smith, Placerville, is owner and operator of the mine.

**Gold Lake Mines, Inc.**, is reopening the old Willoughby gold mine located in the Gold Valley district near Downieville, California, under the direction of H. Paul Otto, general superintendent. The mine is credited with having produced a large tonnage of profitable gold quartz in the early days of the district. The company will work ledges said to contain ore abandoned by former operators but which could be handled profitably at the present price of gold, in addition to which ground beyond the old workings will be developed.

The **Innis Dredging Company**, A. B. Innis, superintendent, Nevada City, California, is testing gravel at the Malakoff mine near the Bloomfield district, Nevada County, preparatory to dredging. Results of preliminary tests have shown heavy values in several channels near the Yuba River. The company has been working on Light Creek 22 miles west of Greenville in Plumas County, using a 125-yard Bodinson dragline dredge.

Eugene Brown, O'Brien, Oregon, is shipping chrome ore from his **High Plateau** mine in Del Norte County, California. Shipments are made to smelter by way of Grants Pass, Oregon. O'Brien is said to have contracted for between 10,000 and 20,000 tons of the ore to be shipped to an eastern firm.

Stoping and development work are being carried on at the property of the **Original Sixteen-to-One Mine, Inc.**, Alleghany, California, and the 125-ton production of the past several years is being maintained. C. A. Bennett is general superintendent; Willard Van Doren is mine superintendent; and John Hunley is mill superintendent; all of Alleghany.

The **Placer Exploration Company**, Box 498, Chico, California, has purchased three new International Palmer 50 KW Diesel electric generator sets which will be used to furnish power for Operation Number

Three in Trinity County. Other equipment includes a Bodinson dredge with a new Bucyrus-Monighan, five-yard dragline. Walter Laswell, Box 113, Palermo, is superintendent of all operations. The company is a partnership comprised of C. Fred Holmes, Inc., Gerber; J. Craig Hamilton, and J. T. Alm, Chico; and Lionel T. Barnson, Burlingame. Offices of the company are maintained at Room 409, First National Bank Building, Chico. J. Craig Hamilton is manager.

The 600-foot main shaft at the Diltz mine in the Sherlock district 10 miles northeast of Mariposa, California, has been cleaned out, and development work has been started. The property is operated by the **Western Mining Association** which is subleasing it from E. R. Baker, Mariposa.

The **Beaver Dredging Company** is operating a Judson Pacific floating plant and three-yard Lima dragline on Beaver Creek 25 miles south of Yreka, Siskiyou County, California. Leslie G. Allen, Marysville, is in charge of the work.

J. Gowing and associates of Redding, California, have taken over the **Densmore** mine near Columbia, California, and mining and milling are in progress. A new 50-ton cyanide plant was erected last year. A Fairbanks, Alaska, group formerly operated the property from 1939 until February of this year, at which time the mine was shut down because of engineering and legal difficulties.

A 50 KW International-Palmer Diesel electric generator plant has been purchased by the **McCoy and Butler Dredging Company** to be used at its dragline operation near Georgetown, California. Ross J. McCoy is general manager, and Arthur Martin is superintendent.

Edward F. Webber of Medford, Oregon, operating a 200-yard Judson-Pacific dredge powered by a Caterpillar Diesel D13000 engine on Humbug Creek in Siskiyou County, California, is producing in excess of 100 yards an hour. A Lima 850 dragline powered by a Caterpillar D17000 Diesel engine feeds the dredge.

A crew of 36 men is employed at the **Rattlesnake** mine northeast of Downieville, California, owned by Miles Schofield and Wallace Tuttle. An electric generating plant driven by a hydro-turbine has been installed.

The **Plumas Development Company** has unwatered its west Plumas mine and is now engaged in drifting and crosscutting to determine the length and width of a body of mineral-bearing andesite, the area of which had not been learned when the last work was done in 1940. Over 30 tons of ore a day taken from development work are being delivered to a local mill. A crew of 16 men is employed at the present time, and this number is expected to be increased as soon as work is extended into a greater area. E. R. Zeigerst, Crescent Mills, is in charge.

The **Mine Development Company** has reopened the Skylark shaft at the Osdick tungsten claims near Randsburg, Califor-

nia, on which it has an option to purchase from P. J. Osdick, Rt. 1, Highland, California. Reconditioning of the property and machinery installation were started May 13 and a shipment of ore was made to the Atolia mill on July 3. A new shop and office have been built and a 15-horsepower Joshua Hendy hoist and Ingersoll-Rand compressor installed. A crew of 12 men is employed under the direction of James I. Moore, 2697 Arrowhead Avenue, San Bernardino, California. The purchase contract includes eight claims, but at present work will be concentrated on the 170-foot Skylark shaft. The company is headed by H. S. West, Box 776, Atolia, California.

Harry Z. Joyce, Route 1, Box 319, Crescent City, California, plans to work his cinnabar holdings in Del Norte County, California. The property includes the Elk Creek, Joyce silver, Five Little Hills, and Joymill mercury mine, all on the same cinnabar belt.

Production is under way at the property of the **Reese Production Company**, near Glamis, California. Work was started by the company last January and since that time a 100-ton mill has been erected and other improvements have been made. The plant has been operating on tailings. Work is under the direct supervision of Matthew M. Reese, Box 37, Glamis, and a crew of 11 men is employed. C. K. Warrens, 1210 Porter Building, Portland, Oregon, is president of the company. The mine is under lease from the Desert Gold and Aluminum Corporation.

## COLORADO

Equipment is being installed at the **Glen-garry** mines in the Holy Cross district of Eagle County, Colorado, near Redcliff, Colorado, by Thomas E. Knight of Gilman and associates. Knight and his son acquired the property three years ago and started packing ore out by burros. It is an 11 mile trip to the road at Gold Park from where the ore is loaded into trucks for the Leadville smelter. This year Ernest Boettcher of Washington joined the enterprise. The county is rebuilding the Fancy Pass road into this area, the original old wagon road having been obliterated for some time.

A road from Minturn, Colorado, to the **Spread Eagle** mine on Cross Creek in the Holy Cross district of Eagle County is being built by Vernon Mann of North Platte, Nebraska. A 25-ton ball mill is being installed.

Also in the Holy Cross district of Eagle County, Colorado, is the **Hunkydory** mine, owned and operated by E. M. Thomson of Gilman. The mine is producing, with ore values in gold, silver, lead, and copper.

According to reports, Frank L. Ross, 301 First National Bank Building, Denver, Colorado, has taken over the **Galdey Boy**

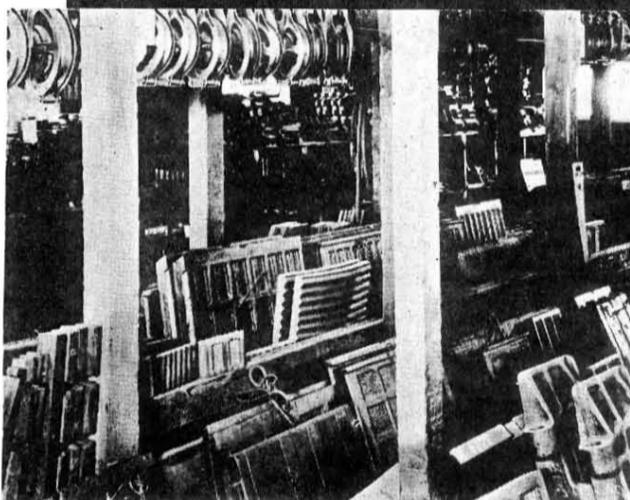
group of 123 tungsten claims from Jack Rutheford of Durango. The property is on Red Mountain No. 3 near Silverton in San Miguel County and will be operated on a royalty basis.

The **Clear Creek - Gilpin Company**, J. Price Briscoe of Idaho Springs, Colorado, president and general manager, plans to placer the property across the creek from its 75-ton mill where the old Jackson and Hudson mills stood some years ago. A power shovel will load the gravel into trucks and haul it to a washing screen. Concentrates from this operation will be treated in the company's mill where some special equipment is being designed for the purpose. Luke Smith, contractor, and Bill Kirkling, both of Denver, will help in the placer work. When this work is completed, the company will build a tailings dam on the ground as the storage space now being used is too limited. The Clear Creek-Gilpin mill is being operated on a 24-hour schedule, treating Monmouth-Kansas ore which is mined in Gilpin County, and handled through the Argo tunnel. Meanwhile, the ore bins are being filled by small operators in the district. Storage space at the mill now accommodates over 500 tons. Collins and associates operate the Monmouth-Kansas property under the name of **Union Carbon Mines, Inc.**, of which Collins is president.

Thomas G. Stevens of Everett, Washington, has taken a lease on the old smelter at Salida, Colorado, and is working the dumps. Stevens formerly worked the

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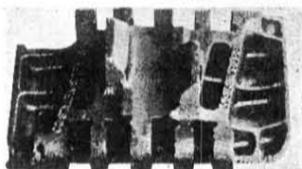


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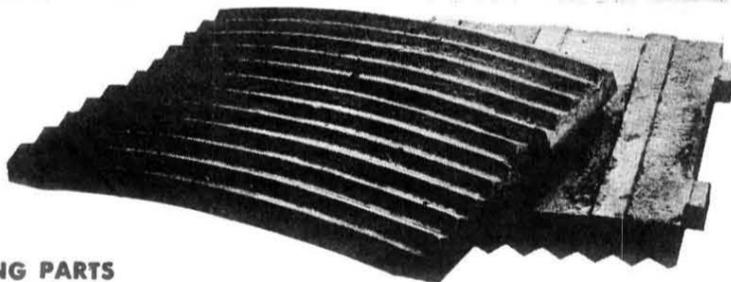
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Diesel power and the Pelton wheel will generate power for camp and furnish supplementary power for the mine and mill if necessary. A 12-man bunkhouse has been completed. Principal values are in zinc with a substantial amount of lead and some gold. S. V. Cravens of Portland is superintendent and making headquarters at Northport. Other members of the company include John L. Magney, 3924 North Washington Street, Spokane, and Harvey Stone of Portland.

According to reports, the Pateros Mining Syndicate, which holds the Sullivan mine five miles north of Pateros, Washington, is continuing development of an ore body recently opened on the main tunnel level. Principal values are in gold, with some copper and silver. David E. Watson is vice-president of the concern and Roy W. Key is secretary-treasurer.

Sven A. Anderson of Bonners Ferry, Idaho, recently acquired the Shoemaker group of four claims in Stevens County 10 miles east of Colville. Shoemaker, the former owner, has moved to Golden, Idaho. Anderson is said to have paid \$500 for the mine and to have made a net profit of twice that amount from the first two shipments to the Hercules mill near Wallace, Idaho. Values are in zinc-lead with some silver.

A 25-ton milling plant is under construction by the Silver King Mining Company, J. E. Lindston of Conconully, Washington, manager. The company holds 13 claims of the Hargrove property near Conconully.

## WYOMING

The JBC Mining Company is reported to have showings of manganese, nickel, beryllium, and tin in its properties in the Laramie Mountains near Wheatland, Wyoming. The company, N. E. Judd of Wheatland, trustee, is processing vermiculite in its own plant near Wheatland. Judd states the manganese claims have been developed, but the other properties are still in the prospect stage.

## MACHINERY MANUFACTURERS RECEIVE LIMITED PRIORITY

MANUFACTURERS of mining equipment have been given a preference rating to facilitate production of machinery which is essential to the defense program. An A-3 priority rating is provided for all deliveries of materials which appear on the priorities critical list, unless a higher preference rating has been given to some particular item, in which case the higher rating may be applied.

The order, as issued by the Priorities Division of the Office of Production Management, is applicable to equipment and material entering directly or indirectly, at any stage, into construction of mining machinery necessary for underground and open-cut production of coal or metal ores, or for the machinery and equipment es-

sential for the beneficiation and preparation for shipment of the coal and metalliferous materials.

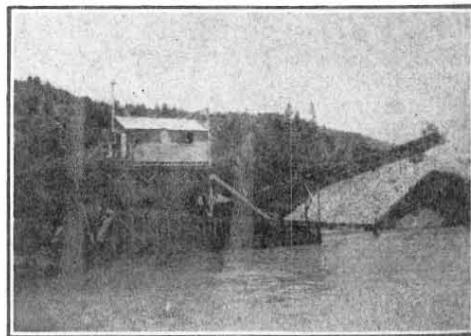
In addition, a general priority order covering current repair and maintenance items needed to maintain uninterrupted production, is to be issued shortly. It is understood that this order will apply to all branches of mining and quarrying, including non-metallic minerals.

## DREDGE BUILT BY OKORO MINES SHOWS EFFICIENT OPERATION

OKORO MINES, INC., has been handling an average of 2,000 cubic yards a day since starting operations July 11 near Callahan in Siskiyou County, California. According to L. C. Rood, engineer for the company, the sluices are showing no sign of overloading and it is expected that around 2,500 yards a day can be handled after making a few minor changes in the application of water to the sluices. About 2,500 gallons of water per minute are being used at present.

The boat was built by the company from assembled parts bought here and there wherever they could be obtained and its operation is reported to be proving efficient and satisfactory.

Work is conducted by standard dragline dredge method. The only difference between the equipment and the usual outfit of the same capacity is that, due to the rather deep ground which is around 35 feet in the deeper channels after some stripping, the dragline and stacker on the boat are larger than usual. The dragline is a 1201 Lima using a 2 1/2-yard Esco bucket on an 80-foot boom, and the washer, a combination of Bodinson and Hickinbotham units, has a 90-foot stacker. The 34 by 52 by 4-foot wooden hull was built at the site, and is unusually long to balance the stacker. The hull consists of six-inch bottom and sides with internal wooden trussing every four feet in both length and width, with additional steel rod and cable trussing. There are bulkheads fore and aft. Rood states that it is a very good substitute for steel pontoons and costs only about one-quarter as much. The hull was built in one week by one daily shift of nine men.



The boat being used by Okoro Mines, Inc., near Callahan, California. The upper deck trusses and steel gantry were built at the site by the company from odds and ends of structural steel. The lower deck and stacker will be housed in and heated by winter. Note that tailings are stacked nearly 30 feet above the water line.

Mining Journal 1941

12-15-91 A 170

**BIG WEDGE MINE STARTS  
400-TON EXPANDED MILL**

**BIG WEDGE MINING COMPANY**, Baguio, Mountain Province, Philippine Islands, formally opened its enlarged 400-ton straight cyanidation mill on July 1, 1941. The Big Wedge property is operated by the Atok Gold Mining Company.

Mill Superintendent Walter Neal stated that the mill extension was completed by the local staff with the addition of only about 100 unskilled and semi-skilled Filipino laborers. Excavations were made with a hydraulic monitor.

The new unit of the Big Wedge mill, according to Neal, is practically a duplicate of the original unit, a straight cyanide plant of 150 tons daily capacity. The discovery of high-grade copper-gold ores on the Broadway and Frank veins demanded the conversion of the original plant to a combination flotation-cyanide plant with increased capacity to 200 tons per day, this being effected by minor changes in the flowsheet.

During 1940, developments on the Keystone vein resulted in a decision to recon-vert the mill to straight cyanidation and to increase to 400 tons daily capacity. The high and increasing costs of pumping out the Broadway vein and the increasing difficulty and expense of shipping concentrate to the United States accentuated the advantages of confining mining to the clean cyanide ores of the Keystone vein. F. B. Morehouse, general superintendent, was quoted as reporting likely ore reserves of over 600,000 tons valued at more than \$20,000,000 as a result of discoveries in the Keystone vein system.

Because of the similarity between the new mill design and the original cyanide plant, except for the larger units in the ball mill section, it was decided to keep the two units as separate plants, thus providing for further expansion on the basis of a series of 200-ton units.

**BULLETIN ON ATOLIA TUNGSTEN  
DEPOSITS IS PUBLISHED**

**A BULLETIN** on the tungsten deposits of the Atolia section in San Bernardino and Kern counties has been issued by the United States Geological Survey. The publication is a result of a thorough government investigation from November 26, 1939, to March 3, 1940, conducted by Dr. Dwight M. Lemmon and John V. N. Dorr, assisted by MacKenzie Gordon, Jr., for the federal strategic minerals investigation.

Accompanying the bulletin are three large maps showing the geology of the district, plan and sections of the principal mines, and the claims of the district. The history, geology, lode deposits, placer deposits, mines, miscellaneous prospects, and the reserves of the section all are discussed in detail in the writing. Much of the material is dealt with in terms best understood by the miner and student of geology; however, the layman interested in the history and future development of the industry also will find the writing of interest.

The bulletin may be obtained from the Superintendent of Documents, Washington, D. C., at a cost of 75 cents.

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## NICKEL NEAR RIDDLE, OREGON, INVESTIGATED BY SURVEY

AS A PART of the investigation of domestic deposits of strategic minerals by the Geological Survey, two of the survey's geologists, W. T. Pecora and S. W. Hobbs, have examined a nickel deposit about five miles northwest of Riddle, Douglas County, Oregon. The town is 230 miles south of Portland by highway and is on the Southern Pacific railroad.

The nickel deposit is a rather irregular blanket on the western, southern, and southeastern slopes of Nickel Mountain. It was formed as a result of the concentration by weathering agencies of the small quantities of nickel originally present in the silicate minerals that compose the peridotite underlying the mountain. The peridotite is a dark igneous rock made up largely of the minerals olivine and pyroxene; it is commonly altered to serpentine along its contact with the sandstones and greenstones into which it was intruded. The concentrations of nickel, however, appear to be limited to the ores underlain by the peridotite and not to overlie the serpentinized masses.

The nickel-bearing blanket is best developed on terraces and gentle slopes above an altitude of 2,000 feet, where its thickness reaches a maximum of 60 to 70 feet. Within the blanket, nickel is present chiefly in the mineral garnierite, a hydrous silicate of nickel and magnesium. The garnierite varies in nickel content, the darker varieties having the larger amounts. Three

layers or zones may be distinguished in the blanket; a thin upper brick-red soil layer at the surface, which is relatively low in nickel; a thick intermediate layer, richer in nickel and composed of limonite cut by a network of quartz and garnierite veinlets; and a bottom layer in which thin veinlets of quartz and garnierite occur in unaltered peridotite. The network of veinlets in the second and third layers is thought to have formed along the blocky jointing in the unaltered peridotite.

Pecora and Hobbs believe that the concentration of the nickel originally present in the peridotite, which is in the order of 0.2 per cent, into the higher grade garnierite-bearing material of the blanket deposit was the result of two successive long-continued climatic cycles. During the earlier cycle the minerals of the peridotite were decomposed, forming an aggregate of hydrous iron oxides and nickel-poor garnierite. The more recent temperate and humid cycle resulted in the solution of the nickel-poor garnierite and its redistribution in veinlets as quartz and nickel-rich garnierite.

No comprehensive sampling program of the entire deposit has been undertaken; such sampling as has been done indicates that the great bulk of the deposit contains from 1 to 2 per cent of nickel and a much smaller part contains from 2 to 3 per cent of nickel. Should emergency conditions result in a substantially higher price for nickel or stimulate the development of a practicable method of treatment for low-

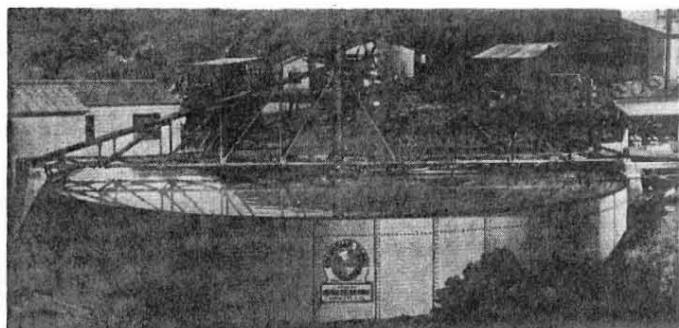
grade nickel silicate ores, the deposits on Nickel Mountain would provide a reserve of some 6,000,000 tons of material with an average nickel content of 1 to 2 per cent and in addition possibly 250,000 to 300,000 tons that contain 2 to 3 per cent nickel, of which 80,000 tons in the vicinity of the discovery workings can be regarded as proved ore.

## CLIMAX MOLYBDENUM COMPANY IS WORKING AT NEAR CAPACITY

CLIMAX MOLYBDENUM COMPANY of Climax, Colorado, largest molybdenum producer in the world, is reported to be working at near capacity, filling defense orders. It is understood that the company recently established a new monthly output figure, turning out contained molybdenum at the rate of more than 31,000,000 pounds annually, as compared with 23,000,000 pounds produced in 1940 and 22,000,000 in 1939.

The company has maintained a large stockpile and has been able to increase it, despite recent heavy demands for the metal. There has been some reduction of the company's accumulation of finished goods, it is stated, but completion of new ore roasting facilities at the Pennsylvania plant will expand finishing capacity considerably. One roaster already has been completed and another is expected to go into operation before September.

Although sales in the United States are attaining new high records, it is not believed that total sales this year will exceed those of 1939 when foreign outlets



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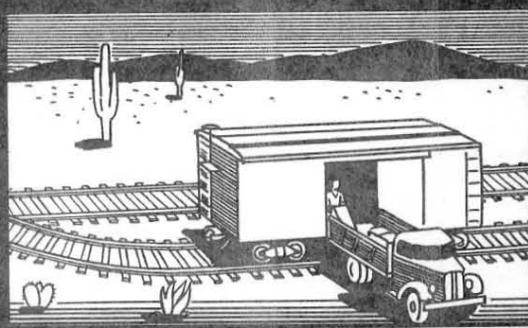
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urnished the major part of the company's business. Sales last year amounted to 5,300,000 pounds, of which probably 12,000,000 to 13,000,000 pounds were sold in this country. However, present defense plans indicate a very substantial demand for molybdenum over the next year or so, and ultimately may involve the industry's full capacity.

For the quarter ended June 30, 1941, Climax reported a profit of \$2,130,101 after provision for depletion, depreciation, and federal taxes under existing statutes, which is equivalent to 84 cents a share on 2,520,000 shares of capital stock. This compares with \$1,747,510, or 69 cents a share in the June quarter of 1940. For the quarter ended March 31, 1941, the company reported a net profit of \$1,844,925 or 73 cents a share.

**APPROVAL EXPECTED FOR LAS VEGAS MAGNESIUM PLANT**

The Defense Plant Corporation, a subsidiary of the RFC, has before it for approval the plans for the construction of a magnesium plant near Las Vegas, Nevada, and early action on the proposal is expected. A letter from Senator Patrick McCarran of Nevada outlined the project as follows:

"According to present estimates three units are to be constructed, a main plant at Las Vegas, Nevada, and two auxiliary plants, one at Gabbs, Nevada, and the other at Mead, Nevada, at an estimated cost of \$64,000,000. Gabbs is located about 50 miles east of Fallon, Nevada, on U. S. Highway 50, and approximately 40 miles south on Nevada 23. Mead is located about 40 miles northeast of Las Vegas on Lake Mead. The area of mining operations will include some 4,000 acres of magnesite development near Luning, Nevada, and 300 acres of salt property near Boulder Lake. At the Las Vegas plant it is estimated from 3,500 to 4,000 men will be employed, and that a new community of some 1,000 homes will be constructed on the site of the plant."

Already operating in the Luning area are the Barium Products Company, Ltd., which apparently is the operator for Westvaco Chlorine Products Corporation of Newark, California, and the Permanente Corporation of San Francisco; and the Basic Ores, Inc., of Cleveland, Ohio, which ships ore to the company plant at Maple Grove, Ohio.

If present plans are approved, the new plant will be built by the Defense Plant Corporation, while Basic Magnesium, Inc., Hanna Building, Cleveland, Ohio, will be the agent for the erection and management.

**PHELPS DODGE SETS SAFETY RECORD AT BISBEE, ARIZONA**

The Porphyry Division of the Copper Queen branch of Phelps Dodge Corporation at Bisbee, Arizona, has established an outstanding safety record.

According to a report of H. C. Henrie, general superintendent, employes of that division, numbering around 70 men, worked for two years, two months, and 22 days without an accident.

**BOULDER MANGANESE PLANT IS NEARING COMPLETION**

CONSTRUCTION of the new manganese plant at Boulder Dam is progressing rapidly and the buildings are being completed and equipment installed. The work is being done by the Galigher Company of Salt Lake City, Utah, which received the contract from the United States Bureau of Mines. J. H. Wattson, Galigher representative, is supervising the work at Boulder City, Nevada.

The plant, which is rated as a 50-ton pilot operation, will provide facilities for testing ores by four different methods, each of which is rated at 50 tons a day. It is a much more comprehensive set-up than the electrolytic plant which has been in operation at the U. S. Bureau of Mines station at Boulder for some time.

The plant will consist of four main buildings which will handle the various test operations to be undertaken. There will be a crushing plant, a roasting building, at one end of which will be a leaching plant, a mill building which will provide facilities for testing by standard milling practice and which will include flotation equipment, and an electrolytic plant.

All buildings will be connected by an elaborate conveying system from the crusher so as to permit the use of any individual method or combination of methods of treatment. The system is so designed that it can direct the ore to any desired operations in the system and by-pass the others.

Operation of the new unit by the U. S. Bureau of Mines is expected to result in new developments and marked improvement in the beneficiation of the low-grade ores which occur abundantly in the area.

**HARSHAW CHEMICAL COMPANY PURCHASES MENARDI METALS**

THE plant and business of Menardi Metals Company in El Segundo, California, has been purchased by Harshaw Chemical Company of Cleveland, Ohio, and will be known as Menardi Metals Division, Harshaw Chemical Company.

The chemical company manufactures antimony oxide and various antimonial products used by the paint trade and in the ceramics industry. The new organization will purchase antimony ore, and, by means of a recently installed electrolytic process, will be able to handle gold and silver ores containing antimony.

According to H. B. Menardi, 802 Bartlett Building, Los Angeles, manager of the new concern, this process should benefit southwest mining operators, who until now have had to ship this type of ore to lead smelters and were penalized because of the antimony content. The Menardi-Harshaw concern, in accepting such ores, will pay for the antimony as well as for the gold and silver.

Menardi Metals, established as an ore reduction plant at Vernon, California, several years, was moved early this year to El Segundo where its facilities were expanded. In the beginning it handled

Diagram illustrating the use of Tampcot in a bore hole. Labels include: ROCK OR ORE, BORE HOLE, TAMPCOT PLUGS, FUSE OR WIRES, EXPLOSIVE DETONATOR. The diagram shows a cylindrical Tampcot plug inserted into a hole, with wires leading to an explosive detonator. The text reads: "HOW TO BREAK MORE ROCK WITH TAMPCOT\*"

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For Tampcot gives all holes of a round the same breaking effect as a wet lifter—causes complete, efficient detonation. Yet Tampcot actually costs you less than 1¢ per hole. Give your powder MORE POWER! Every time you order powder, order Tampcot too!

**NATIONAL AUTOMOTIVE FIBRES, INC. OAKLAND DIVISION**  
Dept. M 5, Oakland, California

\*Tampcot is the new improved Calcot Tamping

Advertisement for TAMPCOT. Text: "CHEAPER THAN DIRT", "TAMPCOT THE MODERN EFFICIENT STEMMING". The image shows a cylindrical container of Tampcot material.



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chiefly livingstonite concentrates from southern Mexico, and under the new management will continue to import this product.

### CALIFORNIA CHROME DISTRICT WILL HAVE ELECTRIC POWER

**E**LECTRIC power will be brought in to the Forest Hill district of Placer County, California, following approval of an expenditure of \$37,000 by the Pacific Gas and Electric Company in extending a 61,000-foot line across the American River from Weimar to the divide.

The impetus given to chrome mining in the district through demands of the national defense program is chiefly instrumental in bringing electric power to the isolated region. More than 123 individuals and firms are said to have signed a petition asking for the power and rights-of-way agreements are being signed.

The Forest Hill country has been yielding 2,500 tons monthly of chrome ore. Western Mineral Associates of Fresno and Ohio Ferro Alloys of Cleveland have been making shipments from this section.

### HOW A COPPER SHORTAGE CAN BE AVOIDED

(Continued from Page 8)

Although the survey dealt primarily with the small mines, it pointed out that Inspiration Consolidated Copper Company, one of the major producers, could step up its production 30,000,000 pounds a year by a capital expenditure that was estimated at \$500,000. If a 14-cent price is provided, Inspiration could work on ore that cannot be handled at 12 cents.

Many of the major producers of the nation could expand their production tremendously under the right conditions, but this likewise would call for a great capital investment. The problems of the large mines and the small mines are fundamentally the same. The difference is a matter of degree.

It is possible for the major producers who are now working only two productive shifts to operate three productive shifts daily. Moreover, they could work an extra day a week. Both of these practices are uneconomic, however, and not alone add to the costs of the copper derived from the extra time, but add to the costs of the regular production as well. Nevertheless, because of the heavy demand, some of the mines are experimenting with the three productive shifts although none have given serious thought to a seven-day week because it has greater cost complications.

Production from those mines that could be worked on a three-shift basis probably could be stepped up about 20 per cent as against the 33 1/4 per cent extra time put in and it is apparent that an increased price of copper would be justified to defray the greater expense and impaired efficiency. Some mines, of course, would have mechanical and physical limitations which would make continuous operations so uneconomical that an increase in the price of the metal would not compensate for the added cost.

The other obvious method by which the large operators could expand their production is to increase their capacity and this, too, presents some serious problems. Probably the best opportunity for expansion in this manner is to be found in the open-pit mines because at those properties little of a development nature would be required — certainly nothing like the amounts that would be necessary underground where larger adits might even have to be provided.

The principal requirements at the open-pit mines would be more rolling stock and shovels for removal of ore from the pits, increased reduction capacity, and more water. Water is one of the most serious problems of all and it might be necessary to pipe it for long distances in order to obtain a supply suitable for milling.

Water problems can be solved in every instance, of course, but to do so might involve large capital expenditures. Pipe lines would have to be run over distances of 50 miles or more in some cases, but once a large supply of water is obtained a large expansion in concentrating capacity and greater production at a number of properties would be possible.

The temporary nature of these facilities must be remembered. They are needed only for the period of the emergency and the responsibility for providing them is national.

**F**ORTUNATELY, the capacity of the copper smelters and refineries in the United States appears to be ample. In some instances it might be necessary to enlarge plants, but the problem is not nearly as serious as are the questions of mining and concentrating the ores.

Smelters in the southwest could recover easily an additional 20,000,000 pounds of copper monthly and this tonnage might be boosted materially if ores meeting the metallurgical requirements of the smelters could be obtained so it would not be necessary to purchase fluxing ores. Furthermore, if additional capacity is needed it undoubtedly will be provided.

In regard to refining capacity, the American Bureau of Metal Statistics reported that United States capacity at the end of 1940 was 1,549,000 tons yearly while South American capacity was placed at 420,000 tons. This makes a total of 1,969,000 tons which appears to be ample; certainly it is more than enough until mining operations are expanded materially.

Mines throughout the nation could increase their output tremendously under the right conditions. If given the opportunity they can produce all the copper that is needed. However, they have been geared to a peace-time demand and naturally are not prepared for the tremendous needs of a mechanized war. To prepare them is going to take time and money and some encouragement.

It's up to the government, not to the mines. The mines can get the job done if permitted to do so. But it's going to take a more liberal attitude toward the mines and a loosening of some of the clamps that have been screwed down so tight that expansion is virtually an impossibility.

WILLIAM CARNIE, JR.,\* describes

## Revival of Historic La Porte District

**L**ARGE-SCALE expansion of operations throughout the historic La Porte area of California may soon bring it back into the western mining spotlight.

Most spectacular new development near this once bustling old mining camp is at the Poverty Hill property where crews have completed construction of a large dredge to mine the rich channel that was formerly worked by hydraulic methods. A 16-mile power line has been run to the property from Pike, Sierra County, to furnish electricity, and operations are scheduled to be going full speed early in September.

The new gold boat is equipped with a two-yard bucket line and will handle 5,000 cubic yards of gravel daily. The channel will be worked to an average depth of 80 feet, but the top 40 feet will be stripped, leaving only the rich lower strata to be worked by the dredge.

Operations are being carried on by the Poverty Hill Properties, a limited partnership with Walter W. Johnson, 910 Bal-four Building, San Francisco, as general manager. Stripping is being done under contract by the Nevada Sand and Rock Company, Reno, Nevada, which has two tandem carryalls and two turnpoles on the job.

Stripping crews are handling 6,000 cubic yards of gravel a day to keep well ahead of the boat, and churn drill tests are being made at regular intervals to keep the pay channel in sight. Sufficient gravel is believed available to keep the dredge busy for from six to eight years.

Plans for construction of the gold boat were first laid by company officials last May and building of the dredge was started June 1. For two years prior to that time, the present operators worked the mine on a commercial basis hydraulically. Army Adams, 714 West Main Street, Grass Valley, is superintendent.

**A**T THE Gibsonville mine, seven miles north of La Porte, crews under the direction of Superintendent Martin B. Turner are busy on an expansion program that will make that property one of the largest hydraulic operations in California next season.

The Gibsonville Mining Company, which experienced one of the most successful seasons in its history this year, has mapped plans for the use of four monitors next season. The breasts have been opened square for 600 feet to assure ample room for the large scale operations and a 15-man crew is now busy developing adequate water resources.

An 18-acre lake will be tapped with a trunk and present plans call for construction of another 35-acre storage reservoir.

\*Roseville, California.

The Poverty Hill, Gibsonville, Scales, Holland Flat, Pioneer, Woods, Blue Gravel, and several small drift mines in the La Porte, California, area are expanding their activities or carrying on development programs. A material increase in the gold output of the region is indicated.

The property was worked this year with two monitors, one 15-inch and one 11-inch.

Resumption of large-scale operations is planned for the Scales hydraulic mine, recently taken over by the Shattuck Denn Mining Corporation, operators of an important copper property near Bisbee, Arizona; and the Holland Flat Mining Company, which has just completed a highly successful season, is preparing for expansion of operations next season. Sixteen men are employed in repair and clean-up work at the latter property.

Operators of the Pioneer mine at Grass Flat have employed an eight-man crew to recondition that old property with a view to placing it on production next spring. In addition to reconditioning the pit, seven miles of ditches will be cleared to bring in water for the monitor.

Several small drift mines in the La Porte area are also contributing to the revived activity. Superintendent Ray Morrison has a six-man crew engaged in sinking a test shaft at the Woods mine near Little Grass Valley, four miles north of the town. Future development of the mine hinges on

values encountered when the pay channel has been reached.

At the Blue Gravel drift mine, 12 miles southeast of La Porte, 15 men are employed running a 3,000-foot tunnel to contact the pay channel, which has already been checked by drill tests. Stanley Cummings is superintendent.

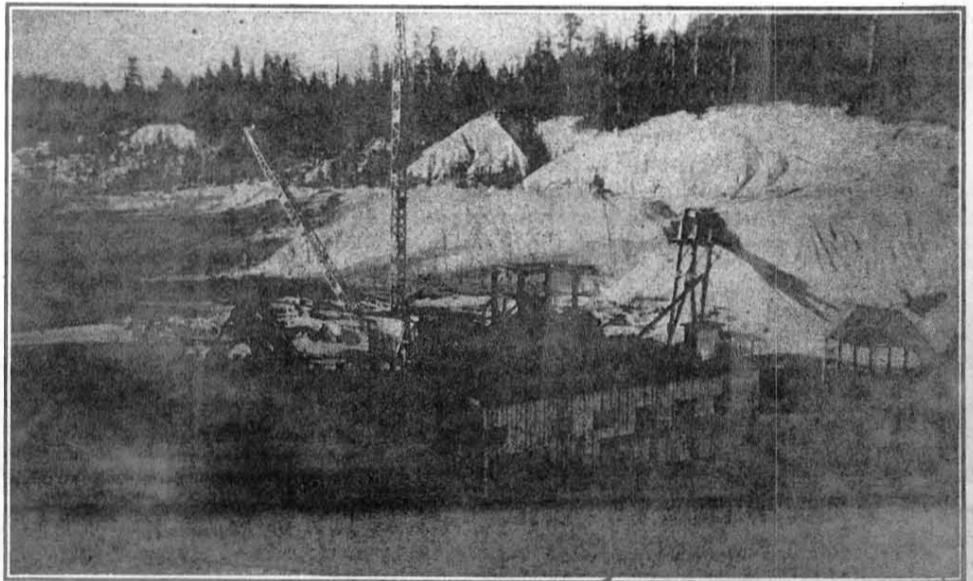
As falling water levels in the rivers and creeks brought hydraulicking to a halt for the summer last month, the annual influx of snipers started. More than 150 men, working singly and in pairs—using "long Toms," small sluices, and pump outfits—are now working throughout the district.

### GOLD RECOVERY HAS YIELDED \$94,520 AT FRIANT DAM SITE

**G**OLD recovery project, started in August 1940 at the Friant Dam site in California, had yielded \$94,520 up to June 30 of the current year, and \$37,993 has been turned over to the government as its share.

The gold was extracted from the sand, gravel, and rock being excavated about two miles downstream from the dam for mixture with cement to produce concrete. Expenses of recovering the metal were \$18,534, including the cost of constructing the plant. In accordance with an agreement with the contractor of the dam, half the net proceeds are turned over to the Central Valley Bureau of Reclamation.

Friant Dam, said to be fourth in size in the world, is being constructed on the San Joaquin River in the south central part of Central Valley, California, in order to save a \$2,000,000,000 agricultural development.



The large dredge at the Poverty Hill mine near La Porte, California, which has just been completed. The boat is equipped with two-yard buckets and is geared to handle 5,000 cubic yards of gravel daily.

**FRENCH BAR PLACER SCENE OF HYDRAULIC MINING ACTIVITY**

HYDRAULIC mining has been resumed at the French Bar placer near Belden, California, and a large yardage of gold gravel is handled daily. The mine is located on the North Fork of the Feather river where the stream has been diverted temporarily from its channel by a 900-foot dam, making it possible to work about 1,000 feet of the river bed. Equipment includes a 10-ton power derrick with 60-foot mast and boom, 16-inch gravel flume with three-inch block riffles, a 10-inch centrifugal pump, and another small pump.

Active work was started at the location about a year ago under the direction of C. A. Cooley, Belden. The operation is backed by Rosene Brothers of Tacoma, Washington.

**SNYDER MAKES PROPOSALS FOR BOOSTING ZINC OUTPUT**

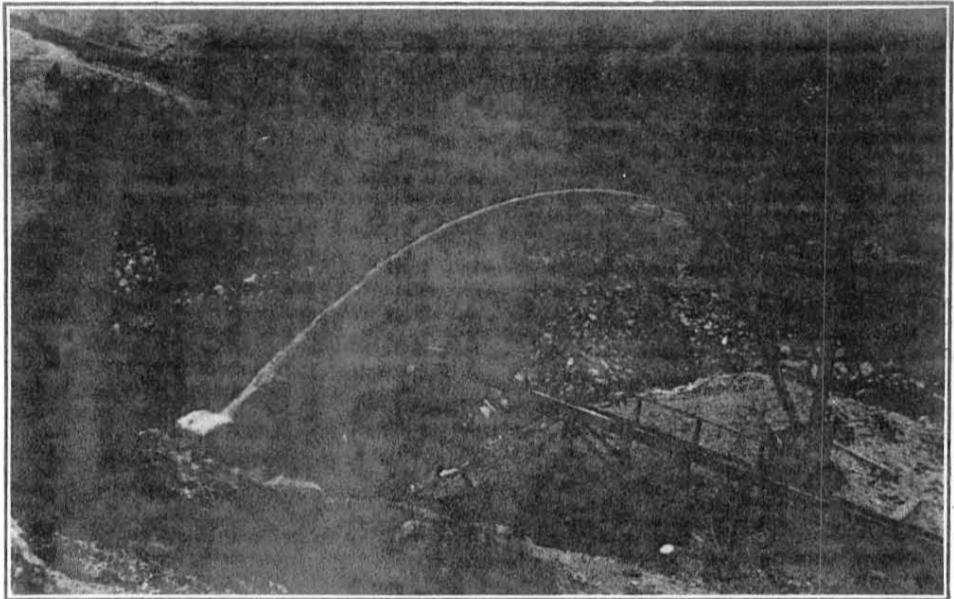
REVISED tax and labor laws, together with a higher tariff, would do more to increase the production of zinc in the United States than either an advance in the price or a direct government subsidy, according to E. H. Snyder, vice-president and general manager of the Combined Metals Reduction Company.

Snyder stated in a letter to E. H. Sumner of the OPACS that he believed an overall increase of 10 per cent to 15 per cent in production could be had from what is now marginal ore by a price increase of from 1 to 2 cents a pound. However, more important gains could be realized by modification of the excess profits tax law, amendment of the maximum hours provision of the Fair Labor Standards Act, and an increase in the tariff on zinc.

During the long, lean period prior to the outbreak of the war, a substantial portion of the industry lived on its capital; Snyder asserted, with the result that funds which might have been available for exploration and expansion have been exhausted. Further liquidation and curtailment of production was caused by the reduction of the tariff, effective January 1, 1939.

"Although the present price of zinc has greatly improved conditions in the industry," he explained, "exploration programs are far too limited to bring out a substantial increase in production from other established mines and prospects over that now had for the present price of 7.25 cents a pound." He stated that mining "risk capital" cannot absorb the losses of the many unsuccessful exploration programs that are incident to finding and developing new ore bodies if the profits from successful developments are taxed on the basis of existing and proposed laws.

Snyder suggested that those portions of the profits of any taxpayer made from the mining of zinc and lead during the tax year in excess of 1940 output be exempted from the excess profits tax and recommended that the profits on the excess lead and zinc be calculated on a pro rata basis with all the zinc and lead produced by the taxpayer during the tax year.



Hydraulic mining at the French Bar placer located two miles above Belden, California.

"Generally speaking, I do not believe many metal miners, whose incomes are already subject to the upper rates of the proposed excess profits tax law, will be willing to risk substantial capital for either exploration or expansion under the proposed excess profits tax law," Snyder said.

"Assuming that the high rate of production had in 1940 from domestic ores represents a fair average of what reasonably can be expected for the next three years at present prices, it appears the waiving of the excess profits tax on the profits from the production of lead and zinc in excess of the taxpayer's 1940 production would result in the government's obtaining additional revenue equivalent to the normal tax of 24 per cent plus the proposed surtax of 6 per cent of the profits that would be made on the increase in the production of lead and zinc which would result from such a change in the law."

The wage and hour law has forced several of the large mines to go on a five-day week, Snyder said, because the employment of men six shifts per week is uneconomical and more costly, and the "stagger" system involving rotation as to working places is impracticable.

"The solution for this problem is amendment of the maximum hours provision of the so-called fair labor standards act to permit 48 hours' employment a week in the metal mining industry without the penalty of 50 per cent extra compensation for time worked in excess of 40 hours a week.

"I estimate this change would result in the following improvements: Increase the production of lead and zinc at the mines

now working only five days per week by at least 10 per cent; increase the yearly earnings of the employes by approximately \$335 per year based on present labor base of \$6.45 per shift; and decreased labor strife."

Concerning the zinc tariff, Snyder declared:

"The management of the domestic zinc mining industry generally believes foreign competition after the war probably will shut down a very large portion (in my opinion in excess of two-thirds) of the domestic industry if the present tariff on zinc is not increased and for that reason that long range projects for the expansion of the industry are not justified.

"To counteract now the adverse effect on production of said belief and to reduce the severity of the post-war adjustment on the industry, its employes and the mining communities, I suggest the state department arrange to cancel the provisions of the Canadian agreement relating to zinc and promulgate immediately thereafter tariff regulation to provide a sliding scale duty on slab zinc equivalent to the amount by which the London price is less than 6 cents per pound with a minimum of 1.4 cents per pound and a maximum of 2.5 cents per pound, and a similar sliding scale duty on zinc in ore with a minimum of 1.2 cents per pound, and a maximum of 2.25 cents per pound."

**NO TAX ON CUSTOM ORES RULED BY IDAHO STATE**

BERT H. MILLER, attorney general of Idaho, has ruled that the 3 per cent mine license tax does not apply to companies or individuals engaged in operating milling plants for the treatment of custom ores. The tax, Miller advised, "is for the privilege of mining or extracting ores. There is nothing in the law to suggest that the tax should be paid repeatedly as such ore is carried through each process in its treatment until it reaches the smelter."



JOHN CUDDY\* invites

## Mining Men to San Francisco

**R**OMANCE accompanies mining, anywhere. But world excitement attained a new peak following the discovery of gold in California. It resulted in the greatest gold rush of all time, in 1849 and the early '50's.

San Francisco was a quiet settlement of some few hundred persons when Marshall made his historic find on the American River. By the end of '49 it was a city of 30,000. People went to it from all over the world.

At the same time, Argonauts in about equal numbers poured into the towns and diggings of the Mother Lode region, 90 miles or more to the east. Traffic on the Sacramento River and over the trails between the bay city and the mining region was heavy. Altogether, colorful history was being written.

Seven hundred vessels arrived at San Francisco during 1849. The port became a forest of deserted ships. Some of these were beached and converted into hotels, saloons, warehouses, stores. The town of tents and wooden houses sprawled and spread. Prices soared. Eggs were \$1 each, beds \$5 a night, wages \$20 a day. A destructive fire swept the town in December. This happened again five times within 18 months. But each time the town was rebuilt and went on growing.

The life in San Francisco was exciting and sometimes adventurous. It was cosmopolitan and colorful. Gambling flourished. Entertainments of every kind, including theatrical and operatic, were enthusiastically received. Newspapers, schools and churches were founded. The demand for good food and drink brought many excellent chefs to the city. Traditions were established that still color life in the city.

Psychologists tell us that the individual's early years are all important in the shaping of his character. It must be that way with communities, too. Certainly, San Francisco has never lost the impress of its youth. And this is well, for it has helped to make it one of the world's more interesting cities.

**B**UT why tell you, a mining man, about San Francisco? After all, it must be a star city on your map. Of course you know its history, and how it has remained a center of mining interest through the years. Gold, silver, copper, petroleum and other metals and minerals mined throughout the west, and even farther afield, have contributed substantially and so contribute now to the sustenance of all that is San Francisco.

Still leading all states in the value of its gold production is the old Mother Lode region of California, with a bullion pro-

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San Francisco, whose foundations were laid by the gold miners and prospectors of '49, again will play host to mining men when the western division of the American Mining Congress holds its eighth annual convention and exposition there this fall. The event, which will draw operating men and experts from all parts of the west, will take place from September 29 to October 2.

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duction in 1940 valued at more than 50 million dollars. Gold from its hills laid the foundations of San Francisco, and when that had been done the Comstock Lode in Nevada was discovered, in 1859, to pour wealth into San Francisco and rear palaces on Nob Hill.

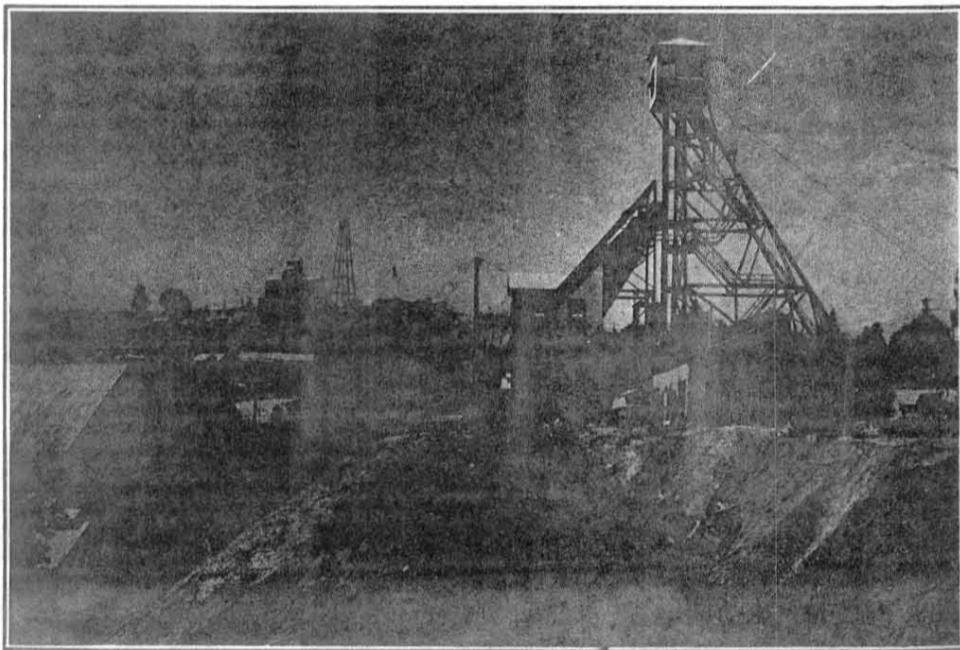
In 30 years the Comstock mines produced gold and silver to the value of 350 million dollars and paid dividends—largely to San Franciscans—of 130 millions. Then, in 1899, oil was discovered in the Elk Hills, in the lower San Joaquin Valley, and largely as a result of this and subsequent discoveries in the same general area, California became one of the greater oil-producing regions of the world. The importance of this to San Francisco is attested by the towering home-office buildings of oil companies in that city, and their vast tank-farms and refineries elsewhere around San Francisco Bay.

I don't want to labor the well-known point of San Francisco's relation to mining, but just briefly for the record and then to get on to other things, I would remind you that its region has for many years produced more than half of the quicksilver extracted in the United States. The New Almaden area alone, near San Jose, produces more quicksilver than any other spot on earth outside of Spain. More mining machinery is made in the San Francisco Bay area than anywhere else in the country. And the San Francisco Mining Exchange, at 130 Sutter Street, has an old and honorably important history.

The United States Branch Mint at San Francisco, established in 1854, has probably coined more gold than any other branch, not excluding the one at Philadelphia, which was started in 1793. The present mint building, at Duboce Avenue and Market Street, is an impressive fort-like structure of granite, on a hill.

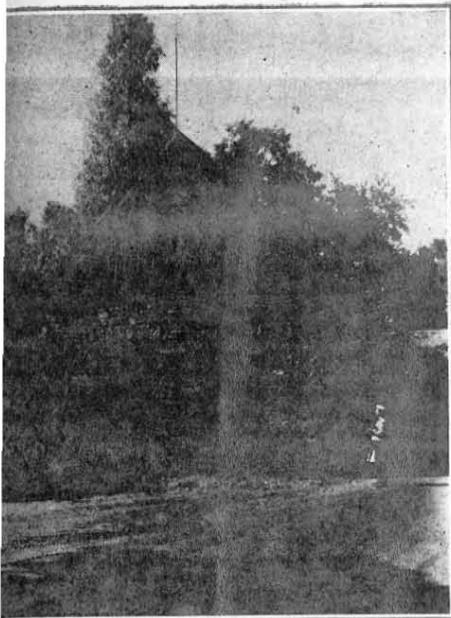
Among the related things that you will want to see when you go to San Francisco for the American Mining Congress convention in September, is the State Mining Bureau Mineral Museum, in the Post Office Building. Fifth largest of its kind in the United States, it presents specimens of minerals from all parts of the world, facsimiles of all important nuggets unearthed in California, and models of gold and diamond mines and of ore crushers. Also, it houses the John Hammond Mining Library of 9,000 volumes.

You could very well spend a little time in viewing the Wells Fargo Historical Col-



Throughout the Mother Lode there are deep mines like this—the Argonaut mine at Jackson.

\*Managing Director, Californians, Inc., San Francisco, California.



Old stone building at Tuttletown in Tuolumne County. The shutters, still in place, are of heavy iron for protection against the highwaymen of the fifties.

ection of the Old West, in the bank building, at Market and Montgomery Streets. And should you care to see the San Francisco Stock Exchange in action, go to the visitors' gallery, 155 Sansome Street.

There are dozens of other sights to be seen in San Francisco, and the arrangements committee is preparing a program of special entertainment and trips that could not be surpassed anywhere. Come to San Francisco and see for yourself. You won't be disappointed.

#### LOW-GRADE OREGON QUICKSILVER INVESTIGATED BY SURVEY

THE little known and practically undeveloped quicksilver deposits in the Steens and Pueblo Mountain ranges in Harney County, Oregon, were given a preliminary examination by the Geological Survey under the direction of Clyde P. Ross, one of the survey's geologists. The deposits are more than 100 miles by road from railroads north of them in Oregon and south of them in Nevada and are in sparsely inhabited country devoted mainly to stock raising.

Most of the deposits occur in the Tertiary lavas but some are in pre-Tertiary metamorphic and igneous rocks. The lavas, which are along the eastern side of the mountains, have been moderately flexed and broken by faults and are rather extensively altered. At intervals for a distance of about 30 miles the altered lavas contain mineralized fracture zones, which have been prospected for quicksilver. The pre-Tertiary rocks in the southern part of the mountains also contain lodes, which were first explored for gold and copper but locally contain quicksilver as well.

A few of the lodes in volcanic rock consist of discontinuous compound fracture zones, which contain small but relatively rich shoots of cinnabar. More abundant, however, are siliceous reefs, some of which are a thousand to several thousand feet

long and as much as 20 feet wide. The reefs form groups that are easily traceable for long distances, for some of them are so hard that they stand as much as 10 feet in relief. The principal valuable minerals are mercurial tetrahedrite and cinnabar. The lodes in the pre-Tertiary rocks are discontinuous quartz lenses and silicified shear and breccia zones which contain tetrahedrite and other metallic minerals.

Although quicksilver was discovered in the Steens and Pueblo Mountains 40 years ago, the deposits have been very little explored and probably have yielded less than 10 flasks of quicksilver. The lodes are of low-grade on the whole, but they contain rich pockets, some of which probably were formed in the zone of weathering. The deposits have not yet been adequately sampled. The mineralized area is so large and many of the reefs are so extensive that, if keen demand for quicksilver continues, this region might repay more thorough investigation by mining men than it has yet received. The metallurgical problems involved in treating mercurial tetrahedrite should be taken into account in planning plants for the treatment of the ore.

#### CALIFORNIA MINES DIVISION TESTS MINERALS AT FAIRS

ACCORDING to Walter W. Bradley, state mineralogist, more than 1,000 specimens of strategic minerals are being tested daily at county fairs in California. The State Division of Mines in this manner is aiding and encouraging development of the strategic minerals so much in demand in the national defense program. Experts from the mines division are stationed at the fair grounds in the various counties for the purpose of testing the many unusual rocks brought in.

The Division of Mines maintains offices in the Ferry Building, San Francisco; State Building, Los Angeles; State Office Building, Sacramento; and at the Chamber of Commerce, Redding.

#### BUREAU OF RECLAMATION LETS POWER LINE CONTRACTS

THE United States Bureau of Reclamation has awarded contracts valued at \$351,941 for copper conductor to be used in extending two electric transmission lines. The longer of the two lines will extend the Colorado River system through Phoenix to Tucson, Arizona, requiring about 110 miles of construction. The highline from Blaisdell, east of Yuma, will be extended to Power Drop No. 4 on the All-American canal in California, entailing around 50 miles of construction.

The Nehring Electrical Works of DeKalb, Illinois, will supply 1,900,800 lineal feet at \$216,729 for the Phoenix-Tucson line, and the Anaconda Wire and Cable Company of New York, 760,320 lineal feet for the Yuma line at a cost of \$135,212. Three copper conductors are required for each line. Bids on the construction are expected to be opened in September. Line construction is expected to require 120 days, while the transformer stations, etc., will take slightly longer.

#### OPEN-CUT METHODS OF MINING COVERED IN NEW BULLETIN

OPEN-CUT methods of metal mining are discussed in detail in a recent bulletin published by the United States Bureau of Mines as the last of the series of papers describing the principal methods of mining. The work was compiled by E. D. Gardner and McHenry Mosier, supervising engineers with the mining division of the Bureau of Mines.

Most of the iron ore of the country is mined from open pits, and open-cut mining, while relatively new in the copper industry, yields more copper than any other method. In addition, some gold, quicksilver, and zinc mines use the open-cut methods. The bulletin goes into a thorough discussion of the drilling, excavating, and transportation problems and methods at the principal open-pit mines.

Copies of "Open-Cut Metal Mining"—Bulletin 433—may be obtained from the Superintendent of Documents, Washington, D. C. The price is 40 cents.

#### BAGUIO MINING METHODS ARE COVERED IN BUREAU REPORT

THE Bureau of Mines, Commonwealth of the Philippines, Manila, Philippine Islands, has issued a circular entitled, "Stoping Methods and Costs in the Gold Mines of the Baguio District, Mountain Province, Philippines," by William F. Boericke and Nestorio N. Lim. The paper is the result of a special study made by the authors, under authority of the Philippine Bureau of Mines, and with full cooperation and assistance of the mining companies in the Baguio mining area.

The data for the paper were gathered by Boericke and Lim during visits to the mines and from discussions and conferences with the operating heads and their assistants.

In the introduction it is stated that stoping methods in the Baguio mines are evolutionary in that they represent a development from standard stoping practice as used in American mines, such as are found in Arizona, Montana, and the Coeur d'Alenes, to fit special mining conditions in the Philippines. The historical development and the advantages of these methods are discussed, different phases of work diagramed, and cost records given.

The bulletin, known as Information Circular No. 4, contains 42 pages, and is being distributed without charge.

#### MEXICAN ZINC CONCENTRATES WILL BE STORED IN EL PASO

THE Metals Reserve Company, a subsidiary of the Reconstruction Finance Corporation, will store 50,000 tons of zinc concentrates on an acreage obtained for that purpose in the El Paso, Texas, railroad yards of the Atchison, Topeka, and Santa Fe company. The concentrates, which will come from mills in Mexico, will be held until smelted and needed by the government.

As a result of these arrangements, plans are being promoted for construction of a zinc smelter to handle the product at El Paso, thus eliminating freight charges for shipping to other smelters.

Mining Journal 1941

Postal 8110 in CA

12-15-91 A 176

## OPM GIVES MINING INDUSTRY PRIORITY FOR REPAIR WORK

**A**NNOUNCEMENT of general priority treatment for maintenance and repair items in the mining, metallurgical, coke, and certain other industries has been made by the Office of Production Management and new application forms are now available. This order gives further recognition to mining as an essential industry, basic to the defense program, as shown previously when the OPM ordered general priority treatment for the makers of mining machinery and equipment.

Under OPM's maintenance and repairs rating plan, mining companies may apply directly for authorization to use preference rating A-10, or A-1-a in emergency cases. Mining machinery manufacturers were previously given the right to use preference rating A-3.

The new OPM regulations provide that any person or enterprise engaged in mining or processing of minerals who finds that he is unable to care for his maintenance and repairs without assistance of the plan may secure a copy of the new form PD-67 and apply for a "Maintenance and Repairs Preference Rating Order." Upon qualifying, the producer can serve a copy on a supplier who must schedule deliveries according to preference ratings.

To obtain forms for preference ratings, application should be made to the Priorities Division, Office of Production Management, Attention Maintenance and Re-

pairs Section, 462 Indiana Avenue, Washington, D. C., or the nearest district office. The following men are western district managers of the OPM Priorities Field Service:

Dallas, Texas—James B. Crockett, Wood and Alkard Streets.

Denver, Colorado—Vigil Board, Seventeenth and Arapahoe Streets.

Los Angeles, California — G. Howard Hutchins, 1151 South Broadway.

San Francisco, California—Andrew L. Kerr, Federal Reserve Bank Building.

Seattle, Washington—William D. Shannon, Stuart Building.

## PERMANENTE PLANT SCHEDULED FOR PRODUCTION THIS FALL

**T**ESTING is under way at the \$9,000,000 magnesium plant of the Permanente Corporation, located at Permanente about 15 miles west of San Jose, California, and full operation is scheduled for fall. The plant, said to be the third magnesium producer in the United States, is expected to produce 5,500 tons of magnesium yearly. The entire supply of ore will come from a magnesite deposit 35 miles northeast of Luning in northwestern Nye County, Nevada.

The magnesium will be extracted by a new carbothermic process developed by Dr. Fritz Hansgirt, an Austrian scientist now living in California. Henry J. Kaiser, head of the Permanente concern, Latham Square Building, Oakland, has bought

U. S. rights to patents covering both extraction and fabrication by this process.

The project is backed by the Kaiser-Todd shipbuilding interests, who plan construction of another magnesium plant in Washington to be operated by Bonneville-Grand Coulee Dam power. It is expected that the Hansgirt electric furnace process of metal extraction will be utilized in this plant also, depending, of course, upon the operating success of the Permanente plant.

Two other magnesium plants in the country are owned by Dow Chemical Company, one at Midland, Michigan, and one at Freeport, Texas. The former produced approximately 6,500 tons last year. The Freeport plant, still under construction, will extract magnesium from the salt water of the Gulf of Mexico. The present rates of production at Freeport call for approximately 36,000,000 pounds a year.

## 50 CENT PAY INCREASE IS GRANTED TO ARIZONA MINERS

**A** PAY INCREASE of 50 cents a day for Arizona mine and smelter workers and a comparable boost for salaried employes, effective September 1, has been announced by Arizona's major copper producers. This is the second advance announced in 1941, a 25-cent raise having been granted in March. Company officials estimate this will mean approximately \$2,500,000 a year more to Arizona copper miners whose wages are now at the highest level in history.



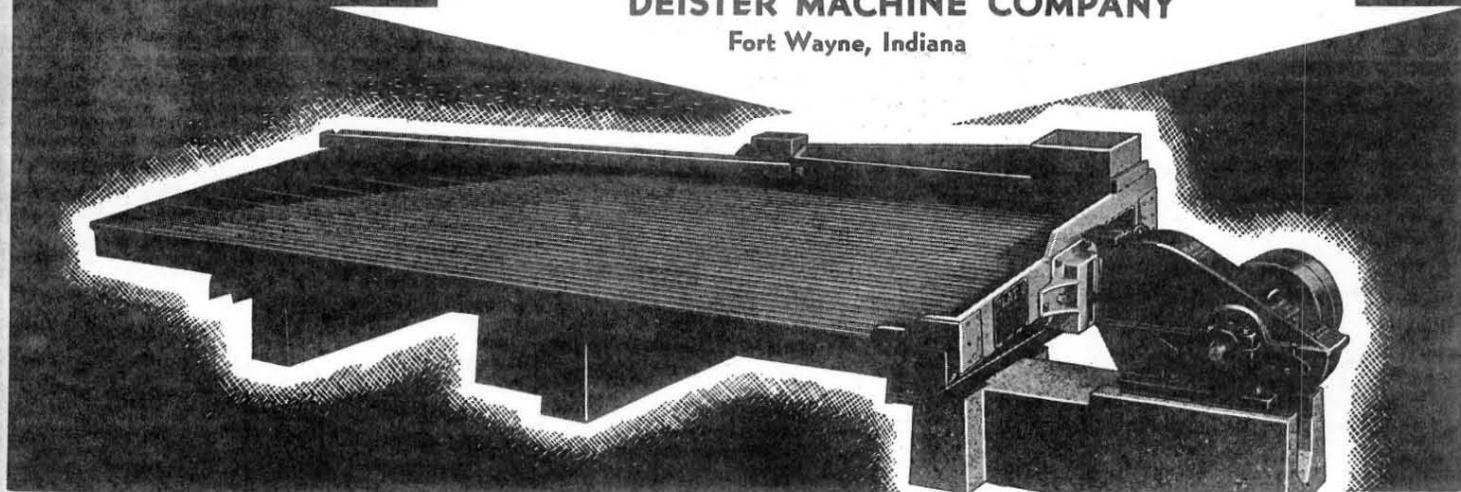
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stratum with 1,000,000 tons of probable and possible ore of lower grade which may be developed and handled profitably by the leaching process. The ore-bearing stratum is stripped by bulldozers and the ore mined by dragline. After being crushed, the product goes to a two-acre leaching bed covered with an acid-proof mixture of asphalt and oil. It is then sprayed with weak sulphuric acid which removes the copper content. The copper-bearing solution goes through concentrators and then to precipitators where the copper is collected on scrap iron. The used acid is pumped back to a reconditioning plant and conveyed back to the acid tanks for further use. It is said that tests have shown that the copper can be produced by this method at less than 6 cents a pound.



The Union Consolidated Mining Company, 155 Montgomery Street, San Francisco, California, has reported discovery of a three-foot ledge of high-grade ore at its Oro y Plata mine one mile east of Murphy, California. Four men are employed in development work. John C. Scoles is president and general manager of Union Consolidated.

Toulze and Bestland have started work on placer property on the middle fork of the Feather River near La Porte in Plumas County, California. Equipment includes a power shovel, and sluices will be used for gold recovery. Following completion of preliminary work, a crew of 10 men will be employed on a three-shift basis.

Three tons of select ore from the Scriven-McIntyre claims in the Mt. Oro district near Nevada City, California, are said to have returned more than \$30 a ton in free gold. C. E. Scriven, Redding, California, is one of the operators.

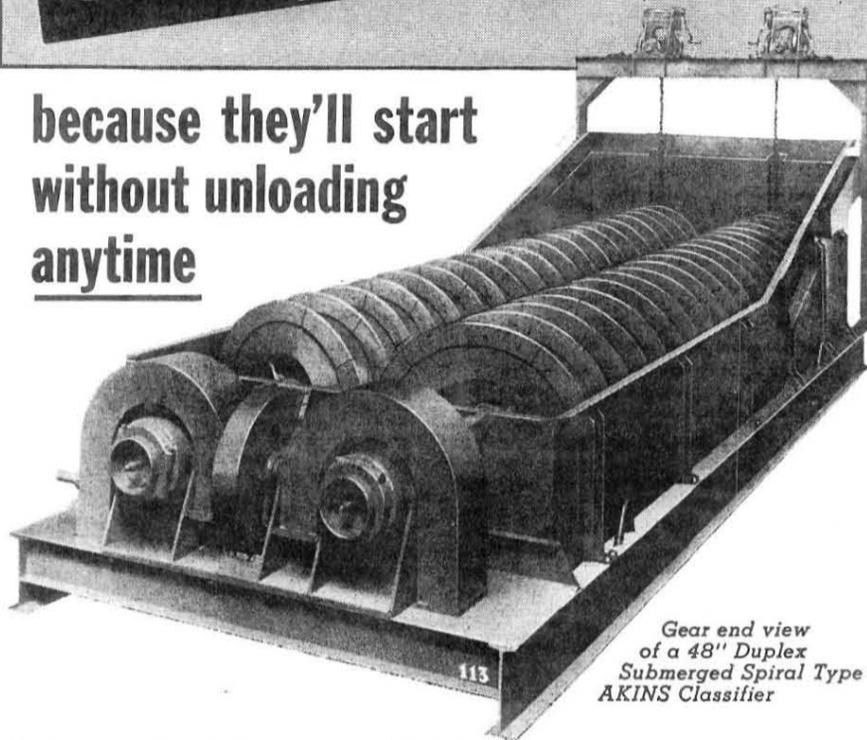
Preliminary development work has been nearly completed at the property of Providence Tuolumne Gold Mines, Inc., A. Vanini, president and general manager, 420 Market Street, San Francisco. The property comprises nearly 110 acres on the east belt of the Mother Lode near Tuolumne and is operated under bond and lease by the company. Equipment has been improved, and an extensive development program is planned.

The Gibsonville Mining Company plans to double its present production capacity at its mine seven miles north of La Porte, California, with the operation of four monitors during the next hydraulic season. A crew of 15 men is employed in construction of new ditches to develop additional reserves of water; a trunk will be put into an 18-acre lake from which water will be drawn; and construction of another 35-acre reservoir is planned. Martin B. Turner is superintendent.

Loftus Blue Lead Mines Company of Pasadena, California, is conducting clean-up work with the ending of the hydraulic

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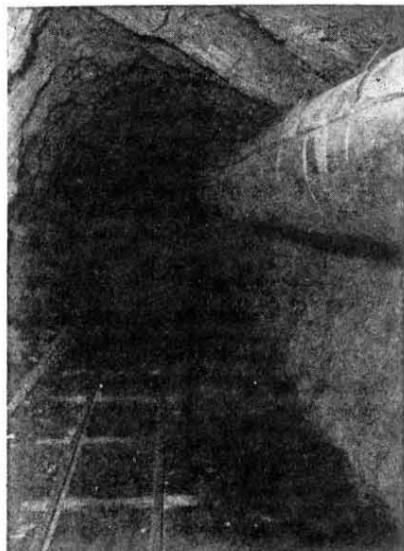
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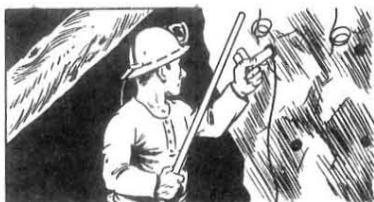
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season at its Pine Grove and Wehrle mines near La Porte, California. A crew of 20 men has been employed under the direction of James Kelly, superintendent. Preparations for next year's operations will be started immediately following the seasonal shutdown. Edwin McKenna, La Porte, is general manager of the company.

The 3,000-foot tunnel is nearing completion at the **Blue Gravel** mine 12 miles southeast of La Porte, California, and the pay channel is expected to be contacted in a few days. A crew of 15 men is employed under the direction of Stanley W. Cummings, general manager and treasurer of the **Lucky Gold Hill Mining Company**, which holds the Lucky Gold Hill mine located on the opposite ridge from the Blue Gravel.

The **Poleta** mine about five miles north of Bishop, Inyo County, California, has been taken over under lease by M. J. Jensen, G. A. Phillips, and Walter E. Jensen. Approximately 5,000 tons of tailings are now being worked. A 50-ton ball mill has been purchased to handle ore from the mine when work on the tailings has been completed. The recovery process consists of concentration and amalgamation, supplemented by a chemical process devised by M. J. Jensen. Walter E. Jensen acts as manager for the present operating group. A. E. Beauregard, Box 53, Laws, California, is one of the owners of the Poleta.

Regular shipments of ore are being made by M. M. McVay and associates of Crescent City, California, to Grants Pass, Oregon, from their holdings in the French Hill district. The group is said to be negotiating for additional property and will expand operations within the next few weeks.

A deal is reported pending on the cinabar claims owned by H. L. Hawkins of Crescent City, in the Diamond Creek district of California. Extensive development work is planned.

San Francisco interests are reported to have taken over the property of the **Lost Camp Mining Company** at Blue Canyon near Auburn, California. Installation of an electric power plant is planned, and electric shovels will be used at the mine. Work on pipe lines and the ditch will begin soon preparatory to next season's hydraulic operations. Work has been carried on in the Boston pit, but next season the Miller pit also will be worked. Lewis F. Johnson, Box 491, Auburn, is superintendent at Lost Camp Mining Company, and V. P. Maxwell, Box 666, Napa, California, is secretary.

The **Weaver Dredging Company** has moved its equipment from East Weaver

Creek in Trinity County, California, to ground at Minersville. An area of more than 40 acres will be worked at the new site, and operations are expected to start in a few days. The dredge had worked at the former location for nearly a year. R. C. Dempster, 459 Northeast Hazelfern, Portland, Oregon, and O. R. Batham, Weaverville, California, are co-partners in the company.

Operations are scheduled to start in the near future at the quicksilver property of the **Lea-Grant Mine**, Paicines, California. An expenditure of \$75,000 has been made for recovery equipment, which includes a 60-ton Gould rotary furnace. Two to three shifts daily will be employed. Work has been in progress for the past year, preparatory to active mining, with a crew of 15 men employed. E. H. L. Mitchell is general manager. The Lea-Grant holdings comprise three leases, the Lily Berg, Goodall Estate property, and Manuel Ortiz property, located in Panoche Valley, San Benito County. Spencer Grant, president of Grant, Birkholm, and Company, insurance brokers, 206 Sansome Street, San Francisco, California, and R. W. Lea of New York, are the members of the syndicate.

As a result of the discovery of a rich deposit of ore recently, production for June at the **Sulphur Bank** quicksilver mine near Clearlake Park, California, reached a new high, with 107 flasks reported to have been produced in one day. Preparations are being made to step up production to meet demands of the national defense program. The property is operated by the Bradley Mining Company, Worthen Bradley, president, 425 Crocker Building, San Francisco. A. F. Wolbert, Clearlake Park, is general superintendent.

**Natomas Company**, Thomas McCormack, president, Forum Building, Sacramento, California, has reported a higher income figure for the second quarter of 1941, attributable to richer gravel handled. For the quarter ended June 30, 1941, net income was \$454,986, after all charges but without provision for excess profits liability, equivalent to around 47 cents a share on 968,350 capital shares. In the first quarter, net income was \$415,000 or about 43 cents a share on the same number of shares, and for the second quarter last year, \$316,433 or about 32 cents a share on 975,750 shares. Gross income for the six-month period of the current year amounted to \$2,212,518, more than 27 per cent better than the \$1,731,682 of the corresponding period in 1940.

The **New Deal** mine in Kern County, California, is under operation by Fred Creith, Randsburg, and associates, who have reported returns of approximately \$75 a ton from ore milled at the Burton Brothers mill. A new compressor has been installed, and purchase of a ball mill is planned if warranted by results of the development work now under way.

Mining and milling continue steadily at the **Washington** mine, French Gulch, Shasta County, California, and quality of the ore is reported satisfactory. The mine is owned by J. H. Scott and Durand A. Hall,

operating under the name of the J. H. Scott Company, 465 California Street, San Francisco. Joseph David is in charge as superintendent.

Active production is reported at the **Great Northern** quicksilver mine on Empire Creek near Gottville, California. A furnace and other recovery equipment were installed several months ago. The mine is under bond and lease to C. N. White, 2925 California Avenue, Bakersfield, and associates. Work is directed by Carl W. Yates, 636 West Miner, Yreka, California.

A new flotation unit has been installed at the **Eliza** mine 14 miles west of Yreka, California. The Gold Crown Mining and Milling Corporation, comprised of Seattle, Washington, interests, is operating the property. L. G. Morris, Yreka, is superintendent.

A six-foot ledge of ore running \$56 a ton is reported to have been struck at the property of **Crusader Gold Mining Company** at Diamond Spring, El Dorado County, California. Plans have been made to furnish electric power for the mine. William E. Payne, 601 Vernon, Oakland, California, is president of the company.

Portions of the 800-foot shaft are being retimbered at the property of **Oro Fino Consolidated Mines** located in the Ophir district of Placer County near Auburn, California. While this is being done, all other underground work has been stopped with the exception of a small amount of mining on the 200-foot level. J. C. KempvanEe, 381 Bush Street, San Francisco, is general manager.

A crew of six men is employed in sinking a test shaft at the **Woods** placer mine on the south fork of the Yuba River. It is expected to contact the vein within the next six weeks, after which further development will be undertaken. Ray Morrison, Quincy, California, is in charge.

The milling plant is being reconditioned and a new Fairbanks-Morse engine has been installed at the **Ontop** mine in the Bucks Lake district near Quincy, California. Howard E. Fowler, Bucks Lake Lodge, Quincy, and D. H. Mitchell, also of Quincy, have been developing the property for the past seven years. A 1,000-foot tunnel has supplied a good run of commercial ore.

Dredging will start in the near future at the **Hintz** mine 13 miles from Chico, California. Operators are Marion Palmer and Alex Chambers, Chico.

Reconditioning and modernizing of the mill has been completed, and production is scheduled for the near future at the German Ridge and Jupiter gold mines northeast of Angels Camp, California. Five thousand tons of profitable ore are stated to be blocked out, and development of a large tract of undeveloped ground is planned. **Western States Gold Mines Consolidated**, the present operator, has installed new mining equipment and is working below the old productive area of the mine. Clifford McClellan, Box 64, Angels Camp, is president.

Construction of the new milling plant at the property of the **Schroeder Mining and Development Company** is nearing com-

pletion. Equipment consists of a new 25-ton Straub mill, table, crusher, feeder, etc. A new engine also has been ordered. The mine is located 12 miles southwest of Yreka, California, in Siskiyou County and is a gold producer. Major H. A. White, Yreka, is general manager of the company.

Sinking of the two-compartment main shaft has reached 160 feet at the **Loretta** gold gravel mine three miles south of Railroad Flat, California. Retimbering has been completed in the shaft to its present depth, and upon reaching the objective of 220 feet, drift mining will be started by E. J. Forbes, owner. Other work, which has been carried out, includes construction

of a headframe, installation of a new gravel washing plant, and many surface improvements. A crew of 10 men is employed with the intention of increasing the number when active mining starts.

The **Horse Shoe Dredging Company** of Placerville, California, has purchased an area on Esperanza Creek near Railroad Flat, California, which is estimated to provide sufficient gravel for more than a year's operation. Equipment is being transferred to the property and work is expected to start within 30 days. George Butler is manager of the company.

A crew of 40 men is employed at the **Jenny Lind** mine by the **Lind Mining Company**, and the recently rehabilitated 150-



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ton flotation mill is in operation. The company is a subsidiary of and under the same management as the Pacific Mining Company. P. R. Bradley, Jr., Bear Valley, California, is manager.

An expansion program is planned for the **Big Butte** mine near Randsburg, California, operated by the **Butte Lode Mining Company**, E. L. Wegmann, general manager. Four cyanide leaching tanks will be installed to be followed by installation of slime tanks. The mill is now operating on two shifts and handling ore from the Big Butte and Lucky Boy mines. With completion of the construction program, the plant will be used for custom milling as well as to handle ore from the Little Butte. Wegmann has been connected with the mine for 26 years. With the exception of a period of three years, the property has been the scene of continuous activity since its initial operation.

The **Dodge Construction Company** of Fallon, Nevada, H. K. Atkinson, manager, Round Mountain, Nevada, is installing a new pipe line at its holdings below the **Plumas Eureka** mine near Johnsville, California. The placer property is operated hydraulically and operations were suspended for the winter months. The ground was leased over a year ago from the **Portola Corporation** of Fresno, California, and work is stated to have yielded a satisfactory amount of gold with sufficient commercial gravel available for several years years of work. Dodge Construction Company also operates a gold placer property, acquired the first of the year, in the Little York district of Nevada County.



Milling has been suspended temporarily at the **Donora Mining Company, Inc.**, Nederland, Colorado, pending installation of a new Denver Mineral jig in the mill circuit. A considerable amount of free gold is expected to be saved by addition of the jig. Robert Donner, 5 Stewart Building, Colorado Springs, Colorado, is president of the company. Peter Carlson is superintendent at the mine.

It is reported that a settlement of 1939 Colorado tax claims against **Climax Molybdenum Company** for \$212,500 has been approved by District Judge William H. Luby. The company agreed to the settlement upon condition that a tax certificate valued at approximately \$324,000 be canceled. Climax had refused to pay 1939 taxes on the grounds that an increase in its assessed valuation from \$4,000,000 to \$16,000,000 was illegal and excessive. Some new basis



for assessing the Climax property is expected to be the next step in settling the extended tax controversy. Max Schott, 500 Fifth Avenue, New York, is president of the company, and William J. Coulter, Continental Oil Building, Denver, is general manager.

A group headed by Dr. W. F. O'Brien of Leadville, Colorado, has leased the old **Matchless** mine on Fryer Hill, made famous by the late H. A. W. Tabor, and is preparing to sink a new shaft near the Matchless fault. The property is now owned by the **Shorego Mining Company**. The leasing group is composed of a group of former employes of the Matchless mine. Plans also include the erection of a statue to Tabor and his famous wife, Baby Doe.

The **Donaldson Corporation**, operating the Donaldson mine in the Trail Creek district of Clear Creek County near Idaho Springs, Colorado, is making regular shipments of two cars of ore weekly to the Golden Cycle mill at Colorado Springs. The company is headed by H. E. Roster, Idaho Springs, and associates. Stephen A. Ionides, 511 Cooper Building, Denver, Colorado, is consulting engineer.

The **Signal Hill Mining Company**, operating in the Lake Gulch district near Central City, Colorado, is installing an air compressor for use in driving a crosscut, which is now in more than 80 feet. F. W. Howbert, Central City, is manager of the property.

The **Vermiculite Company of America**, Stanley Gray, president, 406 Thorpe Building, Minneapolis, Minnesota, has resumed operations in the Powderhorn district near Gunnison, Colorado. Clyde Glosser, Pueblo, Colorado, is directing the work.

The property of the **Empire Zinc Division** of the New Jersey Zinc Company at Gilman, Colorado, is producing between 500 and 600 tons of ore a day, according to reports. The ore is said to average more than 10 per cent zinc. The company's plant at Gilman is working on a 24-hour schedule. R. L. Jones of Canon City is superintendent of the Colorado work.

A new company, the **Volcanic Minerals Company**, is to be incorporated with a capitalization of \$100,000 to take over the assets of the **Idaho Metals Company**. George D. Gillespie, Idaho Springs, Colorado, is the organizer and manager for both companies. The new company will acquire the properties of Idaho Metals, which have been opened by shafts and more than 1,000 feet of tunnels, and will also complete negotiations for acquisition and development of several other groups of properties.

Work is nearing completion on the installation of equipment at the property of the **Banner Mining Company** along Clear Creek, 1½ miles east of Idaho Springs, Colorado, and active operations are scheduled to begin shortly. It is estimated that the company has sufficient materials to carry on work for a period of three years. The plant includes a gravel washing machine, Diesel shovel, gasoline dragline, caterpillar bulldozer, and concentration equipment. It is planned to handle about 2,000 yards of gravel daily. A. A. Lynch

## Guest Editorial

### A LETTER TO THE PRESIDENT

By SIDNEY NORMAN, Hollywood, California.

(Editor's Note: The following is a copy of a letter recently addressed to the President of the United States on a subject of interest to mining men. The writer is a life member of American Mining Congress and of Northwest Mining Association; also associate member of American Institute of Mining and Metallurgical Engineers, and of Canadian Institute of Mining and Metallurgy. For 30 years he has engaged in mining journalism, on both sides of the international line, gaining an exceptional insight into the workings and effects of the various federal, state, and provincial laws affecting mining securities.)

The President  
The White House  
Washington, D. C.

Dear Mr. President:

Although aware that you are beset with duties and responsibilities as exacting and onerous as are carried by any man in this world, I am emboldened to address you upon a matter that I believe, goes to the very foundation of the success of reconstruction efforts after peace comes—when every ounce of initiative and individualism must be brought into play to overcome the economic effects of vast expenditures for defense.

You will not remember me but, going back to the year of your first presidential candidacy, I then addressed you by letter, advancing the opinion that you would carry the State of California by a comfortable majority. In reply, I received a personal note, thanking me for words of encouragement and asking me to do what I could to make the prophecy come true.

Subsequently, I sent you copy of an article, "The Curse of Marginal Trading," in which I advanced the belief that uncontrolled practices of the New York Stock Exchange were draining the rest of the country, to no good purpose, and that drastic steps should be taken to bring its operations within bounds. That article was acknowledged by the late Colonel Howe and I understood, though quite unofficially, that it was among the data presented to the Senate committee which took up the question of control of unfairly induced speculation, finally resulting in enactment of the Securities and Exchange Commission legislation.

Unfortunately for the country, and particularly for the western mining states, efforts to control marked-card speculation under that legislation have gone too far. Fanatical financial witch-hunting has invaded fields not contemplated, I believe, by the framers of the law, and legitimate constructive speculation has practically been strangled to death, although it is obviously upon that characteristic that the prosperity of the country has been built and upon which it will have to depend so largely in the reconstruction era.

I have been connected with the mining industry of the United States and Canada for over 45 years and know how much both countries are indebted to it for past prosperity. I also realize how disastrously the industry has been affected by the unwindable red tape that has been gummed around it, not only by the SEC, but by the variegated securities laws of 47 states of the Union.

The effect has been to stifle the spirit that must be encouraged if the mining industry is to do its full part in reconstruction and, what is more, practically all operations have been handed over to a few financially powerful concerns that are automatically immune from the destructive inhibitions of bureaucracy.

In this state alone are literally hundreds of promising prospects showing precious, base, and strategic metals, awaiting the touch of small capital to raise them to the status of producers—or disprove them—and the same situation exists in all other western mining states.

Companies of large capital rarely engage in that very essential primary work. That has always been left to the small promoter and operator who, under existing circumstances, have been hampered, hounded, and largely eliminated as potential malefactors.

But for their virtual liquidation, the national cry for increased output of base and strategic metals, to make this country independent in time of war, would have been answered by an army of prospectors and energetic men of small capital, directing their energies to development of attractive showings which, with luck, might become of sufficient promise to attract large capital.

Had this same army enjoyed freedom of action such as existed in the past and laid the foundation for all western prosperity, the necessity for advancement of public funds by the federal government for development of metal resources—now belatedly recognized in high places as essential to proper defense of this country—would have been obviated.

Mining is necessarily extremely speculative in its initial stages and the industry cannot maintain itself in prosperity if deprived of the initiative and daring of men of adventurous character who have hitherto contributed so liberally to the greatness of this country.

Small mining capital used in initial development is never lost so far as the immediate community or nation is concerned. Win or lose, it goes to wages and for purchases of equipment and supplies. All the public asks, or ever asked, is an honest run for its money, now denied by impenetrable folds of bureaucratic mummy cloth. Neither bureaucracy nor any other agency can prevent the fool from parting with his money. The constructive speculative spirit, however, can be eradicated at the cost of complete ruination of the mining industry and the consequent piling up of relief expenditures in times of stress or depression.

One other point. If the constructive speculative spirit of this nation had been allowed to function legitimately, it is conceivable, in fact almost certain, that there would be no shortage now of such base metals as copper, and the consequent necessity for importation of supplies from foreign countries. There is, nevertheless, a distinct shortage of copper that can be mined profitably at 12 cents per pound, and unless the price is raised from the present pegged level, it is inescapable that the shortage will be permanent and that at the same time millions of tons of low-grade ore will be lost to the nation forever. When lode ore bodies are once robbed of their higher grade sections and stopes are abandoned, it is impossible economically to salvage the lower grade sections now being rendered worthless by flouting the law of supply and demand.

Years have passed since the SEC was created. Efforts of mining men honestly endeavoring to do something for themselves and for their country, or seeking simplification of the multitudinous, and often idiotic, rules that have obscured the original intent of the law, have been met with endless pettifogging arguments, backed by an autocratic attitude that has driven countless men of initiative from a field of immense value to the nation.

Your hands are very full, I know, and yet I feel that if you could spare the time to give this subject even a casual thought, you would agree that such legislation is disastrous to the American spirit of enterprise. You might also agree that better results, and at far less expense, could be achieved by merciless prosecution of the dishonest few, allowing the honest many to work out their own precarious salvations, unhampered by impertinent interference by bureaus and commissions notoriously ignorant of actualities.

In plain words, I am pleading for restoration of government by law, for the great mining industry, in place of present government by man—for restoration of the spirit of initiative and individualism which is the lifeblood of the industry.

I appeal to you not to turn this letter over to the SEC or other governmental bureau, but to give it your personal thought, and if you believe that the mining industry is worth preserving, even in moderate prosperity, that you use your great influence to halt this disastrous stifling of the spirit that has made America the greatest and richest country the world has known. In this appeal, I believe I am expressing the desires of mining men generally throughout this continent.

Very respectfully,  
(Signed) SIDNEY NORMAN.

# Mill Heads from the Western States

Brief items covering the mining industry in the Western United States and Mexico.



Officials of the **Ari-Butte Operating Company**, Sombrero Butte, Arizona, are negotiating with county officials for construction of a new road into the property from the Copper Creek road. In a report to stockholders, issued recently, the company states that the mine has been dewatered to about the 400 level. The 300 level has been drained and repaired, new water and air pipe lines installed, and ore now is being drawn from that level. The mill, which operated on a two-shift basis from November 1940 until February 1941, was closed down at that time for the purpose of working out a new flowsheet. Final mill tests show that a greatly increased recovery is now possible. O. W. Blevins, Sombrero Butte, is president and general manager of the company.

G. C. Rhodehamel, Morristown, Arizona, is developing the **Pachan** scheelite property located at the head of San Domingo Wash. The property carries a large low-grade deposit and five men are engaged in developing and shipping, handling only high-grade.

It is reported that the **Ropp** alunite mine of Ropp Brothers, Quartzsite, Arizona, will be investigated by the Reynolds Metals Company, R. S. Reynolds, president, Richmond, Virginia. The claims are located at Sugarloaf Butte near Quartzsite.

**Phelps Dodge Corporation**, Louis S. Cates, president, 40 Wall Street, New York City, reports a net profit of \$7,014,854 for the first half of 1941, which is equal to \$1.38 a share on stock outstanding. This compares with \$5,804,538 or \$1.14 a share in the like period of 1940.

**Rex Benner**, 6337 La Miranda Street, Hollywood Station, Los Angeles, California, and associates have leased the **Granite State** mine at Hillside, Arizona, and work has been started on the property. They have also leased the **Alaskan** mine south of Wenden, Arizona, and expect to do some work there later. The Benner interests formerly leased the Carmelita mine near Wenden.

Lawrence and Harry DeZee are operating under lease the **Del Pasco** mine five miles northwest of Crown King, Arizona, and are shipping about a car of high-grade gold ore monthly.

The old Red Cross mine near Crown King, Arizona, now known as the **Juniper**, is being leased by Ben Humphreys, and a shaft is being sunk at the property. The mine is owned by John Williams.

One of the Wildflower group of claims, owned by the **Golden Crown Mining Company**, Crown King, Arizona, is being

worked by Jesse A. Horton. He is mining a high-grade streak of ore.

Louis Schrade of Mayer, Arizona, is operating under lease the **Burro** mine, formerly known as the "94", near Crown King, Arizona. He has unwatered the mine and is drifting to the south toward the old Union property. The drift is said to be in a good grade of mill ore.

A crew of seven men is engaged in cleaning out tunnels at the property of the **Universal Mining and Smelting Corporation** in the Dripping Springs district about 30 miles southwest of Globe, Arizona. Frank M. Pool, Superior, Arizona, is president of the company.

Development work is under way at the **Round Top** group of claims owned by Cal Bywater, Box 1679, Globe, Arizona. Lessees have shipped 200 tons of ore during the past three months.

The **Eagle-Picher Lead Company** and subsidiaries, J. M. Bowlby, president, Temple Bar Building, Cincinnati, Ohio, reports for the six months ended June 30, 1941, a consolidated net profit of \$960,992 after provision for depreciation, depletion, federal and state income taxes. This compares with \$410,309 for the same period of 1940. Net sales for the period amounted to \$18,661,127, while production and manufacturing costs amounted to \$14,843,162.

A new contract has been negotiated between the **Shattuck Denn Mining Corporation**, Bisbee, Arizona, and the Bisbee Miners Union, Local 30, International Union of Mine, Mill and Smelter Workers, a C. I. O. affiliate. The agreement, which became effective August 18, averted a strike which had been called for that date. The company and union officials had been negotiating for some time on the new contract to replace the previous one which expired August 17. It is understood that the new contract calls for a 25-cent raise for all day wage employes and a five-day vacation period with pay. The wage clause and vacation clause were made effective for only one year, while the rest of the contract was made for two years. The union had asked for raises of 80 cents per day for all workers, a closed shop, and a checkoff of union dues. The wage for miners has been \$6.01 a day, plus overtime. Approximately 300 men are affected by the new contract. J. A. Wilcox, Bisbee, is superintendent of Shattuck Denn.

Robertson and Mitchell, both interested in tire companies in Los Angeles, Califor-

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*All news appearing in The Mining Journal is obtained from sources believed to be reliable, but the accuracy cannot be guaranteed. However, every item has been sent to the person or company mentioned for verification before publication.*

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nia, have taken over mica claims owned by W. L. Palmer, Morristown, Arizona. The claims are located near Castle Hot Springs in Yavapai County. A three-mile road is being constructed in order to move in equipment preparatory to starting production. A. A. Osment, Morristown, is engineer in charge at the property.

Steve and Richard Cocreham, Box 1290, Globe, Arizona, owners of the **Cocreham and Haywood** mine, are shipping from one to two cars of gold ore monthly to the Hayden smelter for treatment. Eight men are working leases at the property.

Work at the property of the **Ari-Butte Operating Company**, Sombrero Butte, Arizona, is scheduled to go on a two-shift basis shortly and plans are also being worked out for a three-shift basis in the near future. The company is reported to have approximately 24,000 tons of ore available for milling, 6,000 tons of which are on the dump. The 50-ton flotation mill has been reconditioned and active production will get under way at once. Values are in copper, silver, lead, and gold. O. W. Blevins, Sombrero Butte, is president of the company.



The **Reese Production Corporation**, Matthew M. Reese, executive vice-president and general manager, Box 37, Glamis, California, is operating its **Patterson** tube mill on a 24-hour basis, treating 150 tons of ore daily. The plant has a possible maximum capacity of 300 tons per 24 hours and it will be built up gradually to that tonnage. Amalgamation is used for recovery of values. Mining is on a one-shift basis and a crew of 17 men is employed at the property. The company is mining conglomerates, limestone and vein matter from an open pit by means of a Diesel shovel. The pit and mill are six miles apart and ore haulage is handled by four trucks, one of which is a 10-ton International. The company is operating the property under lease from the Desert Gold and Aluminum Corporation of Seattle, Washington.

Asbestos property near Monticello, California, owned by Kohler and Chase, 20 O'Farrell Street, San Francisco, California, is being prepared for active operations. Machinery for crushing and drying has been ordered for installation at the mine. Preliminary tests made in pilot mills are said to have shown an average of 20 per cent by weight. The property was formerly owned by the United States Asbestos Corporation, Ltd. V. E. Parrish, Monticello, is supervisor of operations for Kohler and Chase.

A crew of about 30 men is employed at the property of **Oat Hill Mine, Inc.**, Middletown, California, and the company is producing between 90 and 100 flasks of quicksilver monthly. M. J. O'Boyle is general superintendent at the mine. H. W. Gould, Mills Building, San Francisco, California, is general manager of the company.

The **Aetna** quicksilver mine near Aetna Springs, California, is producing approximately 50 flasks of quicksilver monthly. The property was reopened recently following several years of inactivity.

At the **Manhattan** quicksilver mine near Monticello, California, production is reported to be averaging 50 flasks a month. The property is owned by the **Manhattan Quicksilver Company**, R. B. Knox, president.

A full crew of men is reported to be engaged in rehabilitating the **Knoxville** quicksilver mine near Monticello, California, preparatory to placing the property on a full-time production basis in the near future. The mine is owned by George E. Gamble and W. V. Wilson, both of Palo Alto, California. T. S. Scribner, Monticello, is superintendent.

Work at the **Palisades** mine, Calistoga, California, is reported to be on a three-shift basis with a crew of approximately 60 men employed. Principal values are in silver with some gold. The property is operated by the **Helena Consolidated Mines, Inc.**, Niemann Sledge, superintendent, Box 25, Calistoga.

R. Duncan has acquired the **Enterprise Extension** mine located in the Quartzburg district near Hornitos, California, from Mrs. Edna Van Ness. He has extended the shaft to 118 feet and has run 85 feet of drifts from the bottom of the shaft. Duncan has been associated with the **Cactus Mines Company**, Mojave, California.

Work has been resumed at the **Three Queens** mine near Foresthill, California, with a crew of six men employed. Development is going forward on the 300-foot level where the crew is driving toward the mineral zone in a fault. The mine, which was reopened early in June by Bert C. Austin, 417 Balfour Building, San Francisco, California, is equipped with a 10-stamp mill and electric power facilities. W. J. Bathurst is superintendent.

Dave M. Rea is preparing the **Red Star** gravel mine near Foresthill, California, for active operation during the next hydraulic season. A crew of 20 men is engaged in reconditioning the property and a sawmill has been set up to supply material for construction of four miles of flume. Ten miles of ditch will also be built to tap water resources in the lower end of French Meadows.

Milling operations have been started at the **Lucky Baldwin** mine near Lake Baldwin, San Bernardino County, California, under the direction of John F. Wood, assistant manager of the **Big Bear Mines, Ltd., Inc.**, Big Bear Lake, California. The mill has been equipped with electric power and additional machinery, bringing its capacity up to 150 tons per 24 hours.

**American Potash and Chemical Corporation**, Trona, California, reports for the six months ended June 30, 1941, an estimated net loss of \$72,222 after charges, federal income taxes, and depreciation of \$371,183. This compares with a net profit of \$921,174 after depreciation charges of \$294,243, equal to \$1.74 a capital share, in the comparable

period of 1940. The corporation's plant at Trona was closed by a strike from March 14 to July 2 of this year.

**Darwin Consolidated Tungsten, Inc.**, recently organized with 25,000 shares of \$1 par stock, has been authorized to issue 5,000 shares. The company is a close corporation. Holdings of the organization at Darwin, California, are under lease and bond to the E. L. Cord interests, 9730 Wilshire Boulevard, Beverly Hills, California, and it is reported that 100 tons of ore are being treated daily at the Keeler mill. Installation of a mill at the Darwin property is reported to be contemplated. Meanwhile, Darwin Consolidated is developing another property, the Lone Deer, at Convict Lake near Darwin.

The 500-cubic yard dredge of the **Tuolumne Gold Dredging Company**, which capsize near La Grange, California, last April, is being salvaged and will be placed in operation again. The pond was drained and heavy supports placed under the dredge, following which water was again run into the pond to provide buoyancy. Heavy cables are being used to right the boat, each cable provided with a special testing device to keep the strain equal at all times. When completely righted, the dredge will be placed in dry dock for final repairs to damaged sections. Work is being directed by Walter Martinoni, chief salvage engineer. A. D. Hughes is local manager for the company.

A crew of 40 men is employed at the property of **Shoshone Mines, Inc.**, operating the Noonday and Gunsite properties near Tecopa, California. Drifting is proceeding in ore which runs from \$50 to \$60 a ton in gold and silver. Ore is shipped to the Murray plant in Utah. George Kingdon, 1975 Sunset Boulevard, San Diego, California, is president of the company. W. Buford Davis, 947 Tiverton,

Apartment 1, Los Angeles, is vice-president and general manager.

J. Lex Brown, owner and operator of the **American Magnesium Developing Company**, plans construction of a 12-mile road from his **Eagle Pass** magnesite mine in the Eagle Pass district southwest of Needles, California, to permit shipment of ore by railroad. Brown is reported to have completed a contract for delivery of 100,000 tons of magnesite ore to a reduction plant at Corning, New Jersey. He is also said to be planning shipments to the proposed magnesium plant to be built near Las Vegas, Nevada. R. B. Kincannon, Needles, is engineer in charge.

The **Indian Valley Mining Company**, which operated the Standart mine near Greenville, California, has been liquidated, all mine equipment has been disposed of, and the mine has been closed down for an indefinite period. The company was headed by C. L. Hibbard, 1210 Western Avenue, Seattle, Washington.

A. C. Most, manager, is in charge of work at the **Adobe** quicksilver mine in the Del Puerto Canyon district west of Patterson, California, where equipment is being assembled preparatory to active operations. Peter Saracco, Saracco Tank and Welding Company, 1850 Seventeenth Street, San Francisco, California, is interested in the property, and he has had a 50-foot kiln constructed for installation at the mine. Operators of the property have obtained mining rights to a 3,000-acre tract surrounding the mine.

The **Argonaut Mining Company, Ltd.**, Jackson, California, reports for the quarter ended June 30, 1941, a net profit of \$16,737 after all charges except depletion and federal income taxes, which is equal to 8.3 cents a share on 200,000 shares. Exact comparable figures for the second quarter of 1940 are not available. Indicated net for the first half of 1941 is \$32,393 or 16.1 cents a share, and compares with an estimated net loss of \$10,055 in the first half last year. Gross receipts for the second quarter are calculated at \$170,160, equal to \$7.56 a ton on the 22,500 tons milled. Costs ran to an estimated \$7.19 a ton.

**William Richter and Sons**, Downieville, California, is operating a dredge in the channel of the middle fork of the Yuba River near Camptonville, California. Operations are on a three-shift basis with 12 men employed, and the plant is handling 3,000 yards of gravel daily. William C. Richter, superintendent at the property, reports values are satisfactory.

J. O. Pulse, Livermore, California, is negotiating for reduction plant equipment to be installed at his property in the Mount Boardman district. Claims in the district are said to contain values in chrome, cinnabar, and manganese.

The new 35-ton mill recently installed at the **El Dorado Argonaut** mine two miles northeast of Greenwood, California, is treating 30 tons of ore daily. A new compressor is being installed at the mine and a flotation unit is being added to the milling plant. A crew of eight men is employed. The mine is operated by Oliver

**AVERAGE PRICES OF METALS**  
(Figures by American Metal Market)

	Copper Per Lb. Conn. Valley	Lead Per Lb. New York	Zinc Per Lb. St. Louis	Silver Per Oz. New York
1924	13.024	8.097	6.344	66.781
1925	14.042	9.020	7.622	69.065
1926	13.795	8.417	7.337	62.107
1927	12.920	6.755	6.242	56.370
1928	14.570	6.305	6.027	58.176
1929	18.107	6.833	6.512	52.993
1930	12.982	5.517	4.556	38.154
1931	8.369	4.244	3.638	28.701
1932	5.792	3.181	2.881	27.892
1933	7.276	3.870	4.031	34.728
1934	8.658	3.8595	4.162	47.973
1935	8.880	4.0648	4.331	64.273
1936	9.710	4.7091	4.903	45.088
1937	13.391	6.0085	6.517	44.805
1938	10.225	4.7388	4.613	43.222
1939	11.197	5.0531	5.117	39.082
1940	11.528	5.1788	6.339	34.773
1940				
Jan.	12.216	5.4712	5.644	34.75
Feb.	11.405	5.0761	5.543	34.75
Mar.	11.385	5.1923	5.75	34.75
Apr.	11.327	5.0712	5.75	34.75
May	11.324	5.0154	5.808	34.949
June	11.375	5.00	6.24	34.825
July	10.812	5.00	6.25	34.75
Aug.	10.954	4.8537	6.398	34.75
Sept.	11.536	4.9292	6.937	34.75
Oct.	12.00	5.3077	7.25	34.75
Nov.	12.00	5.7283	7.25	34.75
Dec.	12.00	5.50	7.25	34.75
Ave. 1940	11.528	5.1788	6.339	34.773
1941				
Jan.	12.00	5.50	7.25	34.75
Feb.	12.00	5.6023	7.25	34.75
Mar.	12.00	5.7654	7.25	34.75
Apr.	12.00	5.85	7.25	34.75
May	12.00	5.85	7.25	34.75
June	12.00	5.85	7.25	34.75
July	12.00	5.85	7.25	34.75
Aug.	12.00	5.85	7.25	34.75

Dupuis, Greenwood; Bryant Moore, Exeter, California, and Jack Sisler, Box 527, Visalia, California.

The Lobicasa Company, Box 812, Sacramento, California, which has an operating agreement with the City of Stockton, California, for mining the gravel deposits within the high water area of the Stockton flood control dam, has added to its mining equipment. The second unit is a 1 3/4-yard dragline and augments the present three-yard boat. A crew of 20 men is employed on the project. It is understood that the company plans to complete its dredging operations this year.

A. W. Ellis of Palos Verdes, California, owner of the Ellis Engineering Company of San Francisco, has taken over the Comet gold mine two miles north of San Andreas, California, on the Mother Lode highway. The property is equipped with a 13-stamp mill and a Diesel power plant, and the mine is opened by a two-compartment shaft. Both the mine and mill are being given an initial test run before any changes in the present mining and milling practices are considered.

Work is nearing completion on the 1,000-ton tungsten concentrator of the U. S. Vanadium Corporation at Bishop, California, with a crew of 150 men employed on the construction work. The new plant is being built under the supervision of the Stearns-Roger Manufacturing Company of Denver. U. S. Vanadium is employing 450 men in operation of its existing plants and mine, and in construction of an aerial tram from the mine to the mill, a distance of 11,000 feet. The tram, of all-timber construction, will carry 100 tons an hour from the mine to the mill, and it is expected to be completed in September. The mine at present is supplying 500 tons of ore daily to the old mill, entirely from development work. The ore carries 1/2 per cent tungsten and 1 per cent molybdenum. M. N. Shaw is superintendent of the Pine Creek unit; K. G. Link is mine superintendent; and J. V. Galloway is mill superintendent, all of Bishop.

The Pelican properties near Placerville, California, operated during the first World War, have been reopened by the United States Chrome Mines, Inc., A. H. Wild, president, Russ Building, San Francisco, California, and are producing an average of 30,000 tons of ore monthly. Concentrates are said to run about 50 per cent. Shipments are made to the Rustless Iron and Steel Company of Baltimore.

Actual milling operations will begin soon at the Feliciano mine 15 miles north of Mariposa, California, on the Yosemite Highway. Milling machinery from the Black Oak mine at Garden Valley, California, has been installed at the mine by Russell J. Wilson, 7 Hazel Street, Larkspur, California. Wilson formerly operated the Black Oak. Steady development has been carried on at the Feliciano for more than a year and recent mill tests showed \$37.50 ore. The vein has been cut on three levels and more than 1,000 tons have been blocked out. Fifteen men are employed in two shifts under the direction of William Bessler, mine superintendent. James Franklin is mill superintendent and Francis Freder-

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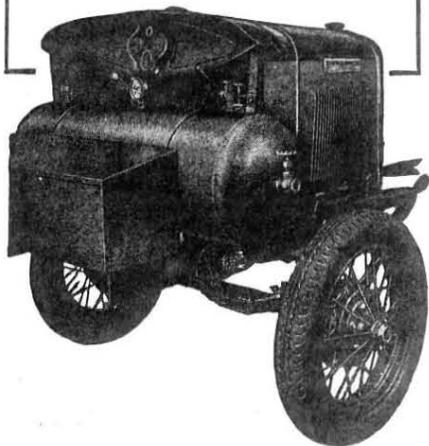
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ick, 2527 Hearst Avenue, Berkeley, California, is in charge of all geological work. The Feliciano is owned by the Gold Ledge Mining Company, John Cummings, secretary, Russ Building, San Francisco, and has been held under lease by Ricoro Mines, Inc., Walter Gleason, Shell Building, San Francisco. The latter company subleased the property to Wilson.

Philip Sutter is reported to have purchased the **Gold Wreath** mine in Quartz Valley near Yreka, California, from John Lewis. Extensive open pit mining is said to be planned, and mine machinery and two mills, each capable of handling 75 tons of ore daily, will be installed. A boarding house and other surface buildings will also be constructed. Roads have been built and sites cleared for projected buildings. A crew of 80 men is expected to be employed.

Work is nearing completion on construction of a new 300-ton mill at the property of **Madre de Oro Gold Mines, Inc.**, W. J. Loring, consulting engineer and general manager, El Dorado, California. The mill consists of twenty 1,150-pound stamps; two Hardinge ball mills in closed circuit with a Dorr classifier, Pan American jigs and Pan American flotation cells. The plant is also equipped with conditioner tanks, thickener and filter. A 200-horsepower double-drum hoist is being installed at the mine, and a new 750-cubic foot duplex compressor will replace a smaller one now in use. The main, three-compartment shaft is 1,200 feet deep and the mine has been opened at 10 levels. Forrest Riley, First National Bank Building, Corcoran, California, is president of the company; B. H. Winslow is vice-president; and Hazel Riley Mitchell is secretary-treasurer. A crew of 26 men is employed. The company operates the Church, Independent and Starlight gold mines in El Dorado County.

The quicksilver furnace at the Blue Can mine in Humboldt County, Nevada, is being dismantled and will be moved to the Red Rock mine of the **Red Canyon Mining Company** in the Cachuma district of San Luis Obispo County, 12 miles east of Los Olivos, California. Dismantling of the plant is under the direction of C. D. Thomas, formerly mine superintendent at the Cortez Consolidated and subsequently at Bottle Creek under Greenan. W. G. Donaldson, engineer for the James O. Greenan Company, has severed his connections with Greenan in order to enter the mining field for himself, and has become associated with the Red Canyon Mining Company. Hugh Wright, Box 17-A, Solvang, California, is president of the Red Canyon company.

COLORADO

Average daily production from the **Cresson Consolidated Gold Mining and Milling Company** at Cripple Creek, Colorado, is 350 tons of ore. A total of 203 men is employed, including 120 in the mine. A. H. Bebee of Independence is

general superintendent and John Stark of Cripple Creek is assistant mine superintendent. M. E. Shoup is company president. The company reports a net profit of \$26,342 for the three months ended July 31, 1941. During this period 35,344 tons of ore were handled, with a gross value of \$323,060 and an average gross value of \$9.14 a ton. About half the production was made by lessees. Development work is being carried on on the 1,100, 1,200, and 1,400-foot levels and some work is under way on the newly drained 1,800 level, now 75 feet above the water level. It is estimated that mining on the 1,800 level will be started around January 1. The company paid a 2-cent dividend August 15, which amounted to \$24,400 and brought the grand total to \$13,454,872.

A. M. Woodworth of Sargents, Colorado, reports a small daily production from his **Steuben** mine which includes the Legal Tender and Pochontas mines in the White Pine district of Gunnison County. The mine is an old gold-silver-lead producer, located above timberline. Production was interrupted some years ago by the presence of zinc with the other values. It is owned and worked by Woodworth.

About 18 tons of gold ore are being produced daily from the **Ingram** mine near Boulder, Colorado. Harrison S. Cobb, Salina Route, Boulder, is the lease owner and employs seven men in the mine. The property, leased from the Ingram Gold Mines, Inc., of St. Louis, Missouri, is opened by approximately 10,000 feet of workings.

The **Midnight Mining Company**, F. D. Willoughby, Box 188, Aspen, Colorado, president and general manager, is employing 25 men and producing about 30 tons of silver-lead-zinc ores daily. The company recently relaid the rails in the tunnel the full length, 6,700 feet, replacing the 12-pound with 16-pound rail. The 230-foot inclined shaft has been completed, skip installed, etc. Sinking on ore will be continued. Filters and thickeners were installed in the mill and a new change room is being completed. All equipment has been reconditioned or replaced and no new additions are contemplated. The mill is a 50-ton flotation plant. Willoughby's sons assist in the management of the company, F. J. Willoughby as general superintendent and Fred T. Willoughby as mine superintendent.

Besides regular shipments of mill concentrates, about six carloads of high-grade ore are being shipped weekly to the Leadville smelter from Creede, Colorado. The mill is operated by the **Creede Mills, Inc.**, and handles over 100 tons of silver-lead ore daily. The ore comes from the properties of the **Emperius Mining Company** and the **Creede Leasing Company**, including the New York, Last Chance, Del Monte, and Pittsburgh mines of the former and the Commodore-Bachelor, Ochre, Equinox, and Amethyst mines of the latter concern. B. T. Poxson, 695 Locust Street, Denver; Thomas P. Campbell, Patterson Building, Denver; and George H. Garrey, 1555 Sherman Street, Denver, are the three leaders of the mining and milling enterprise which revived the camp of Creede.

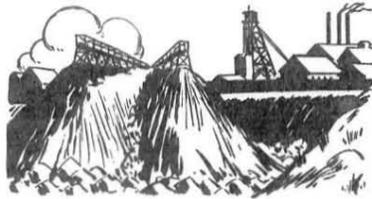
**U. S. G. S. STUDIES TUNGSTEN DEPOSITS IN SIERRA NEVADAS**

AS PART of a program now carried on by the Geological Survey for investigating the strategic mineral deposits of the United States, D. M. Lemmon, a survey geologist, has studied the tungsten deposits in the Sierra Nevada near Bishop, California. This district includes the Pine Creek mine of the United States Vanadium Corporation, which has the largest proved ore reserve of any tungsten mine in this country.

Most of the deposits examined by Lemmon are in the High Sierra, a region of rugged topography and severe climate, and lie at altitudes of 10,000 to 13,000 feet. Prospecting is difficult under these conditions, and only in recent years has the increasing demand for tungsten resulted in serious exploration of the tungsten deposits, some of which were first discovered more than 20 years ago, during the first World War.

The ore bodies in the region are found only along contacts between the granitic rocks which underlie the greater part of the Sierra Nevada, and remnants of the sedimentary rocks that the granitic rocks invaded. Most of these remnants are elongated masses that taper downward; they are commonly referred to as "roof pendants." Many of the known deposits have been found along a discontinuous belt of these pendants which extend for nearly 50 miles. Limestone beds in the invaded sedimentary rocks have been altered to aggregates of garnet and other silicate minerals at the granite contacts; and the tungsten mineral scheelite is found only in parts of these silicate masses. As the size of each ore body depends in part on the size of the silicate mass in which it lies and in part on the distribution of scheelite within the mass, the ore bodies differ greatly in size.

By far the largest proved reserves of tungsten ore in the region are on the United States Vanadium Corporation property, in the Pine Creek pendant. The developed ore on this property amounts to several million tons of rock that contains one-half of one per cent of tungsten trioxide and one-half of one per cent of molybdenum trioxide. It is possible that several times this tonnage may be present



in ground still unexplored. The combined tonnage of probable ore indicated by the surface exposures in the other deposits visited by Lemmon is about 750,000 tons, with an average grade approaching one-half of one per cent. Underground development may prove that double this amount is available.

The Pine Creek mine, which is on a branch of Morgan Creek, ranges in altitude from 10,750 to 11,370 feet and is about 27 miles by road from Bishop. It is developed by four adits, several sub-levels, and a large open cut. The ore is delivered to a new mill having a capacity of 2,500 tons of 60 per cent tungsten trioxide concentrate per year. The mine has two ore bodies: the southern one is 400 feet long on the surface, more than 400 feet deep, and 4 to 60 feet wide; the northern one is 2,500 feet long on the surface, more than 700 feet deep, and from 10 to 100 feet or more wide. In addition to tungsten and molybdenum, the ore contains recoverable gold and copper.

The Tungstar mine is on the west shoulder of Mount Tom at an altitude of 12,000 feet. It has two ore bodies, only the lower of which is being worked. This body is about 100 feet long and 20 to 40 feet wide at the surface and is more than 60 feet deep. About 17,000 tons of ore containing 2.6 per cent of tungsten trioxide had been produced by February 1941. The upper body is about 200 feet long and 30 to 95 feet wide at the surface. It is composed of irregular scheelite-bearing masses in marble and about half of it appears to be barren.

Tungsten has been found in at least 11 other small mines and prospects in the area, all in similar geologic settings. Although in the aggregate the reserves represented by these workings are considerable, the individual bodies are probably small.

**HOMESTAKE REPORTS DECREASE IN SIX-MONTH NET PROFIT**

A DECREASE in net profit for the first six months of 1941 is noted by the Homestake Mining Company in a report for the period ended June 30, 1941. The company showed a net profit of \$2,822,373 after federal income taxes, which is equal to \$1.40 a share and compares with \$3,623,245 or \$1.81 a share in the first half of 1940.

Company operations are at Lead, South Dakota, under the general management of Guy N. Bjorge, and interest is presently centered upon the completion of a \$13,000,000 construction program which has been underway since 1932. The new \$3,000,000 Yates shaft, which will ultimately reach a depth of 5,000 feet, is nearly finished. One of the largest mining shafts in the world, it has overall dimensions of 28 by 15 feet in which are seven compartments—two for ore buckets, two for cages, one for pipes and power cables, one for a manway ladder, and the seventh for a runabout cage. This is the second new shaft to be constructed by the company in the last nine years, the other one being the 4,100-foot Ross shaft which will ultimately be carried down to the 5,000-foot level.

The surface plant which belongs to the Yates unit includes the main hoist building and motor generator room, headframe and crusher structures, storerooms in the shaft below the collar, change room and lamp house, and three tunnels radiating from the shaft. The conical shaped hoist drums are grooved to wind 5,600 feet of 1 7/8-inch cable. The hoisting units will raise their 60,000-pound load up the shaft at the rate of 3,000 feet a minute. The hoists have been in operation on construction work since last April, but have not been used in production. Other important buildings completed by the company during the past nine years include a reinforced concrete compressor building, mine carpenter shop, mine office building, \$1,250,000 steam power plant, stamp mill addition, new assay office, and a refinery and \$300,000 sawmill at Spearfish 20 miles north of Lead.

Mining operations are being carried on on 23 levels from the 900 to the 4,700-foot level. Production last year totaled 1,433,737 tons, with an average recovery of

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## RUSTLESS NOW HAS TWO PACIFIC COAST OFFICES

**T**HE RUSTLESS MINING CORPORATION, operating chrome properties in California and Oregon, now maintains two offices on the Pacific coast. The Sacramento, California, office, located at 504 Farmers and Mechanics Building, is in charge of Robert H. Sayre, vice-president; while the other is located at Grants Pass, Oregon, and is under the direction of H. F. Byram, vice-president, who is addressed at Box 516, Grants Pass.

The Rustless corporation is a subsidiary of the Rustless Iron and Steel Corporation, which has headquarters at Baltimore, Maryland.

## OPALITE DISTRICT IN NEVADA GIVEN ENCOURAGING FUTURE

**G**EOLOGIC conditions in the Opalite quicksilver district of Nevada warrant the hope that new ore bodies will be discovered by more extensive prospecting, according to the report by R. G. Yates of the U. S. Geological Survey, who recently examined the area as a part of the investigation of domestic deposits of strategic minerals being made by the survey. The district, the center of which lies about 15 miles west of McDermitt, Nevada, is about 20 miles in diameter and lies partly in Malheur County, Oregon, and partly in Humboldt County, Nevada. It includes the Opalite, Bretz, and Cordero mines and one undeveloped prospect.

The rocks of the district are horizontal lava flows of Miocene age overlain by lake beds of late Miocene age. They are cut by steep-dipping faults, and parts of the fault fissures were channels for ascending cinnabar-bearing solutions. The ore deposits are mainly lens-shaped masses of silicified lake-bed material called "opalite," but some ore occurs in unsilicified lake beds adjacent to the "opalite." All the ore bodies that have been found are within 100 feet of the surface. Siliceous ore has yielded an average of 6 pounds of quicksilver to the ton; nonsiliceous ore has yielded about 19 pounds to the ton.

From 1927, when production began, to the end of 1940, the district produced 22,174 76-pound flasks of quicksilver. Of this, the Opalite mine produced 12,124 flasks and the Bretz mine 10,019 flasks. Operations at these mines were discontinued in the spring of 1941, because the known ore bodies had been practically exhausted. The Cordero mine produced only 31 flasks prior to 1941, but extensive exploration has blocked out 15,000 tons of ore containing an average of 15 pounds of quicksilver to the ton, or about 3,000 flasks in all, and potential reserves of

50,000 to 100,000 tons of ore that will average about 5 pounds to the ton. Further exploration might reveal even greater quantities of potential ore. The property, therefore, can almost certainly produce at least 3,000 flasks of quicksilver, and at present prices it might produce several times that much.

Three areas are particularly promising. One lies between the old pits and the 1940 pit of the Bretz mine; another includes the silicified rocks a quarter of a mile southeast of the old Bretz mine, and still another lies 1½ miles south of the Opalite mine. All the tuffs and sedimentary rocks adjacent to the silicified rocks at the Disaster Peak prospect seem to be possible host rocks for cinnabar.

## MEXICO INCREASES ITS MERCURY PRODUCTION

**M**EXICO'S mercury production during the first four months of 1941 totaled 340,000 kilograms, according to an announcement by the ministry of national economy. This is more than triple that for the same period of 1940, when the output totaled 106,899 kilograms. The mercury output for April 1941, the most recent month for which official figures are available, was 132,421 kilograms, of which 130,884 kilograms were exported. Of that amount 122,629 kilograms went to Japan, 4,460 to the United States, and 3,795 to the Argentine. Mercury production in March 1941 was 66,311 kilograms.

## PRODUCTION TO BE RESUMED AT SOUTH DAKOTA TIN MINE

**A**LARGE bucket lift will be installed in the near future at the Cowboy tin mine near Hill City, South Dakota, and will replace the present pumping unit. Unwatering operations are in progress at the mine and when they are completed, the workings will be reconditioned for operations. It is expected that the ore body will be reached early in September.

## IMPETUS GIVEN TO MINING IN XIHU DISTRICT OF MEXICO

**L**ARGE amounts of tools, equipment, and explosives have been shipped to the Xihu district near San Luis de la Paz, Guanajuato, Mexico, pending early resumption of work by several gold-silver-lead mines. The properties were abandoned some time ago because of poor market conditions.

As a result of the recent activity, the Guanajuato government has started reconditioning the road which it built between Xihu and San Luis de la Paz, but which has been damaged by heavy rains.

## GALVANIZED IRON STRIPS FOR MARKING MINING CLAIMS

By Hugo W. Miller

**O**NE OF the most exasperating experiences that the average prospector or engineer encounters upon going into a new district to look over mining possibilities is the difficulty of identifying mining claims. Usually he finds a lot of piles of rock or so-called mining monuments which are self-evident boundaries of claims located at some time or other, but owing to the lack of any marks from which he can learn who claims the ground, or the name of the claim from which records could be checked, much time is lost.

The common practice of putting a small piece of paper in a tin can in the rock pile is very unsatisfactory because rats or weather conditions frequently destroy the paper, leaving an empty can. Also, the ordinary paint on a pole usually weathers off in a few years.

During my efforts to find something that would really stand up, I encountered a sheet-metal worker who told me that he etched his galvanized iron work with a solution and that the etching was plainly readable after 25 years. Small strips of discarded galvanized iron about two or three inches wide and from six to 10 inches long can be secured from most tinsmiths for little or no charge and afford convenient markers for mining claim corners.

The materials for the solution are very inexpensive and can be made up according to the following formula at any assay laboratory or drug store:

To a mixture of 30 c.c. of water and 15 c.c. of hydrochloric acid add in order: 3 grams of iron sulphate, 2 grams of copper sulphate (bluestone), and 1.5 grams of zinc metal or shot.

The resulting solution is applied with a soft pine stick or match which is dipped into it and then used as a pencil on the galvanized iron. The acid, upon being applied to the iron, immediately turns black and dries within a few minutes. Later it may turn white with the formation of zinc salts, but a light water wash will restore the black color. A coat of lubricating oil or boiled linseed oil prevents oxidation and the formation of white salts.

Markers made with these etched metal strips nailed to four-foot poles placed at the corners of a claim will immediately inform the investigating public as to the name of the claim and the relative position of the corner. The method is inexpensive, simple, and an aid to all concerned. Its general use should establish greater respect for unpatented mining claims and make the owners' rights to them much more secure.

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## Tamping A Heavy Charge by Fisher Vane

**A** WIDENING group of men on the production end of assorted strategic metals is beginning to wonder just how much of this "shortage" stuff is the Real McCoy and how much is bugaboo blah, tosh, and diaphanous moonlight. I'm aware that if this remark meets the eye of any of the OPM and OPACS boys at Washington, they'll set off a sonorous salvo of shrieks and snorts and sneers of displeasure . . . but since it's the Christian duty of this column to poke its little pocket flashlight at this and that obstruction blocking us whose patriotic duty it is to dig, mill, ship and refine the metals our Nation needs to nail Nazism, let's turn a beam or so that way.

\* \* \* About the most available way to prove or disprove the answer to the shortage question is to study the figures disclosed by the nation-wide inventory that got under way early this month, fathered by the President's new Supplies Priorities and Allocation Board at Washington (the SPAB). And even as that little chore was nicely started, there was a widespread public suspicion that some of the so-called "metal shortages" being yowled about, and waved in the press headlines, were fabricated from the same brand of gauzy moonshine as was the East Coast "gasoline shortage" bred of the balmy brain of that benevolent benefactor of our metal mining industry—Harold Ickes.

\* \* \* As this is written, we hardrock miners don't know what answer that survey will yield. The suspicious public doesn't know. But what I am wondering about is . . . when the priorities propagandists pass out their findings, will the public believe what they see in the papers, or will they pull wry faces and call the report another Aesop fable? Regardless of that, it's up to the government agency responsible for these increasingly irritating priorities rulings, these spreading attacks of nerves in the manufacturing and construction fields where metals are the materials, to inform accurately (a) itself, and (b) the public.

\* \* \* Ere we dismiss the thought, let it be added that up to date it has looked, from our metal-production angle, as if perhaps a few big manufacturers high in Administration favor and on the priority lists might have been able, by foxy wangling, to accumulate in their back rooms nice stocks of these metals—way beyond their immediate needs. There is more than fleeting reason, also, to suspect that the Army and Navy may have been tarred with the same brush.

\* \* \* Don't take that to mean that I feel, or ever will feel, that an ounce of metal **TRULY NEEDED RIGHT NOW** for defense should be turned to any other use. What I do mean is that we need **ACCURATE CONVINCING PROOF** we are justified in expecting from the SPAB survey in progress. If that inventory, plus rational allocation, heads off even a part of the threatened curtailment of consumer goods made of metals, reflex effects will be a big gain for our industry.

tons of tailings have been cleaned up, it is planned to handle ore from the mine, which is being reconditioned. The mill has been completely re-equipped and machinery now includes a 64½ Marcy ball mill; an Edinger jig between ball mill and a duplex classifier; a conditioner tank; four-cell Fagergren flotation unit, and table. The plant is powered by a 160-horsepower Cooper-Bessemer Hot Head and V-belt driven generator. Other equipment includes a 350-cubic foot Caterpillar-Chicago Pneumatic compressor. A crew of 14 men is employed at the mine under the direction of J. Robert Clarkson, general superintendent, Klondyke. Tom Massey is mine foreman. Officials of the company include Richard Bard, president, and Hugh B. Martin, general manager, 811 West Seventh Street, Los Angeles, California.



Testing operations are nearing completion on Trinity County gravel deposits of **Havilah Gravels, Inc.**, and installation of a two-yard dragline dredge is planned for the near future. G. K. Roscoe, Bloomfield Star Route, Nevada City, California, is superintendent of the company.

The **Lind Mining Company**, P. R. Bradley, Jr., manager, Bear Valley, California, is operating its recently rehabilitated flotation mill on a 24-hour basis, and during the first 10 months of operation will handle approximately 100 tons of ore daily. Development of additional ore reserves will be continued. Around 40 men are employed at the property, which is located near Hornitos in Mariposa County, California.

Steady operations are in progress at the **Jamison mine** near Johnsville, California, where several lessees are engaged in developing veins of ore beyond the old productive area. The property is equipped with a 35-ton mill and is owned by Colonel C. A. Lundy, Blairsden, California.

The **Portola Corporation**, Johnsville, California, is continuing rehabilitation of the 4,200-foot main working tunnel at the **Plumas Eureka mine**. Upon completion of the present work it is planned to develop deposits of commercial gold exposed in old workings. There also is said to be an extensive area of undeveloped ground available.

The '49 Flat gravel mine, which has been shut down because of lack of water, has been reopened by **Hart Barker**, Volcano, Amador County, California. The property is located on the north fork of **Rancheria Creek** between Volcano and Fiddletown.

A drift being run to the **Lowry shaft** at the **Ruby mine**, Goodyears Bar, California, for drainage purposes is expected to be completed in the near future. An **Eimco-Finlay loader** is used in the work. Following completion of the drift, it is planned to carry on exploratory work consisting of breasting and drifting. L. L.

**Huelsdonk**, Goodyears Bar, is resident manager; **William T. Reed, Jr.**, Box 26, Downieville, California, is underground foreman; and **A. R. Hinton**, Goodyears Bar, is chief electrician and master mechanic.

The main shaft has been unwatered to the 300-foot level, and exploratory work is being carried on at the 200 and 100-foot levels at the **St. John mine** located about a mile north of Grass Valley, California. Erection of a 60-foot headframe with electric hoist has been completed and machine shops, office, and living quarters have been constructed. The property was reopened last spring by **Ed C. Jacobs** of Nevada City, California, who had held a lease and option on the mine for nearly five years. An old Cornish pump practically intact with buckets, chains, and shovels estimated to be over 50 years old was removed from the shaft. The **St. John** is credited with being a large producer in the late '80s.

A raise has been driven at the property of the **Lava Cap Gold Mining Corporation**, Nevada City, California, connecting the sixth level of the **Banner mine** and the seventh level of the **Lava Cap mine**. The connection will serve as an escape exit in case of fire and as a means of better ventilation for the lower level of the **Lava Cap**. The mining company employs a crew of 300 men under the direction of **Otto Schiffrer**, general manager.

**Charles A. Isham**, geophysical engineer, 230 Redwood Avenue, North Sacramento, California, has been engaged in making a detailed geological map and report on holdings of the **Deadwood Mine Syndicate**, Dr. E. A. Julien, president, Sierra Building, Turlock, California. The syndicate controls a tract of land just north of **Saddleback Peak**, near Downieville, California. An extensive exploration program has been started, under the direction of **Isham**. Work has been discontinued for the summer, but it is planned to bring in drills in the spring to continue the program.

Estimated operating profit for August amounted to \$98,100 for the **Alaska Juneau Gold Mining Company**, P. R. Bradley, president, 1022 Crocker Building, San Francisco, California, as compared with \$102,100 for July 1941, and \$97,500 in August of last year. This is before deductions for depreciation, depletion, and federal income taxes. Increased operating expenses and a poorer grade of ore offset increased production, thus accounting for a lower operating profit. Estimated operating profit for the first eight months totaled \$931,800, as compared with \$789,100 for the same period of 1940.

The **Palisades mine** of the **Helena Consolidated Mines, Inc.**, Calistoga, California, is being shut down, due to failure of the property to meet operating expenses. Underground workings are being stripped of all machinery and the milling plant will be dismantled. The **Helena** company is headed by **J. H. Hare** and **Phil Cox**.

**S. H. Strickland**, **Henry Bennett**, and **James Davis**, all of Porterville, California, are associated in the development of a tungsten property in the **Yokohl Valley** on

land leased from Will Gill, Porterville cattleman. Roads are being built to the property and a mill is to be installed within 90 days to handle the ore, described as being in a garnet formation. Johnson and Racey of Los Angeles are reported to be backing the project.

E. T. Drake, Silver City, Nevada, and associates of Reno, Nevada, are reconditioning a long raise above the Colorado tunnel of the Zaca mine near Markleeville, California. The raise has been retimbered for more than 50 feet and by the first of October the operators expect to penetrate ground believed to contain high-grade ore.

Ore being mined in development work is being milled in the new 50-ton plant recently installed at the Monte Cristo mine near Mammoth Lakes, California. The mill is running eight hours a day while it is being broken in but soon will be placed on a 24-hour schedule. The plant consists of a jaw crusher, 50-ton Marcy ball mill, and flotation equipment. It is so arranged that its capacity can be stepped up to 100 tons daily whenever desired. Ore taken from rich pockets is mixed with the lower grade to give an average of \$25 ore for the mill. Assays have run from \$9 to \$142. The ore is ground to 80 mesh or smaller and concentration is 120 to 1, with the present extraction reported to be 92 per cent. Deleterious substances in the ore are eliminated in flotation, and metals other than gold and silver are sufficient to pay the cost of working the concentrates, so that the net return is full assay



value. The concentrates are trucked direct from the mill to the Selby smelter. The mining operations are to be continued throughout the winter and everything is being put under cover for that purpose. The property is operated by the Monte Cristo Mining Company, headed by Raymond Collins, R. L. Warren, and W. R. Cowan, all of Whittier, California.

The Willard mine on the west branch of the north fork of the Feather River near Paradise, Butte County, California, has been acquired under bond and lease by Captain Ed B. Keelen of Los Angeles, Oliver Dobson of Spokane, Washington, and Frank P. Smith of Bellefonte, Pennsylvania. The tunnel is being retimbered and drifting is to be started soon. It is planned to construct a mill at the property later. The mine formerly was worked by the hydraulic system. The new operators are looking for three or four lessees to work on the property.

The William von der Hellen Mining Company is operating on the Klamath River, 15 miles northwest of Yreka, California, working a bar approximately 5,000 feet in length. Equipment includes a Bucyrus-

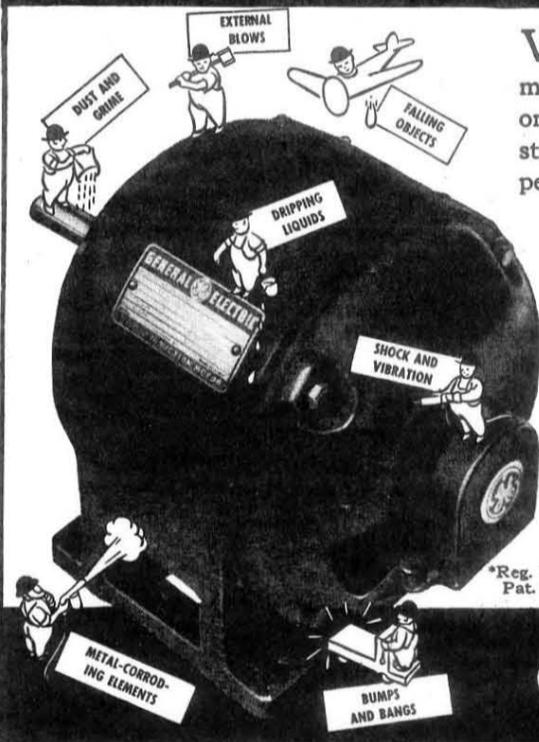
Monighan 3W dragline and a Hickinbotham Brothers washing plant. Hugo von der Hellen, Yreka, is superintendent. Oscar Hendrickson is foreman.

Mrs. W. C. Thompson is using a Hickinbotham Brothers boat and a Link-Belt Speedomatic dragline to work approximately 500,000 cubic yards of gravel 15 miles north of Yreka, California, on Highway 99. She also has added a General Motors Diesel engine and a General Electric generator set for her small stationary plant located on Humbug Creek. Future plans call for installation of a new dragline and washing plant on property held by Mrs. Thompson 54 miles down the Klamath from the present operation. James Booth, Yreka, California, is superintendent.

The initial accident in the new plant of the Permanente Corporation, located about 15 miles west of San Jose, California, cost the lives of three men. Magnesium in powdered form was being poured through a tube when a rubber collar parted, spilling the magnesium, which burst into flame. Three workmen caught in the intense blaze were so badly burned that they died after being taken to the San Jose hospital. Keith Corey, engineer, and Neil Collins, plant superintendent, received minor burns in extinguishing the fire with special apparatus provided for the purpose. The new plant was not seriously damaged, and it was indicated that the fire would not materially delay further operation. Testing is in progress at the plant on the extraction of magnesium by means of a new carbo-

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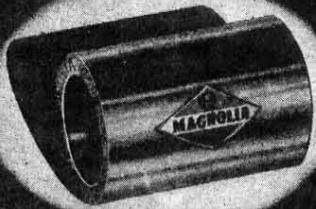


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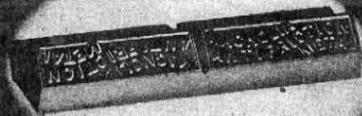
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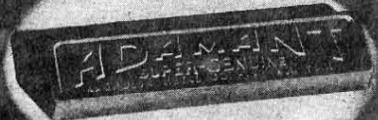
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thermic process developed by Dr. Fritz Hansgirg, an Austrian scientist now living in California. The Permanente Corporation is headed by Henry J. Kaiser, Latham Square Building, Oakland, California, who has bought U. S. rights to patents covering both extraction and fabrication by this process.

Copper ore, believed to be the extension of the Walker vein, is reported to have been opened up in the **Walker Extension** mine near Taylorsville, Plumas County, California. The mine is owned by Mrs. A. L. Beardsley of San Jose, California.

The **Empire Star Mines Company, Ltd.**, Grass Valley, California, discontinued operations September 1 at its **Pennsylvania** mine in Browns Valley, and the mine is to be completely dismantled. Work at the **Dannebrog** mine, also in Browns Valley, will be continued for a few months longer in order to further prospect some of the ground which is being opened up. If this work is unsuccessful, that mine also will be closed. The company has carried on extensive development work at the properties, including installation of a mill and the most modern working equipment, both on the surface and underground. Some time will be required to remove tracks, pipes, and other equipment from underground, after which the pumps will be pulled and the workings will be allowed to again fill with water. Ellsworth Bennett, Nevada City, California, is superintendent of the **Pennsylvania** and **Dannebrog** mines.

The **Garnett Hill Syndicate** has been organized by a group of mining men to develop tungsten deposits in the vicinity of the P. G. and E. Salt Springs dam, and L. A. Smith, mining engineer of Palo Alto, California, has been placed in charge of development. Tom H. Louttit, Jr., attorney of Stockton, California, represents the group.

Several hundred acres of land in the **Thermalito** irrigation district are reported to be under option to the **Manhattan Exploration Company**, Trevor Sanks, local representative, Oroville, California. Extensive test drilling is under way on the property, which was once known as the **Ward Estate**. The operations, if undertaken, will be deep dredging, as gravel in that section is about 100 feet below the surface of the ground. This will necessitate use of a large dredge and a double stack in order that the land may be leveled as the work progresses.

The **Golden Feather Dredging Company**, E. A. Wiltsee, general manager, Pacific Union Club, San Francisco, California, is mining gravel bars on the south bank of the **Feather River** within the city limits of Oroville, California. A dragline dredge is moving between 5,000 and 6,000 cubic yards of material daily. The city receives a 10 per cent royalty on all gold recovered from property owned by the municipality. There is said to be sufficient acreage available for a long period of operations.

A new trommel, constructed by the **Miners Foundry**, has been installed at the property of the **Caledonia Development Company** east of Downieville, California, to replace one destroyed in blasting opera-

tions. Roger E. Jones, Downieville, is president of the company.

The **Combined Metals Reduction Company**, E. H. Snyder, vice-president and general manager, Box 132, Stockton, Utah, is operating the **Zinc** mine in the **Walker Pass** district near Kernville, California, and is shipping carbonate ore to Richmond, California. The company also plans to ship sulphide ore to its mill at Pioche, Nevada, soon.

Ground is being graded at the property of the **Imperial Smelting and Refining Company** in the **Eagle Mountains** 40 miles northeast of Mecca, California, preparatory to installation of a mill. The new plant will be located below the **Radion** tunnel. Sam Mosher, Signal Oil Building, Los Angeles, California, is president.

A crew of 25 men is employed on a three shift basis at the **Eagle's Nest** mine in Long Valley, San Diego County, under the direction of **Fargo F. Rose**, general manager, Pine Valley, California. The new shaft has reached a depth of 100 feet, and the ore taken out in sinking operations is milled at the property. A new power line is to be extended into the Long Valley district and upon its completion it is planned to construct a larger mill and to equip all other units of the mine for electric power. The property is operated by the **Long Valley Mining and Milling Company**, of which **William E. McCarthy**, Box 216, San Diego, California, is one of the principals.

A larger hoist has been installed, new buildings are being erected, and a larger compressor has been ordered for the **Cold Beef** group of claims on **Chariot Creek** near Julian, San Diego County, California. A shaft has been sunk on the vein to a depth of 100 feet and ore removed in this work is being stored on the surface pending construction of a mill. It is planned to install a milling plant as soon as stoping and drifting begin on the 100-foot level. The vein is more than eight feet wide at the bottom of the shaft and is said to average better than \$10 per ton in gold. The property, which adjoins the old **Golden Chariot** mine on the south, is under lease to **Ed Faris** and associates. Surface operations are in charge of **Ben Johnson**, Julian, and underground work is directed by **Herman Wolfe**, also of Julian.

**Le Roi Mines, Inc.**, Jackson, California, is treating 175 tons of ore daily in its milling plant, and concentrates are sent to the **Selby** smelter. The mine is developed to the 500-foot level. Operating officials include **J. L. Kellogg**, mine superintendent and **R. W. Unger**, mill superintendent. **C. A. Dobbel** is consulting engineer.

**United States Chrome Mines, Inc.**, A. H. Wild, president, Russ Building, San Francisco, California, is contemplating the installation of two separate ore processing mills in the vicinity of **San Luis Obispo**, California. It is understood that one of the plants will be built at the **Sweet Water** chromium mines seven miles from **Morro Bay** on the **Atascadero Road**, and the other will be situated at a central point, adjacent to the **Castro Extension**, London,

and Pick and Shovel mines near Camp San Luis Obispo. Mill flow sheets have been completed and water permits have been issued for the two projects. M. C. Smith, Bureau of Mines engineer, is conducting exploratory work on the Sweet Water and Castro Extension, and the size of the mills will be determined by the results of this survey. It is believed that installation of two 200-ton concentrating mills will be found to be justified. The two plants would have a production capacity of 30,000 tons of high-grade chrome concentrates annually.

Ore bodies 150 feet below the old workings are being developed at the Brunswick group of mines, also known as the Miner, near French Gulch, California. The property is equipped with a 25-ton milling plant. Present work is carried on through a 1,100-foot tunnel, and a number of crosscuts are said to have exposed substantial reserves of commercial ore. The mine is operated by B. J. Angelich and Sons.

L. C. Thornton, 1525 Fulton Street, Fresno, California, has bulldozed three miles of road in to his group of 10 scheelite claims on Jackass Mountain above Bass Lake and is assembling mill equipment in accordance with a flowsheet worked out for him by the Twining Laboratories of Fresno, California.

Lava Cap Gold Mining Corporation, Otto E. Schiffner, vice-president and general manager, Nevada City, California, has declared a dividend of 2 cents a share payable September 30, 1941, to stockholders of record September 20.



According to reports, Erland F. Fish, Room 721, 84 State Street, Boston, Massachusetts, has purchased the dredge boat and the ground ahead of the Royal Tiger Mines Company at Breckenridge, Colorado. The Royal Tiger company, the Tiger Placers Company, and the Blue River Company have been involved in bankruptcy proceedings which have been cleared with the completion of this sale. Fish is president of the Blue River concern and a stockholder in the other two companies. Royal Tiger holdings include both placer and lode properties and equipment. It is expected that disposition will soon be made of the remainder of the properties. Prior to the shutdown on August 1, 1941, the placer equipment handled 3,000 to 4,000 yards daily.

Bert Goodman of Montezuma, Colorado, has completed a road from Deer Creek up Teller Mountain to the portal of the Dwyer tunnel which he is operating. A compressor has been installed and milling equipment will be moved in this fall.

Organized as the Unity Mutual Mines, R. S. Fuller, Box 427, Odessa, Texas, and Denver, Colorado, associates are planning construction of a road to their property in the Henson Creek district of Hinsdale County, Colorado, and the erection of necessary mine buildings, providing sufficient

funds are raised. Later, the company hopes to build a mill. Values are in gold, silver, lead, and zinc. The mine is on a main road, with plenty of timber and water available.

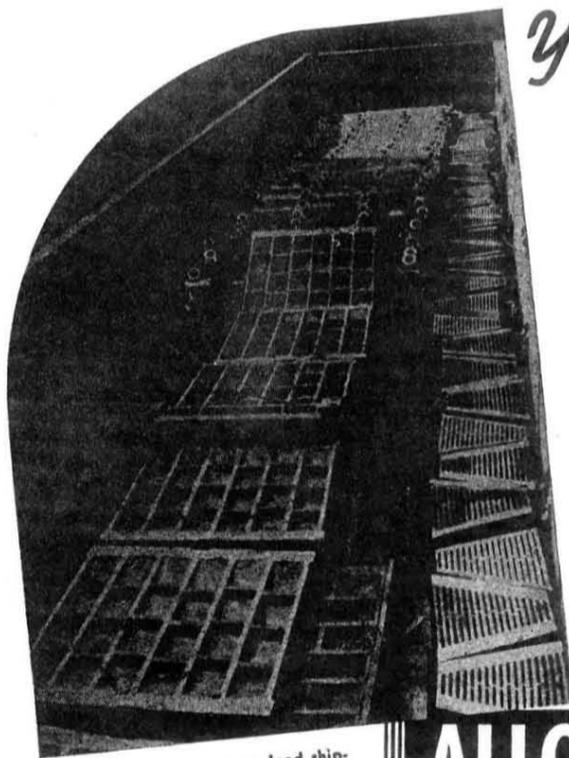
A small shipment to the Golden Cycle plant was made recently by R. J. Billings of Silverton, Colorado. Billings operates a lease on the property of the Midas Gold Mining Company in the Lime Creek district, San Juan County, near Silverton.

The Ruby tungsten property in Maggie Gulch near Silverton, Colorado, is reported to have been sold to Ely, Nevada, interests. Curtis Johnson of Durango has been working the mine, making several test shipments.

New lessees, F. E. and Thomas Lane and W. S. Baker, all of Aztec, New Mexico, are preparing to resume operations at the Rainbow mine. The property is located in the Chattanooga district of San Juan County near Silverton, Colorado, and is under the management of Charles F. Holly of Silverton.

As soon as the Portland area at Cripple Creek, Colorado, is drained the Golden Cycle Corporation will start sinking the 350 feet necessary in the Ajax shaft to connect it with the newly completed Carlton tunnel. Charles H. Carlton of Cripple Creek is mine superintendent of the Ajax which is being operated by lessees, chief of whom is the W. D. Wade and Company. A. H. Bebee of Independence is general superintendent of the Golden Cycle concern.

A 1,200-foot crosscut is planned by the San Juan Gold King Mines, Inc., Earl F.



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## Technical Sessions at the Convention

OF THE 12 sessions held during the convention, four were devoted primarily to technical problems and developments. At the first of these, on the subject of placer mining, gold recovery by hydraulic methods and by dragline and bucket-line dredges was discussed in detail with F. L. Morris, San Francisco consulting engineer, presiding as chairman.

An early resumption of extensive, large-scale hydraulic mining in California "is extremely unlikely," John Power Hutchins, consulting engineer of San Francisco, declared at that meeting. "Hydraulicking is now almost dead," he said, "and an expansion, expected from the higher price of gold, has not materialized."

While hydraulicking eventually may be stimulated by a "higher—perhaps much higher—price for gold," he said, present day problems are "great and intricate." He emphasized the "Battle of the Tailings" as the big problem and mentioned the need for storing debris, the cost of which must be offset by shaving operating expenses.

Hutchins told of the plan for debris storage developed by the California Debris Commission which he said "has not been brilliantly promising." Tailings storage reservoirs costing an aggregate of about \$5,000,000 are not being used generally and "the real reasons have not been comprehensively and accurately learned by competent investigation."

Possible reasons given by the speaker were that potential hydraulickers may be deterred by the fear of being enjoined by those who allege that water passing over the tailings dams is too turbid for water users below the dams and that the gravels so far attacked may not be rich enough to yield a profit after paying a considerable sum per cubic yard for tailing storage. Another important question raised was water supply which will be needed in great volume for large-scale production.

"As most of the hydraulicking waters and their ditches have been diverted to other uses," he said, "it may be indispensable to construct new reservoirs and conduits on a large scale." He said that at its zenith hydraulicking used 60,000 acre feet of water yearly and asserted that "no comprehensive investigation and study has been made to ascertain if such volume, or, indeed, any other considerable lesser volume can be accumulated in new reservoirs at all or bought from present owners of water rights once owned by hydraulickers."

One of the few hopes for expansion held out by the speaker is to take advantage of the "striking development in machines" that has taken place in recent years, par-

\*Director, Arizona Department of Mineral Resources, Phoenix.

Of special interest to the technical men attending the San Francisco convention of the American Mining Congress were those sessions devoted exclusively to problems of operation. This year two specialized fields were covered—methods of gold mining and underground conveying and loading—in addition to reports of progress in mining and milling procedures.

ticularly the excavators and earth-moving devices which might be used to supplement the straight hydraulic process. He said that "serious consideration is being devoted to the possibilities of dry stripping . . . . gravels of low tenor, the deeper and richer gravels to be worked by the hydraulic process."

The number one problem insofar as the dragline gold dredge industry is concerned at the present time "is to obtain sufficient placer ground to keep the present equipment busy," according to Harry S. Lord of Lord and Bishop, Sacramento, California. "Production of gold from dragline dredges has increased from \$1,924 in 1933 to \$6,038,165 in 1939," he reported, and estimated that California draglines now are handling about 300,000 cubic yards a day, with a daily payroll of over \$6,000.

The California dragline dredge industry began in Oroville about nine years ago when the late Horace Onyett constructed a homemade boat, with a capacity of about 200 yards a day, which he nicknamed a "doodlebug," Lord reported. "While this equipment was replete with mechanical defects basically it followed the principles used today, even in the Dayton dredge which uses a 12-cubic yard dragline, and the washing plant has a capacity of 12,000 cubic yards per day."

The reasons for the steady growth in the production of gold by "doodlebugs" were listed by the speaker as low original cost compared to other methods of gold recovery, low maintenance and operating cost because of simplicity and almost automatic operation, the facility with which the equipment can be transported, and the efficient manner in which it will clean up ordinary bedrock. Disadvantages are that the dragline will not dig in hard and compact or cemented gravel as well as a bucket ladder dredge and the depth to which draglines will operate is restricted, although new equipment is capable of digging to 75 feet.

"We believe this type of equipment has served a very real and worthy purpose," Lord stated. "We are proud to have been able to add \$25,000,000 to the wealth of our country."

THE most significant development in recent California dredge practice is the increasing use of supplemental excavating equipment to aid and simplify dredging problems, Norman Cleaveland, general manager of the Roaring River Gold Dredging Company, declared in describing developments in California bucket-line dredge methods.

Cleaveland pointed out that the gross value of gold produced by all the bucket-line dredges in California from 1898 up to and including 1940 is \$279,699,074, but went on to state that "California dredging fields are far from depleted."

"In fact, bucket-line dredges produced 414,966 fine ounces of gold in 1940, the highest dredging production in the state's history. However, it is only natural that after 43 years and 2,170,000,000 yards of dredging, the cream of the dredging deposits is gone, and the 45 dredges now working in California will be faced with increasing complications to maintain their present output."

"During the past decade, the track-laying tractor, equipped with a bulldozer, has become almost an essential adjunct to dredging equipment. The development of earth-moving equipment centering largely around the tractor has been tremendous in the past few years, and we now are learning that the carry-all, the scarifier and the dragline are increasing the scope of future possibilities of dredging and are being included as essential adjuncts to dredge operations."

"There is still plenty of gold 'in them thar hills', and while bucket-line dredges in the past have not ventured out of the lowlands, the future may see them going from precipice to precipice, with the able assistance of other forms of dirt-moving equipment. Potentially, there is from two to three times as much ground in view as has been worked during the past 43 years, and there should be ample incentive for manufacturers and operators alike to redouble their efforts toward developing the perfect dredge."

The importance of stripping in dredging operations was emphasized by Col. W. H. Lanagan, general manager of the Manhattan Gold Dredging Company, in the discussion that followed. He presented details of costs and operation in showing the application of stripping to remove the overburden before starting production with a dredge.

THE Tuesday afternoon session on conveying and loading was presided over by J. B. Haffner, general manager of the Bunker Hill and Sullivan Mining and Concentrating Company. The latest developments in these fields were illustrated by a motion picture and sketches as well as described by specialists.

E. R. Borchardt, research engineer for the Anaconda Copper Mining Company, presented a paper on underground mechanical loading prepared by Joseph A. Wilcox, superintendent of Shattuck Denn Mining Corporation, who was unable to attend the meeting.

In his paper, Wilcox reported that all large producers use some form of mechanical rock handling and that many smaller operators are entering this phase of production. However, he cautioned small operators against installing such equipment before making a complete study of the conditions to be encountered.

Among the pitfalls mentioned were the installation of a machine without a sufficient tonnage available to be moved, the overtaxing of other operations by stepping up one phase of the production cycle, difficulties involved in sorting, time lost if loaders must be dismantled and moved to other locations, and the fact that employees, after using a loader for some time, "become allergic to a shovel."

He said that the trend toward mechanical loaders is attractive because of a reduction in labor, less effort for the workmen, and an actual lowering in costs of loading. "Of the three general types of underground loaders, namely: conveyor system, slusher scraper, and mobile lift loaders, the latter two are most generally used."

He pointed out that the conveyor is the cheapest to operate and most expensive to install, and that it is only applicable where large tonnages are to be moved between two specific points; the slusher scraper is used almost exclusively in stopes, and with a wide and varied application; and that underground loading machines of the shovel-lift type have become standard equipment in many mines.

After presenting Wilcox' paper, Borchardt told of the economies that had resulted in the Butte mines by using mechanical loaders, reporting an indicated saving of about 2 cents a cubic foot over hand mucking. He said that with shorter working hours "the loader has become a prime necessity in certain operations" and that by working out given areas in a shorter time costs of keeping stopes open have been decreased.

The use of shuttle cars in coal mines has reached such a high stage of development in reducing haulage costs that metal mine operators can well afford to give serious consideration to their use, L. E. Young, consulting engineer of Pittsburgh, Pennsylvania, asserted in a lecture on the subject which he illustrated with a motion picture.

Young described the shuttle car as a "four-wheeled unit, self-propelled and equipped with a bottom conveyor so that the rear of the car can always be spotted or kept under the boom of the loading machine." The conveyor in the bottom is operated to carry the load forward and permit complete loading of the car and to unload it by discharging the material onto a belt conveyor or a transfer elevator that fills mine cars.

While he said that the metal mine operator probably will find many applica-



The use of supplemental earth-moving equipment has become an essential feature of many dredging projects. The development of this type of equipment has greatly enlarged the future possibilities of the dredging industry.

tions for a "rubber-tired, self-propelled, self-unloading unit of the type which has been used so successfully in coal mines," he mentioned a number of factors to be considered in planning shuttle-car installation. These include power, clearance, capacity and dimensions, tires and wheels, brakes, the safety of the operator, and the economies to be derived.

Discussion of the use of mechanical loaders and shuttle cars for speeding up production was supplemented by an address on block caving with slusher hoists and scrapers at Consolidated Coppermines Corporation's Emma Nevada mine, delivered by Paul J. Sirkegian, general superintendent of the company. He reported that a hoe-type scraper, designed and fabricated in the corporation's shops, has been found to be "the cheapest and best for the ores of this mine," which break down finely, even during the first handling at the mining horizon, because of their shattered nature.

Savings in preparatory development expenditures were named by Sirkegian as the chief advantages of the slusher and sub-slusher methods of mining as compared to conventional block caving methods. "The easier access to the actual mining horizon that is gained where the slusher method of mining is adaptable is an important advantage because of better supervision, better ventilation, and safety."

WHILE there has been a general improvement in mining practice and unit production, radical changes in methods of mining during the past few years have been few, delegates were told at the Wednesday morning technical session on mining practice at which Harlan A. Walker, assistant general manager of the Homestake Mining Company, presided as chairman. This observation was made by Lucien Eaton, consulting engineer of Milton, Massachusetts, whose paper was read by George Young of San Francisco.

Eaton pointed out that the trend in underground mining has followed the ap-

plication of mechanical loading of ore since the loaders work most effectively when plentifully supplied with broken ore. He said that larger blasts are the rule, both in mines where the ore is loaded in the stopes and in systems of open stoping where the ore falls into chutes.

No great changes in present methods of stoping will become general in the near future, Eaton predicted, because "we cannot expect full advantage to be taken of new equipment and new ideas of operation except in new properties—and new mines are hard to find." At the same time, he stated that the large mines with plenty of capital will use new methods on new levels if their present layout will permit.

One line of progress that he expects will be followed "pretty generally" is an increase in production per working place.

"Our faster drilling and loading machinery," he stated, "have shortened the time necessary for stope preparation, and secondary mechanical transport has reduced the amount of development needed in this preparation, and production in the stope will be stepped up to keep pace . . . . At small mines, many of the changes in practice that have been successful at large mines are not applicable, partly because of physical conditions underground and partly because the necessary capital either is not available or is not warranted by the amount of ore in sight."

At the same time he pointed out that a group of small mines, which individually cannot afford the necessary capital expenditures for economy, often can do very well when combined under one ownership or when one central treatment plan is used.

"The crudity and inefficiency of many of our early mining operations were due as much to a lack of capital as to a lack of knowledge. The capital expenditure per man in a well-equipped mine is at present

(Continued on page 43)

ing a further reduction in operating costs. The two-compartment shaft is down below the tenth level where a station has been cut and sinking is continuing to the 11th level, which will be reached during October. The company took over the old Hillside mines, located 34 miles from Hillside, in the early part of 1940. During the five years of operation under the management of Hillside Mines, Inc., the property produced over 220,000 tons of ore, and during the last year while worked by the Boulder Mining Company has produced over 33,000 tons of ore. Major values are in gold and silver, but the zinc production is particularly important, since this is a strategic and priority metal. Officials of the company include James W. England, Jr., of Philadelphia, as president, and Colonel Percy E. Barbour of New York City as consulting engineer. Pitt W. Hyde is general manager; R. L. Davies is mill superintendent; and Henry L. Williams, Jr., is mine superintendent; all of Hillside.



**Central Eureka Mining Company, C. C.** Prior, president, 111 Sutter Street, San Francisco, California, has declared the regular bimonthly dividend of 8 cents a share on its capital stock payable October 15, 1941, to stock of record September 30. Mining properties are at Sutter Creek, California, and operations are conducted under the direction of James Spiers, superintendent.

The **Ellis Engineering Company** of San Francisco, California, has taken over the McCormack chrome property eight miles from Jamestown, California, and it is planned to start shipments immediately. The 185-foot shaft has been reopened and unwatered, and a body of chrome ore seven to 10 feet in width is reported to have been exposed. A. W. Ellis, Palos Verdes, California, is one of the principals of the company, which also is operating the Comet and Gospel gold properties in Calaveras County.

Testing is under way on ore from the six tungsten claims operated by the **Garnet Hill Syndicate** in the Garnet Mountain area of Calaveras County, 20 miles east of Westpoint. If results of the test and development work come up to expectations, it is planned to erect a reduction plant this year to handle the ore. The syndicate was organized by R. A. Sterzik, mining engineer, and associates. L. A. Smith, Palo Alto, is in charge of development.

An intensive development program is planned for a high quality asbestos deposit near Altaville, California. The claims have been located by Charles Gillis and J. W. Bandhauer of Angels Camp. Gillis also operates chrome mines in Calaveras County.

**Idaho Maryland Mines Corporation**, Albert Crase, general manager, Grass Valley, California, has declared the regular monthly dividend of 5 cents a share on the capital stock payable October 21, 1941, to stock of record October 10.

**Western Manganese Company, J. W.** Patterson, consulting engineer, Box 662, Patterson, California, is negotiating with the Stanislaus County Board of Supervisors for 35 to 40 acres of land to be used as a new mill site. The area under consideration is on the north bank of Del Puerto Creek about 18 miles from Patterson. According to Patterson, the initial investment in machinery would involve an expenditure of approximately \$50,000, and the mill would have a capacity of 60 tons a day. The company now operates a 20-ton plant, but the tailings at this location pollute Del Puerto Creek. Western Manganese has under lease around 7,000 acres in Ingram Canyon, 1,800 acres in Del Puerto Canyon, and deposits in Santa Clara County.

Erection of a new hoist and surface buildings is planned at the property of **Original Sixteen-to-One Mine, Inc.**, Alleghany, California. Development work is being continued and drifting is under way on the 600, 1,000, 1,100, and 1,500 levels. A crew of 90 men is employed. The mill is treating 125 tons of ore a day, a production rate maintained during the past several years. C. A. Bennett is general superintendent; Willard Van Doren is mine superintendent; and John Hunley is mill superintendent; all of Alleghany.

The old **Pioneer** hydraulic mine in the Grass Flat district near La Porte, Plumas County, California, is being prepared for operation during the 1942 hydraulic season. Seven miles of ditches are being put into good condition, and monitors are being installed.

The **Blue Bell** claims in northern California are being developed by C. L. Musgrove, Susanville, and veins containing commercial gold and silver are reported

to have been encountered. Musgrove has been an operator in the Diamond Mountain district for over 30 years.

A two-mile tramway, formerly used by Empire Star Mines Company, Ltd., Grass Valley, California, between the North Star and Empire mines, is being dismantled and shipped to the **Rustless Mining Corporation** to be used at its Grey Eagle property in Glenn County. Rustless plans construction of a 200-ton mill at this property. C. E. Osborn, Star Route, Orland, California, is superintendent at the Grey Eagle mine and C. M. Marquardt is assistant superintendent. Approximately 100 men are employed. The company maintains offices at 504 Farmers and Mechanics Building, Sacramento, and at Grants Pass, Oregon. Robert H. Sayre, vice-president, is in charge of the former, and H. F. Byram, vice-president, makes headquarters at Grants Pass. Rustless Mining Corporation is a subsidiary of The Rustless Iron and Steel Corporation of Baltimore, Maryland.

A 10-year lease has been taken on the **Culbertson** gravel mine by E. R. Gaston-guay of Newcastle, California, who will start operations, employing 21 men on three daily shifts. An electric shovel will be used in excavation until a 40-foot face has been obtained, after which the gravel will be mined by the drift method. It is estimated that 7½ tons of concentrates will be recovered daily when operations are under way. The ground comprises 180 acres northeast of Newcastle. James D. Culbertson of Santa Paula, California, is owner.

After driving a crosscut from the 125-foot level for a distance of about 20 feet at the **Comet** gold mine, Ray Hageman, Box 104, San Andreas, California, picked up the vein, from which he has milled 26 tons of ore. According to Hageman, the vein is 12 feet wide and recovery on the test milling was \$13 a ton. At the present time he is getting out about 100 tons for another milling. The property adjoins the **Dal A Ray** mine, owned by D. C. Smith of Meridian, California; Hageman; and Harry Hill of Stockton. The Comet is owned by Mrs. Frances B. Reed of San Andreas.

R. J. Hinks, Oroville, California, and associates are leasing the **Two Orphans** mine, five miles from Auburn, from the Locatelli Estate of Colfax. Drifting is in progress on the 70-foot level, and the 135-foot shaft is being extended. Milling equipment includes a 30-ton ball mill, jig, mixing tank, flotation unit, and table. Until ore is available from development, the plant will handle custom ore, and at the present time approximately 100 tons from the Mary Len mine near Penryn are being treated every two weeks. Six men are employed in the mine and mill, working on one shift. It is planned to conduct operations on a three-shift basis when work is fully under way. The Two Orphans is an old producer, dating back to 1865 when several thousand dollars were taken out. Around six years ago it was worked by Herbert Hoover and associates under the direction of Thomas Campbell, former Arizona governor.

**AVERAGE PRICES OF METALS**  
(Figures by American Metal Market)

	Copper Per Lb. Conn. Valley	Lead Per Lb. New York	Zinc Per Lb. St. Louis	Silver Per Oz. New York
1924	13.024	8.097	6.344	66.781
1925	14.042	9.020	7.622	69.065
1926	13.795	8.417	7.337	62.107
1927	12.920	6.755	6.242	56.370
1928	14.570	6.805	6.027	58.176
1929	18.107	6.833	6.512	52.993
1930	12.982	5.517	4.556	38.154
1931	8.369	4.244	3.638	28.701
1932	5.792	3.181	2.881	27.892
1933	7.276	3.870	4.031	34.728
1934	8.658	3.8595	4.162	47.973
1935	8.880	4.0648	4.331	64.273
1936	9.710	4.7091	4.903	45.088
1937	13.391	6.0085	6.517	44.805
1938	10.225	4.7388	4.613	43.222
1939	11.197	5.0531	5.117	39.082
1940	11.528	5.1788	6.339	34.773
1940				
Jan.	12.216	5.4712	5.644	34.75
Feb.	11.405	5.0761	5.543	34.75
Mar.	11.385	5.1923	5.75	34.75
Apr.	11.327	5.0712	5.75	34.75
May	11.324	5.0154	5.808	34.949
June	11.375	5.00	6.24	34.825
July	10.812	5.00	6.25	34.75
Aug.	10.954	4.8537	6.398	34.75
Sept.	11.536	4.9292	6.937	34.75
Oct.	12.00	5.3077	7.25	34.75
Nov.	12.00	5.7283	7.25	34.75
Dec.	12.00	5.50	7.25	34.75
Ave. 1940	11.528	5.1788	6.339	34.773
1941				
Jan.	12.00	5.50	7.25	34.75
Feb.	12.00	5.6023	7.25	34.75
Mar.	12.00	5.7654	7.25	34.75
Apr.	12.00	5.85	7.25	34.75
May	12.00	5.85	7.25	34.75
June	12.00	5.85	7.25	34.75
July	12.00	5.85	7.25	34.75
Aug.	12.00	5.85	7.25	34.75
Sept.	12.00	5.85	7.25	34.75

Plans are to sink the 150-foot shaft at the **Albert Keena** property to greater depth. Drifts have been run on the 50 and 100-foot levels, but no stoping has been done as yet. A 4½-foot ledge of commercial ore is stated to be on the property. Equipment includes a hoist, 10-stamp mill, concentrating table, crusher, etc. A new roller-type mill has been ordered to replace the stamp mill, since the ore has proved too soft to be handled with the stamps. The deposit is kaolinite, said to carry 39 per cent non-commercial aluminum and gold. The mine, which is four miles northeast of Auburn, is operated under lease by Walter F. Jurgenson and Les Williamson.

New equipment, including a gas hoist, 160-foot Ingersoll-Rand compressor, ore cars, and a skip, has been purchased for the **Blue Lead** gravel mine near Dobbins, California. Six hundred and fifty feet of tunnel have been driven by the present operators, and a 90-foot raise is being run to serve as a shaft. D. Cirincione and associate are operating the mine.

Reconditioning of the 500-foot shaft preparatory to active operation is in progress at the **Paramount** mine one mile west of Auburn, California, under the direction of L. W. Smith, Box 861, Auburn. New additions, including jigs and another concentrating table, are being made to the 50-ton mill. Four men are employed. The mine comprises the Centennial and Conrad properties.

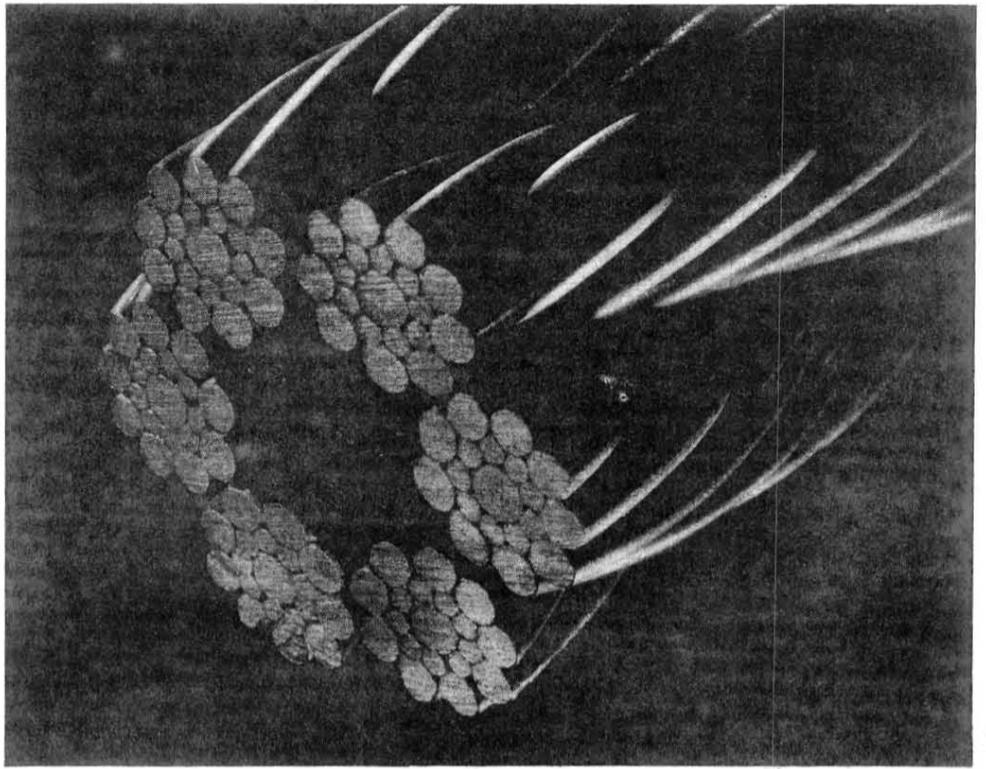
E. V. Gray is carrying on development work at his mine near Garden Valley, California. A new headframe and compressor have been installed; the shaft has been sunk to a depth of 100 feet; and cross-cutting has been started. Three men are employed.

A new 50-ton mill is scheduled for operation in the near future at the **Gagner** mine near Tuttle town, California. Work will be on a 24-hour basis, employing 30 men under the direction of Robert Long, superintendent.

The surface plant at the Big Canyon mine of **Mountain Copper Company, Ltd.**, four miles south of Shingle Springs, California, will be sold. The equipment includes a 300-ton milling plant with preliminary crushers, ball mills, and flotation machines; and headframe, compressors, etc. J. M. Basham, superintendent, Shingle, is in charge. William F. Kett, 351 California Street, San Francisco, is president of Mountain Copper Company.

The **Saline Valley Mining Company** has been awarded clear title to the Big Silver mine located near Darwin, California. The decision, which was handed down by the California Appellate Court, concludes several years of litigation. Development work is to be resumed at the property, which has been shut down since the latter part of 1938. Paul Bolton, 203½ South Park View Avenue, Los Angeles, is president of the Saline Valley Mining Company.

P. S. Runnels of Santa Maria, California, and associates are opening a silver claim in the Greenhorn Mountains around 60 miles east of Bakersfield, California. A



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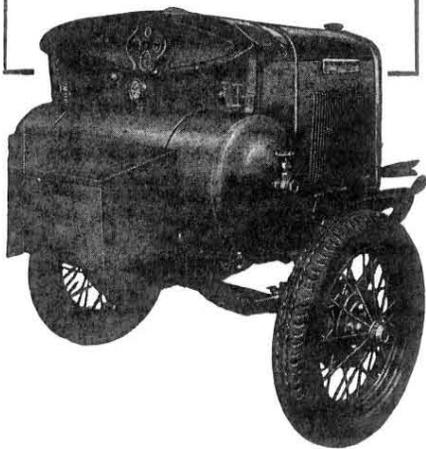
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new road is being built to the property and it is proposed to erect a small mill.

According to Max Hess, mill operator at the King Solomon mine one mile east of Randsburg, California, shipments amounting to over \$4,000 were made from the property during the month of September. This production came from the Blind vein, which has been worked since last January but has not been explored to a great extent. The King Solomon mine has been operated the last four years by the **King Solomon Mines Lease**, comprised of James Nossler, James Christensen, Emil Schultz, and Max Hess.

E. B. Atkinson, Red Mountain, California, and Ira G. Gates have taken a lease on the **Sunshine** mine near Randsburg, California. During the past two months, the partners have shipped 43 tons of ore. The first shipment was made to the Kelly mill in the district and the last of 20 tons was treated in the Operator mill, which has been rented by Atkinson and Gates.

The **Ashdown Leasing Company**, newly formed of Lake County, Oregon, and Modoc County, California, interests, will start operations at the Trinity gold claims in the High Grade mining district of Modoc County. Shaft sinking is in progress, and six cyanide tanks and a crusher are to be installed. George D. Mathewson, Fort Bidwell, California, is manager for the company.

The **Gold Hill Dredging Company** is installing a new ball mill to handle sand tailings on the Kister dredge, which is operating about seven miles south of Oroville, Butte County, California, on the Feather River. Dredging is said to have reached an area in which the gravel is "rusty" and requires scouring. The Kister dredge has 73 buckets and handles 10,000 yards every 24 hours, working at a 50-foot depth. It has been operating at the present location for nearly 3½ years. Jigs are used in recovery of fine gold. Other operations are conducted by the company in San Joaquin County. Abe Shaw, Oroville, is dredgemaster. Mark Summers of Sacramento is general superintendent and E. B. DeGolia, 904 Robert Dollar Building, San Francisco, is president of Gold Hill Dredging Company.

**Darwin Consolidated Tungsten, Inc.**, has taken over under bond and lease the Lone Deer group of five tungsten claims located about one mile from Convict Lake near Darwin, California, and prospecting and development work are in progress. The property is reported to show extensive surface ore bodies, and it is thought that the glory hole, open pit, or caving systems of mining will be used. Water and power lines are available. The company is comprised of C. W. Fletcher, Box 325, Bishop, California; Joseph P. Wrenn, Equitable Building, Hollywood; and associates. Tex Ritter, film actor, is interested in the company.

Because of a shortage of supplies, the property of **Log Cabin Mines Company** near Leevining, Mono County, California, has been shut down. More than 50 employees are affected by the action. There is difficulty in keeping roads open to the

mine during the winter months due to its elevation of about 10,000 feet. Frank A. Garbutt, 411 West Seventh Street, Los Angeles, California, is general manager of Log Cabin Mines Company.

**Paragon Mines, Inc.**, William E. Wilson, president and manager, Foresthill, California, is producing gold at the Paragon hydraulic mine two miles east of Foresthill. A crew of 10 men is employed. G. L. Stark, 138 West Fifth Street, Watsonville, California, is vice-president and D. O. Osborne of Foresthill, secretary-treasurer, of the newly incorporated company. Capitalization is listed at 1,000,000 shares of 20 cents par value.

The **Twin Peaks Mining Company**, 1500 Central Tower Building, San Francisco, California, recently incorporated as a close corporation, is operating in the Oak Hill district of Napa County near Middletown, California. The mine, a quicksilver property, is completely equipped.

Operations are expected to get under way next March at the old Poets Property mine five miles west of Carrville, Trinity County, California. Equipment is already on the ground, and the **Coffee Fork Mining Company**, V. L. Duhem, representative, 6127 Harwood, Oakland, California, plans diamond drilling to explore the underground workings. The old mine is said to have yielded much high-grade ore around 1900 and some commercial ore was taken out last year. Old workings comprise around 200 feet of drift and a 165-foot one-compartment shaft. J. H. von Hieber, Carrville, is superintendent, and Duhem is one of the owners. The Coffee Fork Mining Company recently was incorporated with a capitalization of 35,000 shares of \$1 par value.

The **Sunshine Dredging Company** has contracted with Artie Griffith of Weaver-ville, California, for 1,200 acres of land along six miles of the Trinity River. It is estimated that there are around 3,500,000 cubic yards of gravel available which will furnish work for six years. Other ground in the district is expected to be included in later negotiations. The mining firm, the principals of which are of Seattle and Tacoma, Washington, at present is operating on the Trinity River below Douglas City, California.

After a shutdown of several years, operations have been resumed at the Fazzi mine about a mile from the edge of Angels Camp in Calaveras County, California. Diamond drilling was started by William Hutcheson, Box 686, Angels Camp, following dewatering of the 300-foot shaft. Ore is reported to have been struck after 100 feet of drilling on the 300-foot level. The mine is equipped with headframe, hoist, compressor, mill, change room, blacksmith shop, ore cars and tracks. Machinery is electrically operated. Development work is scheduled to follow completion of the drilling. J. A. Fazzi, Box 12, Altaville, California, is owner of the property, which is comprised of two claims of 20 acres each.

The **Gorilla** gold mine of five claims in the vicinity of Bridgeport, Mono County, California, has been leased and optioned by

Lloyd B. Bedell and associates from L. R. Parker. During the last four years Parker has been developing new sections of the ground, and a considerable amount of commercial ore is stated to be blocked out.

The **Stockton Hill Corporation**, Walter R. Woock, president and general manager, Box 449, Auburn, California, will mill 40,000 tons of custom ore from the **Pine Grove** mine southwest of Grass Valley. The old dumps at the Pine Grove are thought to contain a considerable quantity of commercial quartz. Development work also is in progress at the property with satisfactory results reported. The Stockton Hill plant has a capacity of 150 tons of ore a day, and is handling over 100 tons from the Stockton Hill mine located about nine miles south of Grass Valley. An extensive development program is progressing also at this property.

Tests are under way at the **Big Gold** mine near Randsburg, California, to determine the commercial value of its scheelite ore. The property has been worked previously for its gold, but development work has exposed a ledge of scheelite 110 feet long and five feet wide believed to contain commercial material. Gold production from the mine for the last year is said to have amounted to approximately \$30,000. Jack M. Kreta, Randsburg, is owner and operator of the Big Gold.

Production is scheduled for the near future at the property of **Tungsten United Corporation**, Mojave, California. The milling plant has a capacity of approximately 110 tons and will handle the scheelite ore from the company's Shadow Mountain property. The process includes coarse grinding, four stages of classification, and regrinding. Kenneth Dunham, Mojave, is superintendent.

Three Caterpillar Diesel tractors with two Le Tourneau scrapers move an average of 253 yards of gravel an hour at the gold dredging operation of **Placer Properties, Inc.**, near Oakdale, California. This is accomplished on a 3,000-foot, round trip haul, stripping from five to 14 feet deep. Work is on a basis of three shifts a day, seven days a week. Harry Seward, Oakdale, is superintendent, and H. G. Kumle, Box 532, Oakdale, is president of the company.

Operations have started at the **Wonder** group of eight claims near Allegheny, California, and recently acquired by G. E. Duke, Box 111, El Cerrito, California. The property, which parallels the Sixteen-to-One mine, has been developed by a series of drifts and a 500-foot shaft. Veins are said to be from two to seven feet in width, running \$15 to \$20 a ton in gold.

The **Lancha Plana Gold Dredging Company**, C. G. Patmon, president and general manager, Lockeford, California, is moving its 4½-cubic foot bucketline dredge which will be operated on a five-mile strip of land on Butte Creek six miles southeast of Chico. Dredging will be started around November 1. It is estimated that approximately 5,000,000 yards of ground will be worked before completion of operations. E. P. Thomas, Route 2, Box 93-T, Chico, California, is dredgemaster for the company.

COLORADO

A regular 2-cent quarterly dividend has been declared by the **Cresson Consolidated Gold Mining and Milling Company**, payable November 15 to stock of record October 31, 1941. The amount will total \$24,400. M. E. Shoup, Box 86, Colorado Springs, Colorado, is president of the company which operates at Cripple Creek.

The **Donora Mining Company, Inc.**, has resumed operations following a short shut-

down while additional milling equipment was being installed. The company, Robert Donner, 5 Stewart Building, Colorado Springs, Colorado, president, operates the Boulder County mine near Nederland, where Peter Carlson is superintendent.

The 50-ton flotation mill at the **Pride of the West, Inc.**, at Silverton, Colorado, recently completed its first full year. Shipped in the form of lead and zinc concentrates, 3,000,000 pounds of metal were produced. Of this 2,682,500 pounds were lead; 337,620 pounds zinc; and 123,070 pounds copper in addition to some gold and silver. T. B. Stearns, 1716 California Street, Denver, is president, and Glen Farnhan, Howardsville, is mill superintendent.

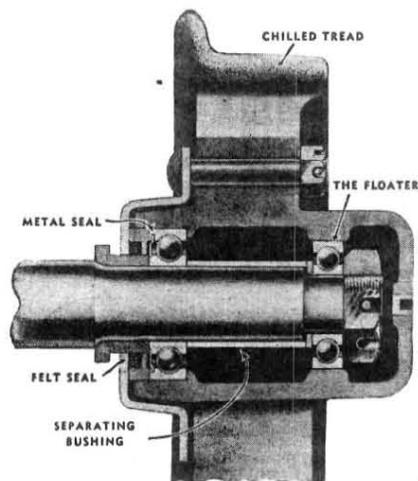
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## HIGHLIGHTS FROM THE MINING CONVENTION

(Continued from Page 11)

the American Mining Congress and the next speaker, declared. He appealed to mining men to get in this "scrap that is going on throughout the entire United States. If you get into this fight I can give you no assurance of success, but if we must go down, let's go down fighting."

The tax proposal of Secretary of the Treasury Morgenthau which would limit returns of corporations to 6 per cent on their invested capital was described by Alvord as a right to the jaw. "Gentlemen," he said, "you can take that 6 per cent seriously. It has been approved by the President."

Another administration tax proposal referred to by Alvord is a levy on primary business profits which would be determined by taking gross receipts, subtracting the cost of goods sold, and allowing nothing for interest, depletion, and depreciation. Simplicity is given as the reason for enacting this tax, he said, but "simplicity will not be its only objective."

Alvord said that every person in the treasury department associated with the formulation of taxes "knows as well as you and I what the results will be and those are the results they want to bring about."

The cost of the national defense program to date is \$74,000,000,000, Alvord said. Spending for national defense and ordinary functions of the government is \$22,000,000,000, this year, and next year we will spend \$32,000,000,000. This money should be raised in such a manner that it will tie in with other objectives such as checking inflation and cushioning the terrific post-war deflation.

"We should have a tax system," he declared, "that is consistent with dictatorship during the war period but which will permit a return from dictatorship after the war." He went on to assert that the treasury department's policy is to make the excess profits tax "a basic part of the revenue system because in the minds of a group in Washington this is the only way that it is possible for that group to determine how much you should pay."

"We feel that the excess profits tax is justified for the duration of the emergency, but it should not be a revenue measure. It should be designed solely for the purpose of taxing excess profits." Alvord asserted that a true excess profits tax would produce little revenue, but that the treasury will get revenue by subjecting a substantial portion of normal profits to the excess profits levy.

The new act will produce revenues of \$3,500,000,000 with \$1,000,000,000 coming from increased excise taxes on a selected group of commodities, \$1,500,000,000 from corporations with most of that raised by the excess profits tax, and \$1,000,000,000 from individuals of which all but \$40,000,000 will be paid by existing taxpayers, he said.

Although heavy taxation should act as a check on inflation and was given as one of the reasons for the bill, Alvord asserted that "there is nothing in the present revenue law that will act to the slightest as a brake on inflation. It will have precisely the opposite effect."

Alvord recommended that the necessary revenues be raised by "taxing everybody to the utmost, consistent with the amount of money that must be obtained, and borrowing the rest," but in doing that a strong group would be reached, and it would be necessary to "adjourn politics." The device Alvord proposed is a "withholding tax" based on all forms of compensation, dividends, and interest. "This," he said, "would make practically everyone concerned with the way his money is spent."

FERNALD, in opening the discussion following Alvord's talk, stated that one of the main problems in bringing about economy in government is that each congressman gets about 100 requests for appropriations for every kick about taxes. He called first on Donald A. Callahan, president of the Lexington Mining Company, who appealed to mining men to send representatives from their states to Washington to present their views.

"It is up to you men who are engaged in mining to get alert and organize yourselves and send representatives to Washington who can go before your congressional delegates as your representatives and explain your problems. They can do much more for you than you can accomplish with telegrams and letters."

Callahan stated that one of the biggest problems in presenting arguments on the revenue bill is that during the hearings before the ways and means committee the bill was not available and there was nothing to talk about. Furthermore, he declared, "it is impossible for a man to sit down and protest against an unintelligible bill."

A. G. Mackenzie, secretary of the Utah chapter of the American Mining Congress, also emphasized the complexities of the bill and he, too, requested others to send representatives to Washington to lend a hand in the fight that is going on.

Herbert C. Jackson of Pickands Mather and Company, Cleveland, discussed the effect of heavy federal levies on mine valuations and state taxation. He stated that heavy federal taxes operate to decrease the value of practically all capital assets, but that state assessing authorities "in valuing mines for real estate tax purposes do not generally recognize the federal tax cost to the extent necessary to produce true values." He asserted that the inclusion of federal taxes at the present rates would decrease mine values from 15 to 25 per cent under those computed without reference to federal taxes.

James A. Runser of McLaren, Goode and Company discussed problems of depletion and depreciation, while John A. Burgess of the Carson Hill Gold Mining Company stated that capital is viewed by many as something a few rich people have while it should be considered as "a tool used for

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**TECHNICAL SESSIONS  
AT THE CONVENTION**

*(Continued from Page 13)*

somewhere between \$5,000 and \$10,000 and averages probably about \$7,000. We cannot expect modern results without such an expenditure, and few small mines can afford to spend so much money."

C. W. Plumb, general manager of the Middle Fork Gold Mining Company's Sliger mine, declared in an address on the filling of mine stopes with mill tailings that "a great advance toward the elimination of pollution of streams has been made. This does not cure entirely the tailings dam problem," he said, "but it at least reduces the size of a pond. One's thought is that slimes overflowing from the storage tank and going to a tailings pond are almost impossible to hold. Experience shows, however, that by careful work a very excellent pond can be made from the slimes themselves."

Other advantages of "sand filling" mentioned by Plumb are lower cost, formation of a tight seal against the hanging wall so that it does not give, elimination of any short circuiting of air as is the case with a broken-rock fill, and ability to stope up under a level and take out "100 per cent of the ore in the sills and pillars without the least additional pressure or fall of rock from the hanging wall."

**BY SWITCHING** over to detachable bits at the Golden Queen mine, the problems of transportation and distribution of mine steel were almost entirely eliminated, Charles A. Kumke, superintendent stated in discussing the use and treatment of detachable bits and drill rods. E. R. Borchardt, research engineer for Anaconda Copper Mining Company, and M. G. Heitzman, manager of operations at the Silver King Coalition Mines Company, added to the session by citing practices and uses at other properties.

Important factors listed by Kumke in the use and treatment of detachable bits are: bits must not be used after the gauge is worn off, they must be screwed onto the drill rod firmly, they must be checked out to each miner at the beginning of the shift and checked in at the end, a number of made-up drill rods must be kept at convenient places in the mine, a slightly smoky flame should be used to prevent scaling when heating bits for hot milling as well as for tempering, and bits should be quenched with boiling water when tempering. In hot milling of bits at the Golden Queen, current practice is not to preserve the original thread, but rather to reform it by heating the entire bit and keeping the skirt during the upsetting in firm fitting dies, 3/1000 of an inch smaller than the diameter of the skirt.

In the discussion of the subject, it was revealed that the tendency in the use of detachable bits has been to decrease the gauge change from 1/8 to 1/16 inch in which case air pressure of up to 130 pounds is of advantage. This permits a reduction in the size of the starter, increased drilling

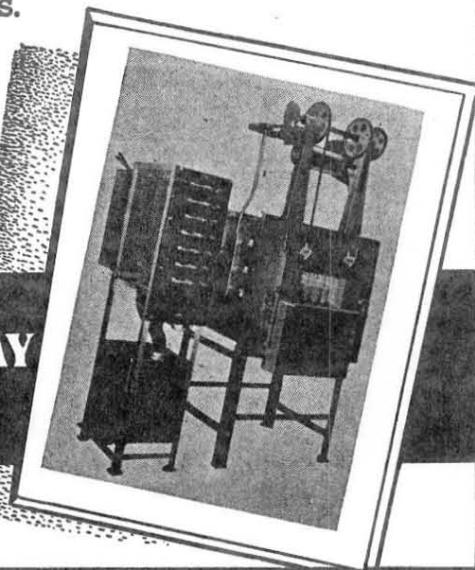
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speed, fewer changes in a given depth of hole, and better all around efficiency. It was also brought out that a study of costs on the number of feet of hole drilled shows that in some cases cold grinding is preferable to the hot milling practice at the Golden Queen.

**ELMER ISERN**, chief metallurgist and general mill superintendent for Eagle Picher Mining and Smelting Company, presided as chairman at the Wednesday afternoon session on milling progress. In opening the meeting he stated that whereas the sink and float method of milling has been the most outstanding recent advance, each and every one of the various departments of milling have been the subject of study and improvement in the past few years.

The subject of new developments and equipment in reduction crushing was presented by Merrill E. Shoup, president of the Golden Cycle Corporation, who read the paper prepared by Max W. Bowen, Golden Cycle mill superintendent. Bowen's paper pointed out that two factors normally take up the major portion of the cost in fine crushing—charges for steel and power consumption.

Excessive steel and power costs result from poor feed distribution, choking or packing crusher cavity, overcrushing of already crushed fines, improper distribution of crushing action, excessive ratio of reduction, and too wide an angle of nip. An example in savings obtained in the consumption of liners in a short-head cone crusher, by a redesign of the liners so as to place a short liner in the zone of maximum wear, was mentioned and it was stated that this not only reduced the scrap loss but increased crushing capacity by maintaining the proper distribution of the crushing action throughout the length of the crusher cavity. This and other improvements by manufacturers are cutting down the weight and loss in liners and lowering power consumption.

Metal production has been stepped up to meet the greatly increased demand in recent years by operating existing plant facilities in such a manner as to treat abnormally high tonnages, Roy Hatch, superintendent of the Utah Copper Company, the next speaker, reported. Until some radical change is made in the mechanisms for fine grinding over the standard ball mill practice, improvements will be confined to refinements in the factors which influence capacity and product.

Hatch pointed out that ball mills today are basically much the same as they were when originally built, but that "changes in the last 20 years in the types of linings, balls, feeding, and discharging mechanisms,

dimensional and speed features have all contributed to the lowering of grinding costs." Increased efficiency in the operation of ball mill grinding units has been obtained through equipping secondary classifier units with variable speed motors, by investigation of the addition of graduated ball loads, by use of forged alloy steel balls and alloy heat-treated steel liners, and by the installation of high starting (torque) synchronous motors for driving the ball mills.

**A** NEW method of coarse concentration that has come into use during the past four or five years—the sink and float or differential density process—was described in a paper prepared by W. L. Ziegler, mill superintendent of the Hecla Mining Company. Ziegler reported that a distinct advantage of the sink-float process over other methods of coarse concentration is the low cost per ton daily capacity and the small amount of space required for the plant.

"The operating costs are comparable to other types of coarse concentration," he said, but he pointed out that while in some cases finished products can be produced, in others the products from the sink-float process must be treated by additional methods for further separation of the minerals.

"There is a distinct field for the further use of the sink-float process in ore dressing and the adoption of it will play an important part in metallurgy. This process probably will never cover the general use that has been achieved by froth flotation, but undoubtedly will be the greatest advance in metallurgy since the adoption of flotation."

Following the presentation of the sink and float process, the discussion immediately turned to flotation, a subject which was presented by A. W. Fahrenwald, dean of the University of Idaho School of Mines. "There is hardly any mineral that cannot be floated or depressed by the skilled flotation technician," he declared. "In practice, as many as four mineral products are being made from a single pulp feed by successive flotation treatments."

One of the harder problems confronting the flotation metallurgist today is the dressing of sulphide-scheelite ores, he reported. The factor that made the "flotation recovery of scheelite particularly difficult," he commented, "is the ease with which the mineral reduces to slime." He predicted that this problem will "be licked" in the future.

The problem of effective treatment of the sulphide ores of the Getchell mine in Nevada was discussed by Fred Wise, mine

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superintendent, who stated that the bulk of the gold is covered with a film of insoluble iron compounds making amalgamation difficult. Furthermore, the presence of arsenic made a roast in rotary kilns necessary before good recovery could be attained.

The final paper, on tungsten milling at Pine Creek, 21 miles northwest of Bishop, California, was presented by Blair Burwell, general superintendent of U. S. Vanadium Corporation. Burwell reported that a new concentrating plant there will start operating this month with an initial capacity of 1,300 tons of tungsten-molybdenum ore per day. It will replace the present 450-ton plant operating at the portal and is located two miles distant and 3,000 feet lower than the present mill.

"The process developed to treat the complex Pine Creek ores is the result of four years of research and development work," Burwell stated. "The metallurgy of the Pine Creek plant is the result of the need to produce a satisfactory product, suitable for the production of ferro-tungsten with an accompanying high recovery of the tungsten in the ore. It combines flotation concentration of scheelite with a following chemical treatment step which eliminates impurities and produces a high-grade synthetic scheelite product."

It is the necessity of producing a high-grade finished product, low in impurities, directly from low-grade ores that has handicapped domestic mines and mills, the speaker declared. "Foreign ores obtained from China or other countries using cheap labor and laborious hand methods have set the standard specifications of the market."

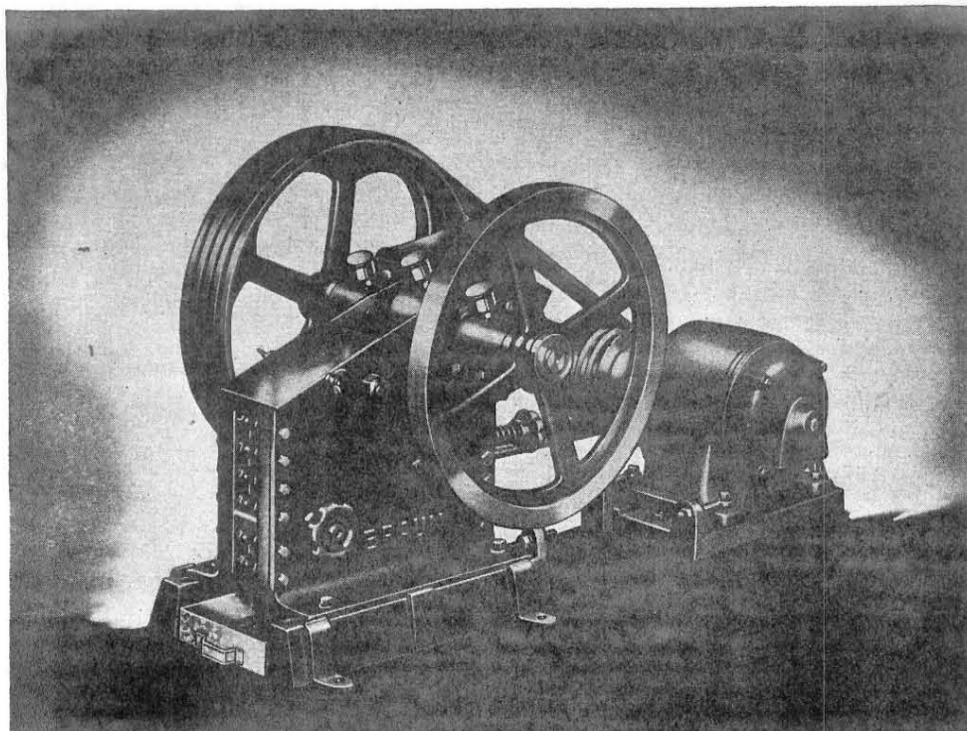
However, he stated that the "full utilization of our domestic tungsten deposits can probably make us independent of foreign sources of supply in times of need, provided we have continued protection of tariffs to shelter this growing and essential natural resource industry. While there is yet much to be done to complete this work, we feel that the plant at Pine Creek, as well as the metallurgical developments conducted by other progressive tungsten producers, has gone far in the direction of supplying this need."

#### IDAHO MARYLAND BUILDS MEDICAL CENTER AT MINE

IDAHO MARYLAND MINES CORPORATION of Grass Valley, California, is constructing a small medical center, consisting of consultation room, rest room, and a small laboratory, near the employment office. Of frame construction, the new building will serve for examinations of new employes, treatment of minor injuries, and consultation on non-industrial diseases. The rest room will be equipped with cots where the men can receive care and rest for temporary illnesses.

Work is being carried on under the direction of Dr. Carl P. Jones, local physician and surgeon.

Group insurance, both for ordinary life and accident and for health, is said to be owned by every employe of the company.



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## AERIAL MAPPING BY FOREST SERVICE AIDS MINE ENGINEERS

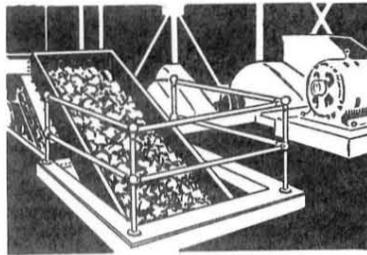
WESTERN mining engineers and geologists report that the U. S. Forest Service is producing maps that are both dependable and full of vital information, and which may be tied in with U. S. Geological Survey topographical quad-sheets and, where available, geological atlas folios. It also is said that the forest service is working toward production of photogrammetric-process contour maps of the national forest areas.

Being camera-flown this year are California's Plumas and Lassen national forests, and all of the Mendocino forest not previously flown for mapping. (Part of Mendocino County was aerial mapped in 1936, along with Sonoma, Del Norte, and Humboldt counties—the earliest photogrammetric-mapping aerial surveying done by the forest service). In 1939 all of the Tahoe National Forest was flown; and in 1940 Eldorado, Mono, Sequoia, and the south one-third of Sierra forest. Triangulation controls have been established, by extending U. S. G. S. and U. S. C. & G. S. controls, which permit the forest service to map the areas flown by the photogrammetric method.

One of the most striking extant examples of the efficiency and dependability of topographic maps produced by that method is said to be the U.S.G.S. Zion Park sheet in southwestern Utah. The ruggedness and perpendicularity of so much of that area are such that to produce contour maps of it by the old survey methods was considered an impossibility. Even a casual study of the Zion map discloses the value of such topographic cartography to the engineer or geologist making a detailed study of an area thus mapped.

According to mining engineers, one of the best signs of the times, in connection with this flying of key areas by the forest service, is the fact that inter-bureau competition and rivalry appear to be giving way to collaboration and joint use of cartographical data. It is understood that the U. S. Geological Survey plans production of topographical maps based upon the forest service's photo-flying data.

Since the forest service is part of the Department of Agriculture and the geological survey is part of the Department of the In-



terior, the inter-bureau swapping is more interesting. The Mendocino forest work was a 50-50 cooperative job—thus helping both departments—while the mining industry and others, to whom accurate topographic maps are essential, were the gainers from such cooperation.

Pacific Coast headquarters of the United States Forest Service are located in the Phelan Building, San Francisco, with Chief Draughtsman H. A. (Seedy) Sedelmeyer in charge. Sedelmeyer will be remembered for his relief map displayed at the Golden Gate Exposition. His chief assistant in the work is C. D. (Don) Jackson.

## FOUR PHILIPPINE MINES FORCED TO SUSPEND OPERATIONS

CLOSING down of operations of several mines in the Philippine Islands has been noted in recent months.

Nielson and Company, Inc., L. R. Nielson, president, Box 717, Manila, has announced suspension of operations at the property of Hixbar Gold Mining Company, which is under its management, and of its Panan copper property in Zambales. The Hixbar shutdown was effective August 1 as a result of the company's being unable to obtain permits for the export of copper ore since the passage of the export licensing law by the United States Congress in May. Approximately 600 laborers in the Albay district are directly affected by the closing. The Hixbar mine at Rapu Rapu, Albay, mined 1,489 tons of ore during July with a contained value of ₱60,006. Production for the current year to August amounted to ₱865,464, comparing with ₱397,990 produced in the same period last year. Development at the Panan property has progressed to a point where erection of a concentration plant would have placed it on the producers' list. The shutdown affected 100 workers.

Nielson and Company has pointed out that under normal conditions a profit could be realized on shipment of copper ore from these mines to the United States smelters. However, the high freight rates prevailing and the current shortage of shipping space would prohibit any possibility at present of marketing copper ore to the States.

Ipo Gold Mining Company, operating at Ipo, Bulacan, suspended mining operations on June 30, 1941, due to lack of a commercial grade of ore. However, the mill treated 780 tons of ore during July for a gold production of ₱22,798, averaging a recovery of ₱29.22 a ton. At a special stockholders' meeting on August 8, dissolution of the company was approved, along with a plan to sell for ₱250,000 all the assets of the company, with the exception of the mining claims, to Benguet Consolidated Mining Company, former operator of the property. The board was authorized to dispose of the mining claims.

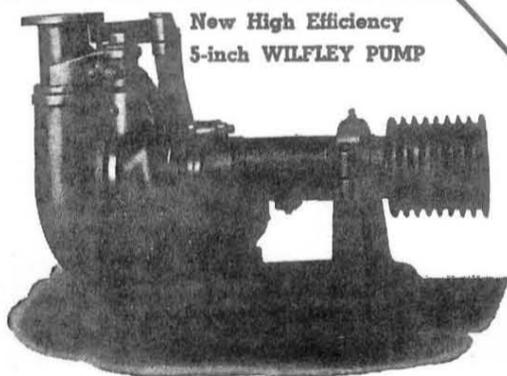
Dissolution also was authorized for Angelo Mining Company, Inc., by stockholders at the July annual meeting. This company formerly operated at Infanta, Tayabas.

## CORONA MINING COMPANY WILL OPERATE QUICKSILVER MINE

THE Corona Mining Company, 16 California Street, San Francisco, California, has been incorporated in California to operate the old, well-known Corona quicksilver mine located in Lake County, 11 miles east of Middletown.

Present work is carried on by tunneling on a 30-foot vein of cinnabar some 1,500-foot long. The ore is being taken from a 250-foot tunnel. In addition there are three tunnels, one of 250 feet, one of 800 feet, and one 1,300 feet long not being worked at present.

The ore is treated in two unique furnaces, said to be of a type different from others in the state. The furnaces are revolving retorts, incorporating a particular feature by which the ore is sealed inside the tube, the heat being applied to the outside of the tube while it revolves. The gases are drawn off by a pipe at the end. Due to the constant movement of the ore in the tube, it becomes heated more quickly and recovery is completed in two to three



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ours. This time compares with from six to eight hours burning in the more conventional type of furnace. Percentage of recovery is said to be equal to that obtained by other types.

One furnace consists of six tubes, 22 inches in diameter and eight feet long; the other has four tubes, 22 inches in diameter and six feet long. This equipment at present is handling 25 tons of ore a day, and the capacity can be stepped up. E. R. Rodgers is superintendent in charge at the mine.

The Corona property was worked as early as 1890, and is in the heart of the country's principal quicksilver producing district.

#### FRIANT AND SHASTA DAMS ARE NEARING COMPLETION

CONSTRUCTION work on Friant and Shasta dams is progressing at a rapid rate, according to the Bureau of Reclamation which is in charge of both projects. In August, a new California record for one month's concrete work was set when 228,769 yards of concrete were poured on Friant Dam, averaging 7,300 yards a day. Shasta Dam's monthly peak so far has been 212,991 yards in July 1941. Grand Coulee set the world mark of 536,264 yards in October 1939, and at Boulder Dam the highest month's work totaled 261,874 yards in March 1934.

Friant Dam, which is being built to control the San Joaquin River flow in the south central part of Central Valley, California, is reported to be 84 per cent completed. All blasting and excavation have been finished except for final rock clean-up high on the Madero County abutment, and pouring of concrete has passed 1,650,000 cubic yards. When completed at 2,200,000 yards, Friant will be the fourth largest concrete dam in the world.

Shasta Dam is being constructed in the Sacramento and San Joaquin valleys, and the reservoir formed will back up the water of the Sacramento, Pit, and McCloud rivers for a distance of over 35 miles. What is claimed to be the world's longest belt conveyor system, 9.6 miles long, travels at a rate of 550 feet per minute between the dam site and the gravel plant at Redding, California. It has a capacity of approximately 1,100 tons of sand and gravel per hour, or 26,400 tons per 24-hour day.

In a recent report by the bureau, it was shown that of the materials being used at Friant Dam 30 per cent came from 27 states and the District of Columbia, and of the Shasta Dam materials 42 per cent were derived from 35 states and the District of Columbia.

At Friant Dam a gold recovery project is being conducted. The gold is extracted from the sand, gravel, and rock excavated about two miles downstream from the dam for mixture with cement to produce concrete. An agreement between the contractors and the Central Valley Bureau of Reclamation stipulates that half the net proceeds be turned over to the government. It is stated that since August 1940 through August 1941 about \$95,000 in gold was recovered.

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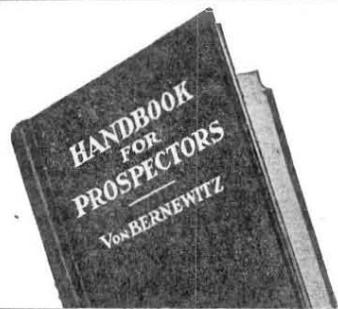
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JOHN F. DULING\* discusses

# Geology of the Cat Camp Placer District

ON A LOW mesa, in Calaveras County, California, about 350 feet above sea level and lying between Camanche Creek on the north and the Valley Springs Branch of the Southern Pacific Railway on the south, there occurs a widespread area of gold bearing gravels, the origin of which is obscured by more recent topographic changes.

The total area has a width of some 2 miles and a length of perhaps 5 miles. Its western boundary is indicated by an irregular line of low bluffs paralleling and marking the eastern edge of San Joaquin Valley. To the east these gravels disappear under table-topped hills having a height of some 600 or 700 feet above sea level. While these gravel beds, on examination, are found to be distinctly stream gravels, on first sight of the topography one is puzzled as to how this could be. A width of 2 miles is more than the width of any known stream bed along the Sierras and no rims or valley limits are visible. What, then, is the origin and reason for the widespread area covered by these gravels?

In order to understand the geology of the Cat Camp district it is necessary to study briefly the geological history of the Tertiary Age river system of California to which these auriferous gravel beds are related.

About the beginning of the Mesozoic era some 200 million years ago the present site of the Sierra Nevada mountains lay beneath the ancient seas. At the beginning of the Cretaceous period, some 120 million years ago (from geological time scale), there came a time of mountain building, and the broad backs of the Sierra Nevada mountains rose up above the sea. This activity was accompanied by the formation of rich gold-bearing veins on the slopes of the range. Then followed the formation of what is now known as the Ancient Tertiary river system. After this a long period of erosion in the early Cretaceous period planed down the newborn mountains. The concentration of placer gold began in countless streams and continued throughout Cretaceous and Tertiary times.

No coast range had yet appeared and the shore line of the ancient sea was located along the foothills of the Sierras. One of the rivers in this ancient drainage system was the Tertiary Calaveras River lying between and draining the areas now drained by both the Mokelumne and Calaveras rivers. This ancient river bed had a large stream channel measuring some 2,500 feet between rims.

Through long erosion the mountains gradually were reduced to gentler slopes and the canyons widened into valleys with low lying foothills reaching to the shores

\*Engineer of Mines, Los Angeles, California.

The Cat Camp gold placer mining district has been the scene of several mining operations, but the geology of the district has been little understood. In the light of recent sampling and prospecting in the area it seems probable that several million cubic yards of gravel, suitable for dragline dredge operations, may be available.

of the sea. The climate was damp and semi-tropical, producing a dense vegetation.

NEXT came the Miocene time, some 15 million years ago, known as the period of the world's second "Great Summer." Long quiescent volcanic forces again asserted themselves and mountain building was renewed with the result that the low-lying range was elevated to its present mighty heights. Eruptions of andesitic and rhyolitic tuffs began in enormous volume and effectually buried a large number of the streams, filling their valleys to the rims. At the close of the Tertiary period a steaming desolate expanse of volcanic mud covered almost the whole of the western slope of the northern Sierras, in startling contrast to the calm verdure-clad hills of the Cretaceous, 15 million years earlier.

Then followed the Ice age, covering the high tops of the Sierras with glacier ice, stripping and eroding them bare of soil. Mountain tops were rounded off, cutting and exposing bare rock. Lower down U-shaped valleys were cut by the mighty ice streams. Torrential rains accompanied this period and a new drainage

system was carved out in sharp V-shaped canyons of a new age.

The Tertiary drainage system can still be traced, usually following the volcanic capped ridges along the western slope of the range.

The ancient Calaveras River originally emptied into the sea near Valley Springs and the shore line would approximate the present 500-foot contour above sea level. However, this channel became clogged with the first volcanic mud flows, the shore line retreated, and at a later period the river emptied into the Ancient Ionian sea near Wallace. This period in its geological history is illustrated on an accompanying sketch map which shows the position of the river with its varied deltas spreading over the Cat Camp district.

Two separate volcanic mud flows underlie the channel at this point with a combined thickness estimated at more than 150 feet. There appears to be very little gravel between them, so it is evident that the flows were not far apart in geologic time.

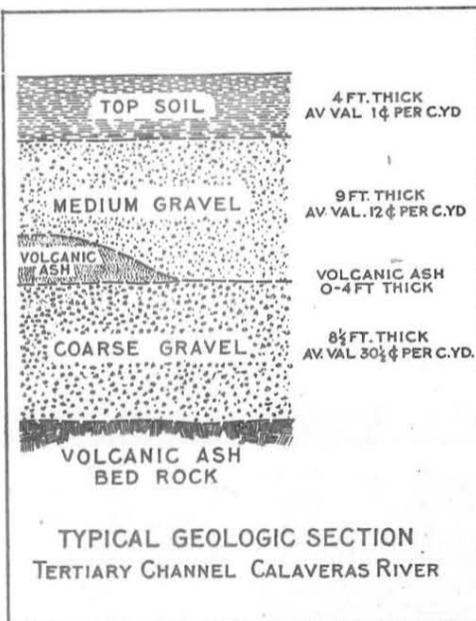
IN THE examination and sampling of a portion of Sections 11, 12, 13, and 14, Township 4 North, Range 9 East, M.D.M., both rims of what appears to be the deepest or last location of this channel before final interruption of the stream occurred were located. A fragment of a higher bench or older delta was located on the southern part of Section 14. Unquestionably, further exploration would locate other delta channels of this stream near where it emptied into the Ancient Ionian sea.

These channels are not to be confused with the original Tertiary river channels dating back into the Cretaceous period, perhaps 90 million years ago and continuing down until they were interrupted by the volcanic mud flows some 15 million years ago.

Our present stream system dates back into the late Pliocene and is probably not more than 1 to 3 millions of years in age. Hence there was an estimated period of transition of some 10 or 12 million years from the ancient to the present drainage system on the western slope of the Sierras. The above mentioned placers were formed during this period of transition from the ancient river system to the present time drainage channels.

LONG ages of erosion have since taken place and the old channels have been cut up by modern canyons and in many places entirely eroded away. In the investigation of this channel it was possible to locate the rims of the last position of the channel with considerable accuracy across Sections 12, 13, and 14.

The channel at this point has a fall of approximately 16 feet to the mile. It has



a width of approximately 2,500 feet between rims and a rather flat bottom width of some 1,800 feet.

In the channel are two flows of gravel as illustrated in the accompanying sketch of typical geologic section.

The first run of gravel on bed rock averaged 8½ feet thick, but in places reached a thickness of 12 feet or more. Then there occurred a stream interruption by volcanic activity in which a layer of volcanic ash some 4 feet in thickness was washed in. In most places this ash was removed by later stream erosion, but in others it has been hardened to a false bed rock.

This lower gravel stratum, designated as "coarse gravel," contains many boulders larger than a man's head, but no extremely large boulders, as apparently the grade and velocity of stream at this point did not permit their transportation. The gold in this gravel is fine, the largest single piece weighed in sampling being worth 7 cents, and is exceptionally evenly distributed throughout the channel. The computed average value of this stratum of gravel sampled ran 30½ cents per cubic yard.

Above this there was a second flow of gravel averaging 9 feet in thickness, herein designated as "medium gravel," having chunks as large as a man's two fists, but none as large as a man's head. The gold distribution in this stratum of gravel was less uniform, giving a computed general average of 12 cents per cubic yard, but in places running as high as the deeper gravels.

Above the second flow there has accumulated in the course of time a layer of top soil reaching a maximum thickness of 18 feet, but in large areas there was little or no top soil. The computed average ran approximately 4 feet in depth. Numerous samples taken of this top soil indicated a gold content of approximately 1 cent per cubic yard.

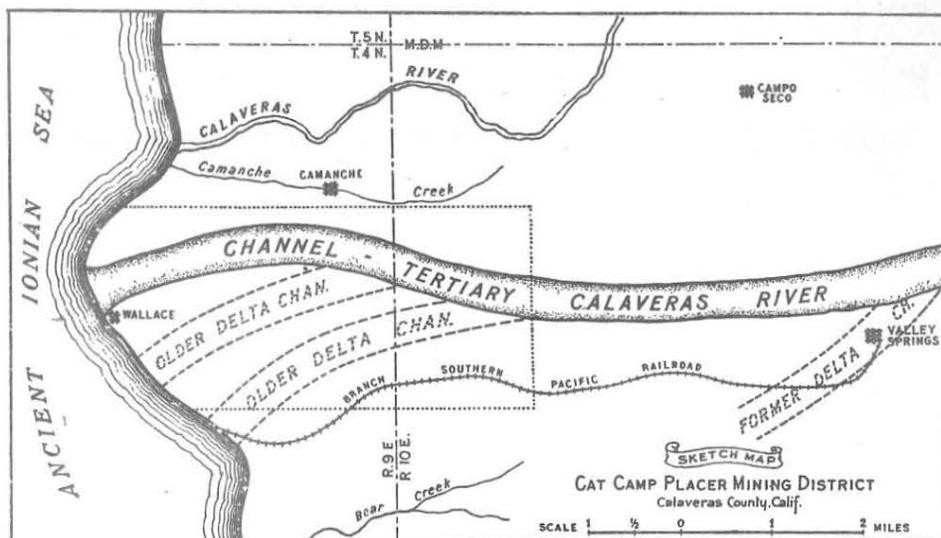
During the period of examination two deep runs in bedrock were found, one along the north rim of the main channel and one more nearly in the center of the channel. The concentration of gold is greater in these deeper runs as indicated by a sample of 2 feet on bedrock in one shaft that gave a return of \$1.40 per cubic yard; and similarly, 2 feet of gravel on bedrock in a second shaft gave a return of 90 cents per cubic yard.

The gold is of high grade, that recovered by dredging being reported to have run 900 to 925 fine.

The presence of some gold coated with quicksilver was noted. The quicksilver apparently is from natural sources associated with the volcanic activity so much in prominence at the time of the formation of these placers. The genesis of the quicksilver ores of California is associated with the volcanic activity of the Tertiary times.

**W**ATER was brought into the Cat Camp district from the Mokelumne River through some 20 miles of ditch some time during the fifties and much ground sluice mining took place.

On the southwest corner of Section 12, Township 4 North, Range 9 East, M.D.M. a long drift tunnel was run in bed rock



with an upraise under the channel gravel. Sluice boxes were installed in the tunnel. A pit some 5 acres in extent and 20 feet deep was ground sluiced down through the upraise and cut through the tunnel. This work covered an operation of several years length. No record of production is available.

Remains of the old ditches are still in existence and shallow workings are in evidence on many portions of this property.

An old ladder dredge, said to have been in poor condition, was moved onto the property in the early twenties and worked a small pit adjoining the old workings. This seems to have been a shoestring outfit and there is no record of its recoveries. It is to be noted that this operation was under the old price of gold.

The Atlas Gold Dredging Corporation leased property in the district in 1935, prospected it, installed a dragline dredge, and operated through 1936, working a narrow strip of shallow ground in Section 14. The U. S. Mint returns for this operation show a recovery of \$70,000. The following quotation referring to the Atlas operation is taken from the report of California State Division of Mines, Vol. 32, p. 326, California Mining Journal, July, 1936:-

"Sampling of the property commenced in October, 1935, and construction of the dragline dredge began in December 1935. Four million cubic yards of Ione shoreline gravels, from 12 to 25 feet thick, are estimated to be available. The gravel is tight, but not cemented. No large boulders occur. It has a volcanic ash

bedrock. The gold is fine, and will probably average 25 cents per cubic yard."

The Atlas company gave up its lease and moved the dredge onto a property in the Grass Valley district.

E. L. Lilly conducted a successful "doodle-bug" dredging operation in the district. His operations are the continuation of the Atlas corporation's dredge pits. At the present time the only operation in the district is being conducted by Ralph M. Watson on Sections 14 and 23, Township 4 North, Range 9 East. This operation comprises a stationary gold-recovery plant to which the gravel is conveyed by bulldozer.

The systematic sampling and prospecting of 150 acres in this district blocked out a gravel reserve of 1,430,000 cubic yards of commercial gravel suitable for dragline dredge operation. It seems probable that a complete prospecting of the district might bring the total gravel reserves up to several million cubic yards of commercial gravel.

#### COPPER PRODUCTS PLANT UNDER CONSTRUCTION AT LOS ANGELES

**P**HELPS DODGE COPPER PRODUCTS CORPORATION, 40 Wall Street, New York City, has started work on its plant to be used in the manufacture of copper products at Los Angeles, California. The plant is being erected in accordance with an agreement with Defense Plant Corporation, subsidiary of the RFC, at an estimated cost of approximately \$3,000,000. The factory site comprises 41 acres of land located on the east side of Garfield Avenue north of and adjoining the Pacific Electric Whittier line.

Phelps Dodge Copper Products Corporation is an important factor in the manufacture of wire and cable, seamless brass and copper tubes, copper strip and rods. Production capacity has been estimated at around 400,000,000 pounds annually, but this amount is believed to have been increased since the enlargement and modernization program of the past several years. The firm is a wholly owned subsidiary of Phelps Dodge Corporation.



## SOUTH DAKOTA MANGANESE TREATED IN FEDERAL PLANT

**P**RODUCTION at the United States Bureau of Mines experimental manganese plant, west of Oacoma, South Dakota, started September 4. F. D. DeVaney, metallurgist in charge, estimated an average of 500 tons of crude ore will be processed daily until freezing weather late this fall. Manganese will not be refined at the plant as the process used only separates the high-grade ore nodules from the waste. The ore will be shipped to government plants, probably at Boulder, Nevada, and Provo, Utah.

Granting that the South Dakota ore is probably too low-grade for use during normal times, DeVaney said the government expects to be able to develop an important emergency source of manganese in South Dakota. The South Dakota field is one of the largest in the country. A report of the South Dakota geological survey, issued this year, estimated the South Dakota deposits at 10,000,000,000 tons of low-grade ore, enough to supply the present steel industry in the United States for 1,800 years.

Engineers in charge of the plant are not optimistic on the prospects of a large-scale production in the field, but point out that even the 500 tons of ore now being processed daily, when refined, would produce enough manganese for the manufacture of 800 tons of steel. Eight hundred tons of steel is equivalent to the amount used in building 640 automobiles. A 30-day run at the experimental plant would produce enough manganese to manufacture the steel used in a 35,000-ton battleship of the South Dakota class.

"The best thing about the ore in South Dakota is the quantity not the quality," J. H. Hedges, strategic minerals investigator with the federal bureau of mines said, in describing the field. If production costs, including the refining, are compared with present costs of importing ore from Cuba and South America, the imported ore is still far cheaper than the South Dakota ores.

"This field is classed as an emergency source of supply and in normal times the cost of refining domestic ore would probably be prohibitive," DeVaney said.

Ore from the plant now operating is taken from the open pits by a power shovel and trucked to the ore dump. From there it is conveyed by a belt to a crusher which breaks the larger pieces of ore to the size of less than six inches. An endless conveyor belt elevates the material to a stockpile above the pit, then another belt conveys the material to the drying kiln. Here the ore passes through a large rotating steel oven heated by a gas furnace. This process dries the ore, removing 12 per cent of the moisture.

After being dried in the kiln, the ore is elevated to the top of a 50-foot structure where the shale and clay are screened and washed from the high-grade nodules. A small percentage of the ore is found in small particles, but the majority of the manganese is in nodules over 1/16 of an inch in size. As the material passes over

vibrating screens the waste falls through and the high-grade ore is passed to the loading bins. Smaller nodules are separated from the waste in washing tanks below the screens. In the slakers or wet washers endless chains agitate the water to speed its action on the ore.

Construction of a second experimental plant, designed to handle 250 tons a day, has been started near the present plant. The second plant will operate on the principle of an explosive shattering plant similar to that used in manufacturing or processing puffed grain cereals. Ore will be placed in a steam cylinder, under high pressure. As the pressure is released suddenly the ore nodules will be separated from the shale and clay.

F. D. DeVaney of the bureau's experimental station at Rolla, Missouri, is in local charge of the plant, receiving mail at Box 399, Chamberlain, South Dakota. Actual construction was done by the Permanent Construction Company of Milwaukee, Wisconsin.

## COMBINED METALS CONTRACT RESTS ON SNYDER'S MANAGEMENT

**T**HE vice-president and general manager of Combined Metals Reduction Company, E. H. Snyder, has been elected president of Combined Metals, Inc., holding company for the Combined Metals Reduction Company which operates around Stockton, Utah, and Pioche, Nevada. J. C. Jensen and George W. Snyder were named vice-presidents and Guy Snyder, secretary.

An agreement has been reached with the National Lead Company, which controls the Combined Metals Reduction concern, adjusting the indebtedness to National Lead created by the advance of money for the acquisition of property and its development and equipment. The contract is stated to depend upon the continuance of E. H. Snyder as general manager of Combined Metals Reduction.

The agreement provides for the transference of 3,000 shares of capital stock in Combined Metals Reduction from Combined Metals, Inc., to the National Lead Company. This deal decreases the holding company's interest in Combined Metals Reduction to 10 per cent and increases to 90 per cent that held by National Lead. Combined Metals Reduction will pay National Lead 20 per cent of its net operating income annually, to be applied to accrued interest amounting to \$3,290,789 owed National Lead as of January 1, 1941, on \$5,064,610. Accrual of interest on the loan will be stopped as of January 1 of this year. National Lead will forego any claim for payments on the principal over 80 per cent of annual depletion and depreciation charges as computed by Combined Metals Reduction according to U. S. treasury standards. Both the holding company and National Lead agree to have Combined Metals Reduction transfer to surplus annually, exempt from distribution of dividends, annual dividend income of \$100,000. And finally, Combined Metals Reduction will distribute annually, at the request of either holding or controlling company, as dividends to stockholders any

balance of dividend income after payment of \$100,000 to surplus account. Dividend income is net income after deductions for federal and excess profits tax.

The Combined Metals Reduction Company reports an operating profit of \$545,010 before taxes, depreciation, and depletion for the first seven months of 1941. Depreciation and depletion amounted to \$146,155; state taxes to \$22,167; and federal income taxes were \$165,186; leaving a net income of \$211,501. Increased earnings are expected now that the new 500-ton flotation plant at Pioche has been started.

## FIRST UNIT AT PERMANENTE PLANT TESTS SATISFACTORILY

**A** 72-HOUR TEST has been completed at the Permanente magnesium plant constructed by the Todd-California shipbuilding interests near Los Altos, California. With the proving of the new process in use, plans are being made for an expansion of production facilities, the construction to be financed by the RFC.

The plant, which represents an investment of \$9,250,000, is expected to require about 110,000 kilowatts of power when it reaches capacity output, and to be able to produce around 4,000 tons annually of magnesium, upwards of 99 per cent pure, in addition to certain alloys. The furnace equipment is now equal to about one-third of the intended capacity, and it is expected that expansion of the plant will be completed by spring.

Present production is from magnesium oxide obtained from chemical companies, but the plant shortly will produce its own magnesium oxide from Nevada magnesite ore deposits. If results of tests now underway prove satisfactory, the corporation will obtain raw material from dolomite deposits in the Cienega district, southwestern San Benito County, California. A crew of five men is engaged in sinking test holes in search of the mineral, which has a high magnesium content. A giant bulldozer, air compressor, and two jackhammers are being used in the work. If sufficient deposits are uncovered, the dolomite will be processed in combination with sea water to produce magnesium oxide, which then will be manufactured into magnesium at the Permanente plant. Prospecting at the location is expected to continue for about a month.

The natural gas supply, available at Los Altos, after being used in the magnesium plant, can be passed to the adjoining cement plant of The Permanente Corporation for the firing of cement kilns, thus simplifying operations and reducing costs. The Hansgig electric furnace process of metal extraction is utilized in the Permanente plant. Henry J. Kaiser, Latham Square Building, Oakland, is head of The Permanente Corporation.

According to a statement by Jesse Jones, Federal Loan Administrator, the government's magnesium expansion program has cost \$177,000,000 for 310,000,000 pounds of new metal a year, bringing the projected annual capacity to 346,000,000 pounds.

## MINING WILL BE PERMITTED IN ORGAN PIPE CACTUS AREA

THE House of Representatives has passed legislation to permit mining in the Organ Pipe Cactus National Monument in Arizona. The section comprises a 425-square mile area bounded on the south by the Mexican border and on the east by the Papago Indian reservation.

The bill, which passed the Senate several months ago and has been awaiting consideration by the House, encountered considerable opposition from various groups and associations which sent protests to Arizona's senators and representative.

It is contended by those supporting the measure that a portion of the area is mineralized and that the amount of land set aside as a national monument is much more extensive than necessary. Congressman John R. Murdock of Arizona, who sponsored the bill, asked "that the general mining laws apply to this area, with the exception that no ownership of land or title to the surface shall pass to any individual or corporation."

## U. S. GEOLOGICAL SURVEY EXPLORES PAYMASTER DISTRICT

DEPOSITS of manganese ore in the Paymaster district, south of Palo Verde, Imperial County, California, have been examined by J. B. Hadley and John S. Livermore of the staff of the United States Geological Survey. The project was undertaken as a part of the inventory of domestic sources of strategic minerals being conducted by the survey.

These deposits were worked extensively in 1917-18 when more than 1,500 feet of underground workings were driven and between 3,000 and 4,000 tons of high-grade ore were shipped from the district. They lie within an area of about 150 acres, 42 miles by road south of Blythe, California, and 54 miles north of Yuma, Arizona. The nearest railroad shipping points are about 30 miles distant.

The manganese is found in steeply inclined veins a few inches to several feet wide, which follow faults in coarse conglomerate and volcanic rocks. The principal ore mineral is psilomelane, the hard black oxide of manganese; it is accompanied by other oxides of manganese, including manganite ( $Mn_2O_3 \cdot H_2O$ ) and pyrolusite ( $MnO_2$ ). A large number of faults and fissures are mineralized, but the mineralization along them is discontinuous, and most of the veins are less than six inches wide.

The best ore consists of bodies of psilomelane ranging from 1 inch to 18 inches in width and from 1 foot to more than 50 feet in length, some of which have been followed to a depth of 50 feet below the surface. This ore can be sorted by hand to shipping grade. Samples taken in 1941 from exposures in the workings yielded 35 to 45 per cent of manganese.

Other ore consists of manganese oxides in fault breccia and contains more or less rock. Most of it is estimated to contain less than 30 per cent manganese and would require beneficiation to bring it to shipping grade.

Reserves of high-grade ore in the district are confined largely to the vicinity of the old workings. Bodies now visible and assumed to extend to a maximum depth of 40 feet are estimated to contain two or three thousand tons of ore that would yield about 40 per cent of manganese. In addition, a few tens of thousands of tons of ore containing 10 to 30 per cent of manganese, in veins one to three feet wide, are believed to lie within 100 or 200 feet of the surface.

## ACOJE COMPANY SHOWS BIG INCREASE IN CHROME SHIPMENTS

SHIPMENTS of chrome ore from the Acoje Mining Company in the Philippine Islands reached a new high in August this year, totaling 15,339 tons valued at P383,475. This amount compares with 11,753 tons valued at P300,356 for the preceding month and with 21,583 tons valued at P374,197, the previous record set in February. Total shipments for the year so far have shown an increase of about 85 per cent over last year.

The company is the leading exporter of strategic metals in the Islands, the increasing shipments being accounted for by the mounting demand for strategic materials in the United States. Forty thousand tons of chromite sold to the Metals Reserve Corporation are being delivered, and an additional 50,000 tons will be purchased before the end of this year by the government, according to the resident commissioner of the Islands.

The Acoje property is located at Santa Cruz, Zambales, where 5,000 men are employed producing ore that is averaging 50 per cent chrome. With the exception of small shipments consigned to Japanese buyers before the enforcement of the export licensing system in the Islands, all the ore has come to the United States.

A. B. Latham, 315 Samanillo Building, Manila, is general manager of Acoje Mining Company. Ray Fernstrom is mine superintendent, and J. E. Kennedy, mill superintendent.

## ARIZONA SECTION A. I. M. E. TO MEET IN TUCSON NOVEMBER 10

THE ARIZONA section of the American Institute of Mining and Metallurgical Engineers will hold its meeting November 10, 1941, at Tucson. In addition to the Arizona group of 250 engineers, official invitations have been issued to the 17 members of the board of directors, an almost equal number of vice-presidents who live throughout the United States, and the 125 University of Arizona men who are members of the student chapter.

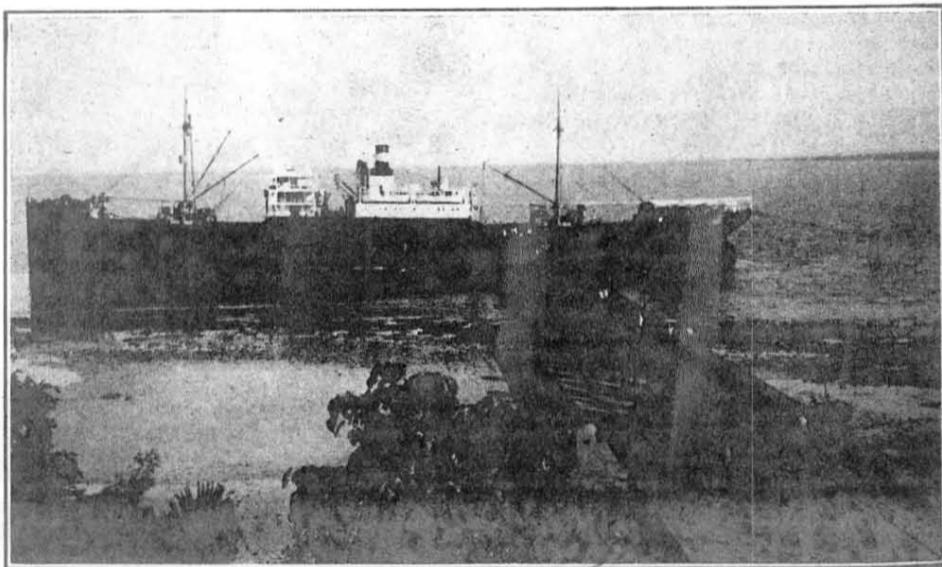
John R. Suman, president of the A. I. M. E., will be the honor guest, and will be accompanied by A. B. Parsons, national secretary. Suman is on an official tour of the nation for the organization, during which he will visit most of the section chapters. Special invitations also have been extended to Daniel C. Jackling, former national president, and to Louis S. Cates, president of Phelps Dodge Corporation.

## BAGDAD COPPER AWARDED RFC LOAN OF \$2,500,000

THE Reconstruction Finance Corporation has authorized a loan of \$2,500,000 to the Bagdad Copper Corporation at Hillside, Arizona, according to an announcement by Jesse Jones, federal loan administrator. Although full details have not yet been disclosed, it is understood that a concentrator capable of treating 2,500 tons of ore a day will be installed at the Bagdad mine.

Development work at the Bagdad mine indicates a total mineable ore body of 50,000,000 tons averaging 1 per cent copper. A little over 6,000,000 tons of Bagdad's reserves average 1.47 per cent copper, and it is expected that this material will be worked first.

Assuming a recovery of 85 per cent, the new plant should be able to turn out about 25 pounds of copper for each ton of ore treated or approximately 10,000 tons of copper a year. The placing of Bagdad on a large-scale production basis will mean another big operating mine for Arizona.



Pier of Acoje Mining Company in Zambales, Philippine Islands, with freighter loading chromite for the United States.

Arizona, under the direction of Ted Phillips. Equipment, including a Fairbanks-Morse double-drum hoist and an air compressor, is being installed, and preparations are being made to extend the depth of the Number 1 shaft.

The Davenport Mining and Reduction Company has reported an ore discovery at its mining property near Kingman, Arizona. The strike was made while driving a raise for ventilation purposes. The raise encountered the intersection of two veins, and it is stated that the ore is of commercial grade for a width of 12 feet. Assays indicate that it will average \$25 a ton in gold, silver, lead and zinc. The company's mill, which is being reconditioned and equipped to make a separate concentrate of the zinc, is expected to start operations within a few days on a basis of 125 tons daily. According to Ogden C. Chase, president, Boggs Building, Las Vegas, Nevada, there is sufficient ore in sight to keep the mill running at this rate for several months, and additional ore is being developed by exploration work. Also, arrangements are being made to receive custom ores from near-by producers. Cyrus F. Weeks, Kingman, is general superintendent and M. C. Richardson is mine superintendent.

Bids were received October 11 by the Window Rock Navajo Agency, Window Rock, Arizona, on a copper mine lease in the northwest section of the reservation about 23 miles from The Gap trading post. The ground will be offered for a cash

bonus, in addition to payment of stipulated royalties and annual rental. The minimum amount of the bonus must be equal to an appraisalment by the United States Geological Survey. The lessee also will be required to pay an advance annual rental of 25 cents an acre and a filing fee of \$5, and must deposit 20 per cent of the bonus bid. Another requirement will be the employment of Navajo labor in all positions not necessitating skill, including truck drivers.

A crew of six men is employed at the Hilltop mine, O. O. Mattox, owner, Hilltop, Cochise County, Arizona, and four or five tons of ore are produced daily. Values are in silver, lead, and zinc. Around 10 men were employed during the summer in developing some of the surface veins and shipping the higher grade silver-lead carbonate ores. There is sufficient water available for a mill, and a 50 or 100-ton plant will be constructed if sufficient capital can be acquired.

A group, comprised of Edward Smith, Box 1923, Phoenix, Arizona; Charles A. Diehl, owner of the Arizona Assay Office, Box 1148, Phoenix; and Otto Weustermann; has taken over the Big Four group of gold claims located in Rackensack Gulch 44 miles northeast of Phoenix. An intensive development program is planned under the direction of Smith, manager of Edward Smith Exploration. Herman E. and David Crisman, Cavecreek, Arizona, formerly owned the property.



A Los Angeles, California, group, headed by LeRoy Harrod, 1152 North Western Avenue, plans to erect a 50-ton mill at Danby in the Old Woman Mountain mining district of San Bernadino County. The new plant will include ball mill, plates, and concentration units. Lack of water heretofore has been a handicap to mining activities in the section, but an ample supply has now been developed. The syndicate holds several thousand acres of semi-developed mineralized land in this district.

The Lobicasa Company, Box 812, Sacramento, California, has leased the Jamison Creek property near Quincy, California, where it is estimated that 1,500,000 yards of gold-bearing gravel are available. The company operates two dragline dredges within the basin of the flood control dam of Stockton, California, two miles south of Valley Springs. The smaller of the boats is being dismantled and will be sent to Quincy; the larger boat will remain to work the gravel behind the Calaveras Dam until the high water comes during the winter.

Wright, Dolbear and Company, 206 Sansome Street, San Francisco, California, are working a chrome property in Elder Creek district 31 miles west of Red Bluff,

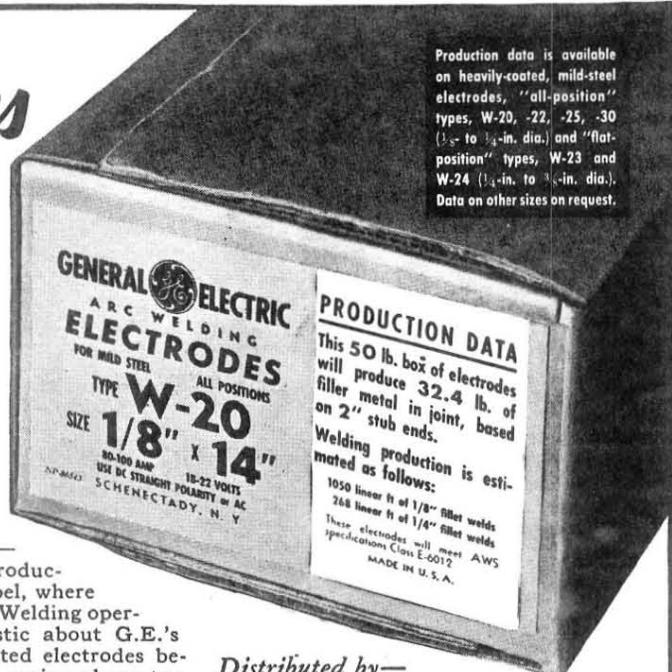
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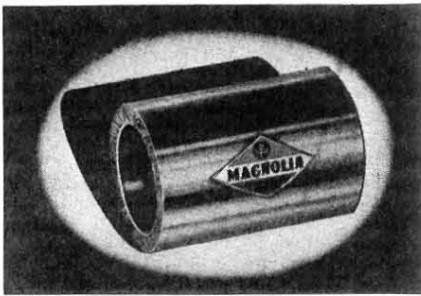
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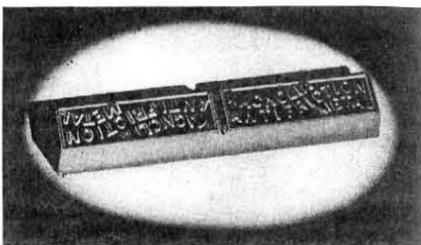
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California. The project will be conducted by the engineering firm for McLaughlin and Applegarth Company, San Francisco lease holders. A crew of 14 men is employed in constructing a base camp and two miles of road to the property. Open-pit mining will be used, and the ore will be trucked to a railroad for shipment. The property was last worked during the first World War. Arthur O. Hall is engineer in charge at Red Bluff.

Operation of the new 300-ton mill at the Church mine of Madre de Oro Gold Mines, Inc., is scheduled for Christmas time. The company is reported to have expended \$100,000 on development and equipment for the property, located three miles south of El Dorado, California. Besides the mill other equipment being constructed includes an 80-foot steel head-frame, 200-horsepower double-drum hoist, and 750-cubic foot duplex compressor. The main, three-compartment shaft is 1,200 feet deep and the mine has been opened at 10 levels. Three strong veins are stated to be exposed with an extensive area remaining to be explored. A crew of 26 men is employed under the direction of W. J. Loring, consulting engineer and general manager, El Dorado.

The Sunshine Dredging Company, comprised of R. R. Moore and R. A. Nienaber of the state of Washington, is starting a dredging operation on 1,200 acres of ground acquired recently from Artie E. Griffith of Weaverville, California. A complete new, all-electric, two-yard plant will be installed on the ground. The operators have been dredging below Douglas City, California, on the Trinity River for about two years and are now testing additional ground near Trinity Center, California. They also conduct a dredging operation in Washington.

Independence Gold Mines has started mining operations, following a testing program at its property near Camanche, Calaveras County, California. Equipment includes dragline, stationary trommel, Caterpillar, and Carryall. Approximately 400,000 yards of gravel are estimated to be available, and from 1,500 to 2,000 yards are expected to be handled daily.

Mining operations are scheduled for the near future at the Red Star hydraulic mine near Foresthill, Placer County, California. Dave M. Rea, Georgetown, California, is in charge for A. T. Erickson, operator, Box 163, Hopland, California. Four miles of flume and 10 miles of ditch will be built in addition to reconditioning the property. A crew of 20 men is employed.

The Golden Center Mining Company is maintaining normal production at its Scotia mine following settlement of a two weeks' strike involving around 100 employees. The cyanide unit at the Scotia shaft of the Golden Center mine operated continuously during the strike. Cooley Butler, 745 Rowan Building, Los Angeles, California, is owner of the Golden Center.

The Vallicita Dredging Company, Vallicita, California, has placed a dragline dredge in operation on a large tract of gravel at Vallicita. A year's operation is planned at this location. O. R. Beever,

Box 65, Angels Camp, California, is manager and holds an interest in the company.

Henry and Weaver, dredge operators of Stockton, California, have dismantled their dragline dredge at Jenny Lind, Calaveras County, California, and are moving it to Volcano, Amador County, where they plan to work a large gravel deposit. James H. Henry, 740 West Willow, Stockton, is a member of the firm.

A 30-stamp mill is handling gold ore at the Royal mine near Milton, California, operated by Frank Tower, owner and manager. Recent development work has exposed commercial ore in newly opened ground, and substantial reserves have been blocked out.

A mill will be erected at the Dorr group of tungsten claims 60 miles northwest of Needles, California, in the New York Mountain range, and work is underway to increase the depth of the well in order to obtain a larger water supply. Milling equipment, formerly used at a mine south of Needles, has been brought in, and the operators plan to add a flotation unit and two concentrating tables in the near future. The property has been acquired by Warren T. Potter, 760 South Marengo Avenue, Pasadena, California, and Clarence S. Potter, also of Pasadena. The deposit is low-grade, but it is thought that ore averaging 2 per cent tungsten can be mined profitably at the present market price. A total of 500 feet of shaft work has been completed to date, and approximately 300,000 tons of ore are reported to have been blocked out.

Baker and McCowan, Quincy, California, has started operation of a dragline dredge at gold placer property in the district of old China Town, in Meadow Valley, California. There is estimated to be sufficient gravel available for a year's work, with prospects of development of additional deposits. Equipment includes a 125-yard Bodinson dredge and a 1½-yard Lima dragline with Caterpillar engine and two 1½-yard Esco buckets. John McCowan, Chico, California, is in charge.

Property of the Zaca Mining Corporation, N. H. Bennett, president, Russ Building, San Francisco, California, is under lease and option to H. B. Chesser, who is reconditioning it preparatory to production. A substantial reserve of ore containing commercial values in gold and silver is reported to be in sight. The Colorado tunnel of the Zaca ground has been subleased for one year by Chesser to E. T. Drake, Silver City, Nevada, and associates of Reno. The property is located near Markleeville, California.

Allied Mines, Inc., Sidney B. Wood, Jr., president, now has headquarters in Pasadena, California. Mail address is Box 723. The company has under its management the American Girl mine at Ogilby and the Plumbago mine at Alleghany, both formerly operated by O'Brien Mines, Inc.; the Far West Dredging Company; and Dutch Consolidated Mines.

A new mill is in operation on high-grade gold ore at the Big Four mine near Julian, California. The plant consists of a stamp

mill, using inside amalgamation followed by apron plate, and the tails are floated in a Groch deep cell flotation machine. William Sperber, Julian, California, is manager. The ore being mined was encountered while extending one of the old drifts.

Test runs are being made in the reconditioned and modernized mill at the German Ridge and Jupiter gold mines northeast of Angels Camp, California. The property is operated by **Western States Gold Mines Consolidated**, Clifford McClellan, president, Box 64, Angels Camp. A considerable quantity of ore is stated to be blocked out, and development of a large tract of ground is planned. New mining equipment has been installed and present operations are being carried on below the old productive area of the mine.

**Pacific Chrome and Manganese Syndicate**, 605 Market Street, Room 707, San Francisco, California, has reported the purchase of a large tract of logged-off land from the Hammond Lumber Company at Symns Camp, Del Norte County, California, and the starting of work on the Rattlesnake Mountain deposit in northern California. The company, a partnership comprised of Leland J. Cuneo, U. A. Cordes, and H. B. Piggott, is engaged in checking, testing, and developing chrome and manganese deposits throughout northern California and southern Oregon. Cuneo is supervising field work in Del Norte County.

The **Butler Mining Corporation**, E. L. Spencer, president and general manager, 403 Benjamin Franklin Life Building, Santa Barbara, California, will operate the **Iowa Hill** drift gravel property, comprising 1,000 acres, near Iowa Hill in Placer County. The 1,100-foot tunnel has been cleaned out and retimbered, and a ditch has been put into condition. Louis R. Ball, 369 Forest Avenue, Laguna Beach, California, is consulting engineer for the Butler Mining Company and is in charge of the present project. An expenditure of \$10,000 is reported to have been made on the property during the past year.

The 35-ton mill at **El Dorado Argonaut** mine two miles east of Greenwood, El Dorado County, California, has been shut down because of the high price of water, but it is thought that a private supply of water may be developed. Underground development work is being continued, and around 100,000 tons of gold ore are estimated available for mining. According to Oliver Dupuis, Greenwood, installation of a small cyanide plant is planned to handle the mill concentrate. The plant now includes a 35-ton Marcy ball mill, a 12 by 18 Denver mineral jig, rake-type classifier, conditioner, flotation cells, and table. Eleven tons of concentrates have been shipped to date. Associated with Dupuis in operation of the mine are Bryant Moore, Exeter, California, and Jack Sisler, Box 527, Visalia, California.

A 10-foot ledge of commercial ore, carrying free gold and sulphides, has been reported at the **Hageman** mine two miles north of San Andreas, California. The strike, made on the 125-foot level, is said to be the largest uncovered at the property so far.

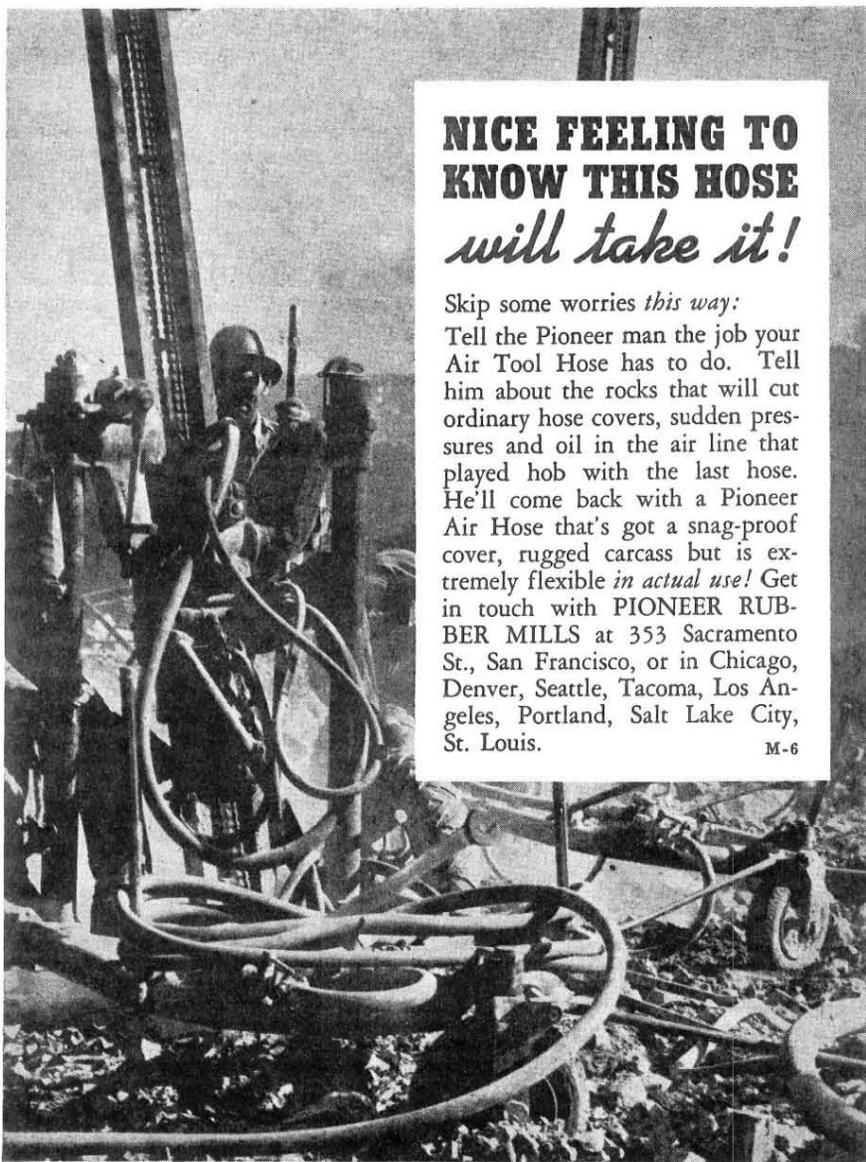
C. O. Mittendorf, Box 321, Randsburg, California, has resumed mining activity on a small scale at the **Ophir** mine nine miles northeast of Trona, California. He has announced that he intends to hold the ore until the first of the year on the possibility of the price's increasing in the meantime. The last 62-ton carload of ore is stated to have run 44.76 per cent lead and to have carried sufficient bonuses to offset smelting and treatment charges. Mittendorf is leasing the Ophir from the Engineers Exploration Corporation. Tom Hitz is associated with him in the operation of the mine.

Ore is being stockpiled at the **Lakeview** mine, Trona, California, pending milling.

The property, located in Sand Canyon in the Slate Range, is owned by Charles Bishop and associates.

Profitable mining operations are continuing at the old **Hudson** mine in the Mother Lode section of California in the vicinity of Angels Camp. The property is a producer of gold ore which is crushed in a 30 stamp mill at the mine. Frank Tower, Milton, is owner and operator of the Hudson.

The **Mountain King** mine, formerly operated by Jumbo Consolidated Mining Company near Hodson, via Copperopolis, California, is being reopened and dewatering has begun preparatory to resumption of mining operations. Work is proceeding



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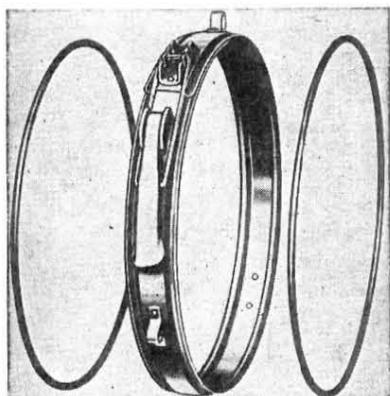
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under the direction of Byron Rowe, Box 552, Jamestown, California, who at one time acted as superintendent of operations for Jumbo Consolidated. The mine is developed to a depth of around 1,250 feet, and the ledge is said to average five feet in width with the mineralized zone showing a maximum width of 50 feet. All litigation formerly involving the property has been settled. Lester Robinson of Los Angeles now controls the Mountain King.

Idaho Maryland Mines Corporation, Albert Crase, general manager, Grass Valley, California, is producing around 1,200 tons of gold ore daily, and mining activities are reported to be at the highest point since settlement of the strike last May. At the New Brunswick mine a 1,000 horsepower motor, Ottumwa double-drum hoist and a 600-horsepower Nordberg single-drum hoist have been placed in operation and the surface and shaft work has been almost completed. Satisfactory ore is reported to be under development in the lower workings of the Brunswick and Idaho mines, and the Bullion property is being worked by a small crew. The mill at the New Brunswick, which was shut down during construction of the surface plant, has resumed operations. A crew of 777 men is employed by Idaho Maryland Mines Corporation.

Bert C. Austin and Company, Inc., W. N. Hubbard, president, 410 Balfour Building, San Francisco, California, will start trucking ore from its Pine Hill mine to the Stockton Hill mill, a distance of about eight miles. The property is operated by Red Pine Mining Company, Inc., which is managed by Bert C. Austin and Company. The mine is located about 14 miles southwest of Grass Valley near Wolf, California. Values are in gold and silver. The Austin concern also operates the Three Queens mine near Foresthill, California, under the direction of W. J. Bathurst, superintendent. Hubbard is in charge of work at the Pine Hill mine.

Low-grade ore has been the cause of curtailed development work at the Spring Hill mine, Grass Valley, California. Drifting continues on the 1,900 level, but unsatisfactory results are reported by C. C. Cushwa, superintendent, Box 1001, Grass Valley. The mill is operating on one shift.

Magee Mercury, Inc., headed by Harry H. Magee of Thomas Magee and Sons, real estate firm, 69 Sutter Street, San Francisco, has completed construction of a 100-ton Gould rotary furnace at its quicksilver property near Guerneville, Sonoma County, California. Since starting operation of the plant August 15, around five flasks of quicksilver have been produced daily. Bert C. Austin, 417 Balfour Building, San Francisco, is vice-president and engineer; H. B. Rucker, 354 Pine Street, San Francisco, is secretary; and Thomas A. Monahan, Box 326, Guerneville, is manager.

A preliminary test is to be made by Hills Brothers of Los Angeles on 100 tons from their asbestos deposit 10 miles west of Altaville, California. The initial shipment has been made and shipments will

be continued at the rate of 10 tons daily to Hills Brothers who hold an option on the property. If results of the present investigations warrant it, large-scale mining operations are planned. In addition to asbestos, the ore carries chrome and magnetite. Roy Hyatt is in charge of operations. Charles Gillis and J. W. Bandhauer of Angels Camp, California, owns the mine which is known as the Grada claim.

The Dodge Construction Company of Fallon, Nevada, H. K. Atkinson, manager, Round Mountain, Nevada, is handling 3,500 cubic yards of gravel daily at its placer property below the Plumas Eureka mine near Johnsville, California. The recovery equipment installed last year has been enlarged and improved, and the water supply has been increased. A power shovel is used in mining the ore. Dodge Construction Company also operates a gold placer property, acquired the first of the year, in the Little York district of Nevada County.

Discovery of a 16-inch strip of ore has been reported 630 feet from the shaft on the 200-foot level of the property of Junction Gold Mines, Inc., near Soulsbyville, California. Discovery of a 14-inch quartz vein was reported a few months ago on the same level 514 feet from the shaft. Junction Gold Mines, Inc., is headed by John D. Fenstermacher of the Columbia Steel Company, San Francisco; E. H. Minor, Soulsbyville, is superintendent; and Harry F. Davis, 156 Montgomery Street, San Francisco, is secretary.

El Dorado Dredging Corporation, Hal Robb, president, 699 Second Street, San Francisco, is handling 2,000 yards of gravel daily at its location on Travis Creek near Georgetown, California. Approximately 400,000 yards will have been taken from this 50-acre site when work is completed this month. According to present plans, the equipment will be moved to a new location on Irish Creek between Garden Valley and Kelsey. Three daily shifts are employed. Nine men work on the dredge, while 14 are engaged in prospecting new ground and preparing land for dredging. Equipment being used includes a Bodison dredge and Northwest dragline equipped with a 1½-yard Esco bucket and powered by a 165-horsepower Murphy Diesel. A Caterpillar Diesel furnishes power for the Bodison washing plant. R. L. Zanini, Greenwood, is superintendent in charge of operations.

Although operating profits before depreciation, depletion, and federal income taxes have been higher this year than last, directors of Alaska Juneau Gold Mining Company, P. R. Bradley, president, 1022 Crocker Building, San Francisco, California, have announced that in view of existing conditions the dividend normally payable November 1, 1941, would be deferred. Operating profits, taken before the previously mentioned deductions, amounted to \$931,800 for the first eight months this year against \$798,100 in the corresponding period of 1940. The company paid dividends of 12½ cents a quarter for the three preceding quarters of this year and 15 cents quarterly or a total of 60 cents a share in 1940. The proportion of the

estimated total profit before charges that the company has been able to carry down to net profit has been declining progressively in recent years. In regard to passing payment of the dividend, the company stated that about one-third of the normal working crew had left for other occupations, particularly in connection with defense works in Alaska where wages had been much higher than in the mining industry. For September the company reported an operating revenue of \$254,100 and a profit of \$43,200 taken before income charges. The figures compare with August operating revenue of \$335,300 and a net operating profit of \$98,100.

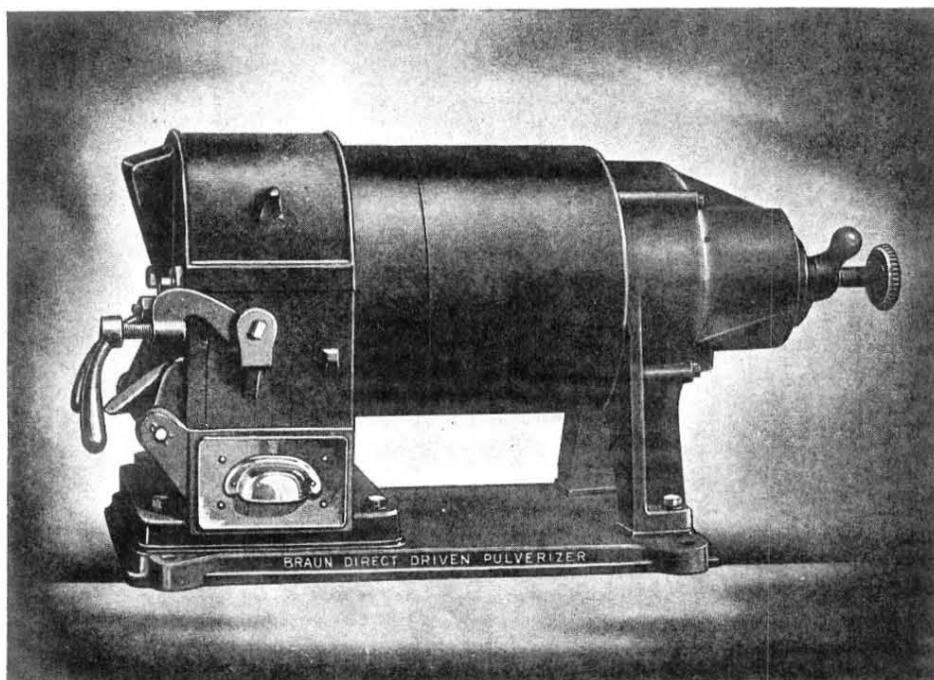
The 600-ton Huelsdonk concentrator at the drift mine of Ruby Mines Company, Goodyears Bar, California, handles 250 tons of gravel daily when operations at the property are in full swing. Water used for milling operations is supplied from Rock Creek above the mine by means of a two-mile pipe line. P. G. and E. power is utilized. Work at present includes running a drift to the Lowry shaft in order to obtain a second exit, a working tunnel, and to furnish a drainage outlet. Two hundred feet remain before reaching this objective. A crew of 30 men is employed under the direction of L. L. Huelsdonk, resident manager. William T. Reed, Jr., Box 26, Downieville, California, is underground foreman, and A. R. Hinton, Goodyears Bar, is chief electrician and master mechanic.

COLORADO

Eighty men are employed in the mines of the Slide Mines, Inc., at Boulder, Colorado, and 12 in the 75-ton mill. Ore values are in gold, silver, lead, copper, and tungsten. The company, Ward E. Terry, 420 Security Building, Denver, president, has been in steady production for some time. J. H. Rodgers, 1305 Euclid Street, Boulder, is general manager; R. G. Sullivan is assistant general manager; Robert W. Evans, mill superintendent; Clyde R. Boyle, chief mine engineer; George Hertzke, master mechanic; and J. L. Yoder, purchasing agent; all receiving mail through the company box, Box 1, Boulder.

It is reported that the Davis Gold Mines Company, Lynwood W. Davis, 1120 Cook Street, Denver, Colorado, manager, has acquired the 50-ton flotation mill from the Eldorado Gold Mining Company. The Davis company holds the Golconda property at Lake City in Hinsdale County, Colorado, and will use the Eldorado plant as a pilot mill. The Davis interests are stated to have purchased also the 250-ton mill and property of the Empire Chief Mining Company near Lake City. Both the Eldorado Gold and Empire Chief concerns have been involved in legal difficulties in recent months and have not been operating.

A carload shipment of gold ore was recently made to Midvale, Utah, by the Forest Hill, Inc., operated by Louis G.



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## QUICKSILVER AND ANTIMONY SOUGHT IN STAYTON DISTRICT

EDGAR H. BAILEY and W. Bradley Myers of the U. S. Geological Survey have completed an examination of the quicksilver and antimony mining district centering around the Stayton mine, Merced County, California. The investigation was undertaken as a part of the survey's investigation of domestic deposits of strategic minerals.

The Stayton district is located about 13 miles northeast of Hollister and includes parts of Merced, San Benito, and Santa Clara counties. Around 1,700 flasks of quicksilver, mostly between 1870 and 1880, and a few tons of antimony ore have been produced from this section.

The survey describes the district as being occupied mainly by Tertiary igneous rocks, which include basaltic flows and tuffs, andesitic agglomerates, and several bodies of andesite and rhyolite that have been intruded into those volcanic rocks. Older rocks, including Franciscan serpentine and Cretaceous (?) sedimentary rocks, are exposed in a few places. Ore bodies occur in the basaltic flows and tuffs along north-striking faults and near the crest of a north-trending anticline. The andesitic agglomerate, which unconformably overlies the basaltic rocks, is unmineralized, and the intrusive bodies have no direct genetic relation to the ore.

The antimony ore mineral is stibnite ( $Sb_2S_3$ ), which has been deposited with quartz in fissures and has partially replaced the brecciated rock along the fault zones. The mineralized bodies of breccia have an aggregate length of more than 3,000 feet; most of them are only a few feet wide, but a few are as much as 30 feet wide for short distances. The breccia contains, on the average, less than 1 per cent of antimony, and ore of this low grade cannot be mined profitably at present, except possibly by large-scale methods. Lenses or pods of pure stibnite, a few feet long, occur in the breccia, and these rich lenses, as well as the parts of the breccia bodies in which lenses are abundant, can be mined profitably, but careful prospecting is required to locate the lenses. The low-grade breccia contains several thousand tons of antimony.

The valuable quicksilver mineral is cinnabar (mercury sulphide). Three types of quicksilver deposits have been mined in the district: (1) Veins and impregnations in fractured antimony veins, (2) veins in otherwise unmineralized basalt, (3) veins and impregnations in silica-carbonate rock derived from serpentine. The more productive ore bodies are along the easternmost broken antimony veins and in basalt immediately below the andesitic conglomerate.

The reserves of the five largest quicksilver mines in the district are estimated to contain more than 1,000 flasks of quicksilver. The largest mine, the Stayton, is probably capable of producing nearly 100 flasks a year for a few years. Additional deposits of medium-grade ore might be uncovered by further prospecting along the broken antimony veins in the basaltic

rocks below the overlying andesitic agglomerate. Another potential ore body of large size but averaging only about two pounds of quicksilver to the ton is partly exposed in the western workings of the Stayton mine.

## MINERALS YEARBOOK, REVIEW OF 1940, NOW AVAILABLE

THE Minerals Yearbook, Review of 1940, published by the United States Bureau of Mines, is now available. Minerals Yearbook, generally held to be the official reference work and statistical record of the mineral industries, contains 72 chapters prepared by nationally and internationally known specialists in the field of mineral economics and technology. The volume, covering 1,459 pages, was issued under the direction of E. W. Pehrson, chief, economics and statistics branch, and H. D. Keiser, editor.

Minerals, classified as important to the defense program, have been given special attention in the book; much information relative to these minerals is being published for the first time, being unavailable heretofore. For example, statistics of magnesium production in the last three years and of magnesium consumption in each industry are presented in the chapter on magnesium. The results of a survey determining the reserves of bauxite, a discussion of stocks of and requirements for nickel, and mercury estimates by the more important producers as to reserves and probable output at various price levels are included also in the new edition of Minerals Yearbook.

While all minerals discussed in earlier volumes are covered in the new edition, in many cases the coverage has been expanded. A new chapter, Review of the Mineral Industries of 1940, offers a summary of the principal developments during the year, and also a detailed historical record of the establishment and organization of the various government defense agencies concerned with problems in the field of minerals.

The book, which sells for \$2.00, may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C.

## NEW BULLETIN ON TUNGSTEN PREPARED BY STATE BUREAU

A TIMELY new bulletin, "Tungsten Deposits of Arizona," has just been issued by the bureau of mines of the University of Arizona. The bulletin was prepared by Eldred D. Wilson, geologist with the bureau, and tells of the uses, specifications, marketing, and concentration of tungsten as well as the minerals from which it can be obtained, occurrences in Arizona, and possible buyers of concentrates.

In Arizona only the wolframites and scheelite have been of commercial importance and most of the production that has been obtained has come from lode deposits, although a few placers have yielded notable amounts. Seventy-four Arizona tungsten properties are mentioned in the bulletin and many are described in detail.

## CHROME RESOURCES OF U. S. BEING STUDIED BY BUREAU

ACCORDING to E. D. Gardner, supervising engineer for the United States Bureau of Mines, Tucson, Arizona, the bureau is giving special attention at this time to the search for deposits of chrome ore. Gardner, who is in charge of all strategic mineral exploration work of the bureau west of the Mississippi and in Alaska, has just returned to his headquarters after completing a 15,000-mile tour with Charles F. Jackson, chief of the bureau's mining division.

The government has leased a chrome deposit in Stillwater County, Montana, on which the bureau did trenching and drilling last year. A second deposit is under development nearby, and drilling is planned for a third in that area. Other chrome deposits under investigation include one on the Kenai Peninsula, Alaska, three in California, and one in Sweet Grass County, Montana.

In referring to the bureau's work on manganese, Gardner stated that it was estimated that 9,000,000 tons of low-grade manganese ore are available, an amount sufficient for present needs.

Thirty engineers are in the field from the Tucson headquarters, where 18 resident engineers and office workers are employed. Gardner has announced that the Tucson office will spend during 1941 and 1942 about two-thirds of the \$1,000,000 appropriation made by Congress for mineral surveys.

## STATEMENT

of the Ownership, Management, Circulation, Etc.,  
Required by the Acts of Congress of  
August 24, 1912, and March 3, 1933

of

The Mining Journal

Published semi-monthly at Phoenix, Arizona, for  
October 1, 1941

STATE OF ARIZONA, }  
COUNTY OF MARICOPA, } ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Charles F. Willis, who, having been duly sworn according to law, deposes and says that he is the publisher and owner of The Mining Journal and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher—Charles F. Willis, 528 Title and Trust Bldg., Phoenix, Arizona.

Editor—Same.  
Managing Editor—Same.  
Business Manager—M. Brown, 528 Title and Trust Bldg., Phoenix, Arizona.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given). Charles F. Willis, 528 Title and Trust Bldg., Phoenix, Arizona; Helen H. Willis, 528 Title and Trust Bldg., Phoenix, Arizona.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgagees, or other securities are: (If there are none, so state.) None.

CHARLES F. WILLIS, Owner.

Sworn to and subscribed before me this 16th day of September, 1941.

(Seal) Notary.  
(My commission expires April 20, 1943)

WILLIAM J. LORING\* gives the

## History of Madre de Oro Gold Mines, Inc.

OPERATIONS of Madre de Oro Gold Mines, Inc., have been confined mainly to the development of two of its three properties, the Independent and Church mines, allowing the Starlight to remain idle for the present. All three properties are located in the Mud Springs Mining District, El Dorado County, California, and are within 8 miles of the town of El Dorado, 38 miles from Sacramento, and 14 miles from Plymouth. The mines are served by paved roads from all directions, long-distance telephone and telegraph service, and the Pacific Gas and Electric Company furnishes power to the mines.

The principal mine of the group at present is the Church mine, well known for its historical background, the story of which reads like a fairy tale. The old records that are available are not as complete as records made today, but they are interesting.

During the year 1850, when placer mining was the only known method of producing gold in the West, gulches and small creeks were worked by the several placer methods then known. Among the many creeks that were worked by the Mexican inhabitants was Dead Man's Creek, which joins Martinez Creek, the former passing through the property that finally became the Church mine.

Very rich float was found in the gulch, rich and abundant enough to supply the several arrastres with their needs. Then the outcrops of veins were found. These veins, striking north and south through the slates, eventually became the great Mother Lode of California. Crude mining methods were applied to these rich veins, and shallow shafts were sunk, but no great depths were attained because of surface water flooding the workings. It will be interesting to those who are not acquainted with the Mother Lode to note that, until the big power companies developed hydroelectric plants, the Mother Lode was amply supplied with water, as springs and gulches ran water the year round. Consequently, hard-rock deep mining in the early days was not possible, but this condition was soon overcome when the world learned of the riches, first, in placer deposits, second, in rich quartz veins.

This news finally reached Cornwall, the West of England, where mining for tin had been carried on long before California gold was discovered. There was an influx of Cornish miners who became the leaders in hard-rock mining for many years in California and the West generally. In my opinion, credit is due to the Cornish miners for mining methods adopted and for the introduction of the very efficient Cornish

A 350-ton milling plant is nearing completion at the Church mine, one of El Dorado County's early day producers. In the fifties this land was the site of a Mexican settlement of 2,000 people who mined the surface float quartz and the upper portions of the quartz veins, milling the ore in arrastres.

pump, both of which were largely responsible for the many mining successes in the West. Hence, the eventual success of the Church mine was due to the Cornish miner and his pump.

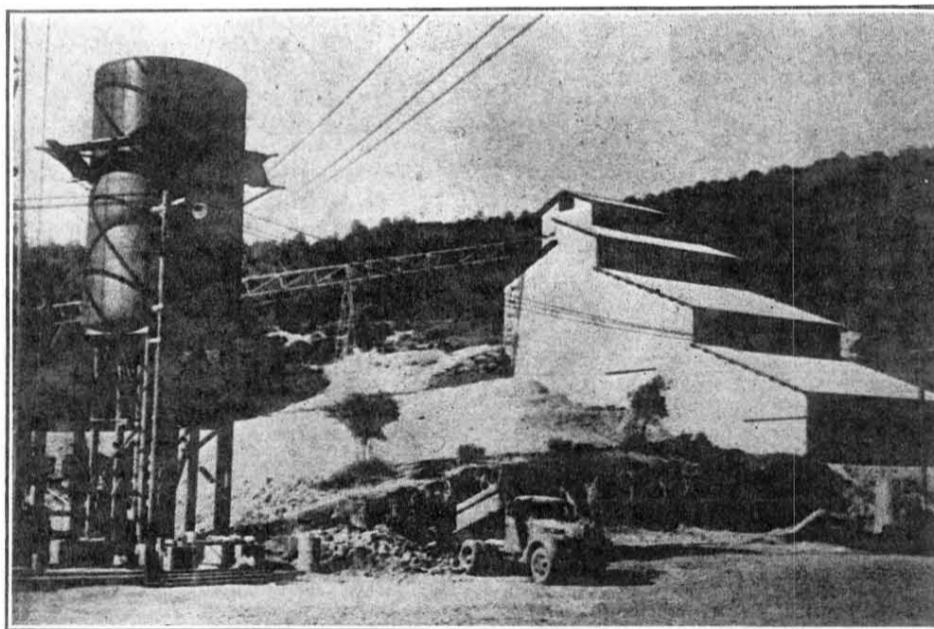
Several years of what we might call experimental work followed, for really the early day methods were experimental. Fortunately the ore was rich, made so by selection, and the method of ore treatment did not embrace large tonnage operations. This, in itself, made it necessary to mine the best ore obtainable, and caused a method to be adopted that would provide a minimum tonnage of a maximum value.

THE next period of the Church mine was not much in advance of the "experimental" period. At that time a 10-stamp mill with a capacity of 30 tons daily was installed. The required capital of \$1,500 was supplied by four men who were already along in years. A vertical three-compartment shaft was sunk and, as levels were reached, mining the ore to supply the 10-

stamp mill was commenced. A Cornish pump was installed and this shaft, of three 4 by 4 1/2-foot compartments, finally reached the 1,200-foot level. Ten levels were opened from this shaft.

Mining and milling operations were conducted for 12 years. The average mill heads, according to statements by the old management, were \$27 per ton and the extraction was 75 per cent, or a recovery of \$20.25 per ton.

The shoots of ore were continuous from the surface to 350 feet and for about 100 feet the shoot was low-grade, according to old reports, but it must be remembered that there is a wide margin between highly payable ore these days and \$27 those days. From above the 500-foot level to the 1,200-foot level in the shaft, and for 130 feet below with good ore in the bottom of a winze, there was no interruption of the oreshoots in size or value. As to size we find that the width ranged from 4 feet to 16 feet between walls in the old stopes, and the length mined by the old timers ranged around 250 feet, with ore extending into both ends of the stopes. The ore as broken was sorted in the stopes. The discarded ore is payable at this time for two reasons: first, the price of gold is \$14.33 per ounce higher than it was when the old timers worked the mine, and second, our recovery will be at least 93 per cent while the previous recovery was scarcely 75 per cent, or 18 per cent less. In other words, the value of gold today represents dollars worth \$1.70 each, instead of \$1.



General view of the 200-ton primary ore bin and 350-ton mill building at the Madre de Oro Gold Mines, Inc. Ore truck is delivering ore to stockpile from temporary ore bin.

\*Managing Engineer, Madre de Oro Gold Mines, Inc., El Dorado, California.

With gold at \$20.67 and an extraction of 75 per cent, or \$15.50, the loss per ounce was \$5.17. Now, with gold at \$35 an ounce and an extraction of 93 per cent or \$32.55 the loss per ounce is only \$2.45. Therefore, on the above basis, we have \$32.55 per ounce in place of \$15.50. The mine never had a mill of more than 10 stamps, and its capacity was less, rather than more, than 30 tons daily. Nevertheless, the mine operated at a handsome profit for 12 years and did over 6,000 feet of development work.

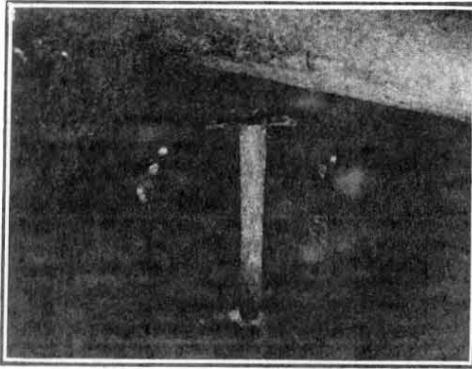
The Church mine was taken over by the writer from Mark U. Weber and others, whose option was secured from Mrs. Ruth S. Hill, widow of the late Seamore Hill, a well-known mining and cattle man of El Dorado whose ownership started early in 1900.

**MADRE** de Oro Gold Mines, Inc., was organized under the laws of the State of California on February 26, 1940, with 1,000,000 shares of a par value of \$1 each. Since its incorporation, it has equipped the Church mine with nearly all the mining and milling plant to mine and treat any tonnage up to 350 tons per day.

The equipment consists of: Blacksmith shop fully equipped with drill sharpening machine, drill heating oil furnace, drill press, threading machine, and an abundance of tools and supplies; business office, assay office, and sample room; an 80-foot steel headframe, 200-ton steel ore bin, 10 by 20 Blake-type jaw crusher, 360-foot belt conveyor to convey the ore to the mill, 480-ton mill bin, 20 stamps of 1,150 pounds set on concrete base, Hardinge ball mills in closed circuit with Dorr duplex classifiers with Pan-American jigs, conditioner tank and 14 Pan-American flotation cells, thickener tank and American filter with all the necessary pumps for the plant; Wilfley table for cleaning the hutch product from the jigs, amalgamating barrel, etc. The mill is housed in a fine building, and all floors are of concrete. A 200-horsepower double-drum hoist and a 745-cubic foot Chicago Pneumatic air compressor are being installed. The hoist and compressor, which will be powered by Pacific Gas and Electric Company, will replace the preliminary hoist and compressor that have been in use for the past two years.

The Church mine has all the supporting evidence of a most successful Mother Lode operation. Its past history, its sizable ore bodies, and its location are all in its favor. It adjoins the famous Union mine whose production record indicates over \$11,000,000 and whose 2,000-foot level, 800 feet deeper than the bottom level in the Church mine, still shows valuable ore.

Three vein systems pass through both properties, all within a distance of 80 feet from outside to outside. Only one of these veins, the Middle vein, was worked in the Church mine. The East vein, the rich vein of the district, was not worked until Madre de Oro Gold Mines, Inc., became its owner. Development work in that area has shown some very high-grade ore. The West vein has not yet been developed. In size the latter is much larger but its value



These workings on the 600-foot level are still in wonderful condition even after 40 years of idleness. The drift at the left is 175 feet in length and the one on the right, which extends to the Union end line, is 680 feet in length.

is less for 3,000 tons milled as a sample averaged only \$8.67. The Church mine has useful development work in perfect condition, including a 1,200-foot three-compartment vertical shaft, timbered, and with 10 levels all accessible. These levels are all on the Middle vein from which it is proposed to crosscut to the East and West veins.

It is estimated that the useful and perfect underground workings at the Church are worth at least \$200,000 today. Added to this advantage is the fact that the mine is opened now, not four years hence. The writer's success on the Mother Lode has been in the rehabilitation of mines having a production record, mines not too deep, of sizable ore bodies, but never worked on a large scale or by flotation or other modern methods. Given these conditions success is assured if the capital is adequate to equip the mines to fit the needs, and not to have to fit the mines to the finances. In the latter case failure is most likely to follow for economical operations cannot be accomplished unless all details are supplied. It is well to remember that baling wire is suitable for baling hay, but not for equipping mines.

The board of directors of Madre de Oro Gold Mines, Inc., is composed of serious and successful men and the goal of the organization is to grow into an important labor employing and profitable operation. Milling is scheduled to start as soon as the hoisting equipment now being installed is in running order.

Officers of the company are as follows: Forrest Riley, president; Hazel Riley Mitchell, secretary-treasurer; Burr H. Winslow, vice-president. These together with W. J. Loring, managing engineer, Art Nicholson, Henry Lubking, and G. E. Gilmore, form the board of directors.



## Blasting The Waste Rock by Fisher Vane

**T**HAT soul-searing word "priority" is being edged out of the American industrial picture by the tighter word "allocation." And the latter means, to the small manufacturer, exactly what the word "rationing" means to a lifeboat full of sailors whose ship's been sunk.

\*\*\* "Allocation" is the new password in the Battle for Metal. It comes on the scene as a running mate to the unprecedented (and may we say unnecessary) widening and tightening of government power over business.

\*\*\* A few days after SPAB Tear Don Nelson cracked down on the use of copper for any of a list of about a hundred "civilian" articles and gadgets, from cuspidors to coffins, he ordered the auto industry to cut out the use of "scarce metals" for car ornamentation after mid-December. Nelson's kibosh-order specifically bars the use of bright-work, metal trim, containing copper (Lordy, another wallop!) or aluminum, nickel or chrome. Big heartedly, though, it grants special exemption for plating bumpers and bumper-guard assemblies. Nix on plated hubcaps, window mouldings, license-plate holders, etc. Just wait till the "allocation" jalopies roll off the assembly lines!

\*\*\* The "priorities" technique broke down under pressure with lend-lease to England, Russia, China piled atop our own defense production. Even big industries found the going tough. Little ones remained empty handed when they went, hat-in-hand, begging for "scarce metals." Scarce? Well, executives of American chromite mines claim a profusion of American chromium ore, and rave because they cannot hammer facts into the domes of the boys in Washington who blithely reach out to Turkey for chrome . . . same to Brazil for manganese, and to Mexico for quicksilver.

\*\*\* This column already has questioned the actuality of the much-ballyhooed shortages. That admittedly skeptical viewpoint is not a "solo-thought." It is existent in a widening circle of mining industry minds. Is that smoke indicative of factual fire? As to the actuality, we're all willing to concede that in too many cases it is real, and is a direct result of federal mismanagement. We likewise have more than hunches that a deal of "shortage" is stemming from that which we bluntly term hoarding. The big business men who have been buying some of these metals ahead have a more pleasing word for it. God help the little industrialists—nobody else will.

\*\*\* The real top-head of SPAB is Vice-President Wallace. It is he who has Last Word on allocations—working arm-in-arm with Priorities Director Nelson. Already they're allocating copper, aluminum, "ersatz-rubber." Other war metals will get it fast. Our job is to dig out all we can of all metals we produce. In so doing, we must work with at least one eye on Washington, so that if the theory boys get too far off the sanity track we can re-rail them and rationalize their technique.

The Winslow Gold Mining Company, H. A. Funk, president, 501 Warren Avenue, Winslow, Arizona, is producing gold-silver ore at the rate of 150 to 170 tons daily, which is handled in the company's cyanide mill. Ore is being developed in a winze from the 100-foot level below the main haulage tunnel. This winze has been sunk 80 feet below the 100-foot level and is being deepened to permit running of a 200-foot level. A crew of 40 men is employed. P. W. Porter is consulting engineer and general manager; H. H. (Sam) Saum is mine superintendent; and George M. Snow is geologist and metallurgist; all of Yarnell, Arizona. Enoch Sellberg, Wickenburg, is mill superintendent and chief mechanical engineer. The company operates the Yarnell mine at Yarnell.

Production is being maintained at the rate of 100 tons a day at the Alvarado mine operated by Liberty Hill Gold Mines, Ltd., L. L. Farnham, general manager, Congress, Arizona. The main supply is coming from the upper levels, and development and exploration work is being pushed east. The gold-silver ore is treated in the 100-ton cyanide mill at the property. A total crew of 45 men is employed by Liberty Hill Gold Mines. R. P. M. Davis, 2356 Hollyridge Drive, Hollywood, California, is president of the company. George D. Middleton is mine superintendent, and Joseph P. Klein is mill superintendent, both of Congress.

Woodward and Weigent of Aguila, Arizona, are leasing at the Bullard mine eight miles north of Aguila, and are shipping one car of ore a week. John Smith of Aguila, with two men, is leasing on the east end of the property and is shipping one car a week. The values are in copper and gold. The mine is held by Bullard Gold Mines, Inc., J. P. Smith, general manager, Heard Building, Phoenix, Arizona.

Tailings from the mill at the Pump mine 12 miles south of Aguila, Arizona, are being shipped by Leo Farrington and associates. The property was operated over a year ago by the A. & J. Mining Company and is equipped with a 50-ton mill. T. B. Atkins, Aguila, is owner.

The Copper Bottom mine nine miles west of Quartzsite, Arizona, has been taken over under lease, and development work started with three men employed. Principal values are in copper and silver. The mine is owned by Ed Hussen, Quartzsite.

The mill of the Congress Mining Corporation, Congress, Arizona, is handling 150 tons of dump ore and from 200 to 250 tons of old mill tailings daily. A crew of 45 men is employed in the operation, which is under the management of P. H. Ramsden, Jr., general superintendent, and C. A. Rockwood, receiver, Heard Building, Phoenix, Arizona. A part of the property is leased to John M. Price of Congress, who is employing four men mining ore which will be milled at the Congress plant. William Herskowitz and associates also are leasing at the Congress mine. The Congress Mining Corporation has announced that its milling rates on custom ore are low and that it will accept any ore in the surrounding districts which will cyanide with a good recovery.

An exhaustive examination has been under way at the Blue Bell mine near Mayer, Arizona, by the Ohio Copper Company of Utah, Percy H. Kittle, president and general manager, Dooly Building, Salt Lake City, Utah. Kittle spent four days at the property, and E. G. Snedaker, treasurer-general superintendent, spent 10 days at the location during which he did a complete sampling job, assisted by four men. G. M. Colvocoresses, 1102 Luhrs Tower, Phoenix, Arizona, is interested in the Blue Bell.

The Artesia Investment Company of Ruby, Arizona, is reopening and developing the old Oro Blanco mine near there. Equipment includes a 25-ton Ellis mill, using amalgamation and concentration, and a 20-horsepower Fairbanks-Morse Diesel engine. The high-grade ore is shipped to the Hayden smelter, and the lower grade is milled. T. J. Anderson, general manager, Box 48, Ruby, reports that he is now shipping the third car to the smelter and that previous cars ran \$35 and \$67 a ton, respectively. He also announces that satisfactory recovery is being obtained from the ore milled. Values are in gold and silver. A crew of seven men is employed.

Canyon Mines, Inc., Hereford, Arizona, is employing 10 men at its gold, silver, and tungsten claims in the Huachuca Mountains, Cochise County, Arizona. Operations include breaking in the mill and development work. The concentration plant consists of crusher rolls, screens and tabling equipment. Other equipment includes a four-cylinder, 60-horsepower engine, and 25-horsepower hoist. The present operators purchased the mill outright and have taken a lease and option on the claims, which are owned by Gold, Silver and Tungsten, Inc., J. G. Clark, president,

Boulder, Colorado. Part of the property is in Miller Canyon and part in Carr Canyon. The principal claims are the Granite Reef, Colorado, Puzzler, and Lucky Strike. Tungsten is the principal metal. Frank Fields, Mammoth, Arizona, is manager.

Equipment installed at the Zaleski tungsten claims by T. J. Puryear, 405 East Ninth Street, Tucson, Arizona, has been removed and the lease surrendered. Joe Zaleski and Sam Kurby, Hereford, Arizona, own the property which is located in the Montezuma Canyon of the South Huachuca Mountains, Hartford district.

C. O. Stockstad, Box 1393, Bisbee, Arizona, is operating the Harper mine in the Hartford district of the West Huachuca Mountains. Equipment includes a new 4 by 4 Herman screening ball mill of about 25 tons daily capacity. Tungsten is the principal value.

Three cars of ore have been shipped in the last two months to the Hayden smelter from the Hercules mine four miles south of Salome. The property is under lease to Tom Rogers, Aguila, Arizona.

A group of five lessees is shipping high-grade ore from the Golden Ray mine 10 miles northeast of Parker, Arizona. Values are in gold and copper. C. P. Dennis and associates of Parker are owners.

A crew of seven men is employed at the Empire mine 11 miles north of Parker in the Cienega district of Arizona and operated under lease by A. W. Clapp, W. W. Harritt, and Frank W. Royer, all of Parker. Ore has been broken and shipments are expected to get under way in the near future. Values are in gold and copper. The property is developed by a 700-foot shaft, and miners are working on a 200-foot tunnel. The Empire is being leased from the Empire Mining Company, owner.

P. J. Dueker, Bouse, Arizona, is continuing development work and is sinking a 4 by 12-foot inclined shaft at a recently discovered body of ore at the Little Butte mine west of Bouse, Arizona. About 100 tons a month of 1-ounce gold ore are being shipped. All of Dueker's work is concentrated on the new find instead of old workings which are down 700 feet. Nine men are working on subleases at the mine. Eva D. Adams, Bouse, is owner of the Little Butte.

#### AVERAGE PRICES OF METALS

(Figures by American Metal Market)

	Copper Per Lb. Conn. Valley	Lead Per Lb. New York	Zinc Per Lb. St. Louis	Silver Per Oz. New York
1924	13.024	8.097	6.344	66.781
1925	14.042	9.020	7.622	69.065
1926	13.795	8.417	7.337	62.107
1927	12.920	6.755	6.242	56.370
1928	14.570	6.305	6.027	58.176
1929	18.107	6.833	6.512	52.993
1930	12.982	5.517	4.556	38.154
1931	8.369	4.244	3.638	28.701
1932	5.792	3.181	2.881	27.892
1933	7.276	3.870	4.031	34.728
1934	8.658	3.8595	4.162	47.973
1935	8.880	4.0648	4.331	64.273
1936	9.710	4.7091	4.903	45.038
1937	13.391	6.0085	6.517	44.805
1938	10.225	4.7388	4.613	48.222
1939	11.197	5.0531	5.117	39.032
1940	11.528	5.1788	6.339	34.773
1940				
Jan.	12.216	5.4712	5.644	34.75
Feb.	11.405	5.0761	5.543	34.75
Mar.	11.385	5.1923	5.75	34.75
Apr.	11.327	5.0712	5.75	34.75
May	11.324	5.0154	5.808	34.949
June	11.375	5.00	6.24	34.825
July	10.812	5.00	6.25	34.75
Aug.	10.954	4.8537	6.398	34.75
Sept.	11.536	4.9292	6.937	34.75
Oct.	12.00	5.3077	7.25	34.75
Nov.	12.00	5.7283	7.25	34.75
Dec.	12.00	5.50	7.25	34.75
Ave. 1940	11.528	5.1788	6.339	34.773
1941				
Jan.	12.00	5.50	7.25	34.75
Feb.	12.00	5.6023	7.25	34.75
Mar.	12.00	5.7654	7.25	34.75
Apr.	12.00	5.85	7.25	34.75
May	12.00	5.85	7.25	34.75
June	12.00	5.85	7.25	34.75
July	12.00	5.85	7.25	34.75
Aug.	12.00	5.85	7.25	34.75
Sept.	12.00	5.85	7.25	34.75
Oct.	12.00	5.85	7.25	34.75



The Lion's Den mercury mine near Solvang, California, is being worked by George F. Reed, 7922 Beverly Boulevard, Los Angeles, California. The caved and flooded shaft has been cleaned out and retimbered, along with some of the drifts. Reed also has done some drifting and crosscutting and sampled considerable caved ore under old stopes. He reports that after a little additional development, he expects to install a Diesel-electric plant and begin mining and treating the ore in a rotary furnace now on the property.

Mining operations are to be started in the near future at the Red Elephant quick-silver property by Red Elephant Mines, Inc. The mine, which has had considerable development by various interests for several years, is equipped with a small furnace and other machinery. Bert W. Busch, Lakeport, California, is California representative for the company. A. Gradin, 3887 Twenty-third Street, San Francisco, is owner of the Red Elephant.

Operations at the Walker Mining Company property, located at Walkermine, Plumas County, California, will be completely suspended, according to announcement by Jack Dugan, general superintendent of mines for International Smelting and Refining Company. International, a wholly owned subsidiary of Anaconda Copper Mining Company, controls Walker Mining Company, headquarters of which are maintained in the Kearns Building, International's offices in Salt Lake City, Utah. It was voted to close the property in Plumas County, California, because of the existing low price of copper. Dugan stated that operations started to slow down several weeks ago when some of the 500 miners then employed were laid off. A crew of only six to 12 men will be maintained as watchmen when all work has stopped. Several of the staff members have been transferred to Anaconda Copper subsidiaries at Rio Tinto and Copper Canyon, Nevada, and to the Anaconda chrome mine near Columbus, Montana. The Walker mine is a low-grade property and in 1940 produced 10,524,845 pounds of



copper with 237,891 ounces of silver and 14,176 ounces of gold.

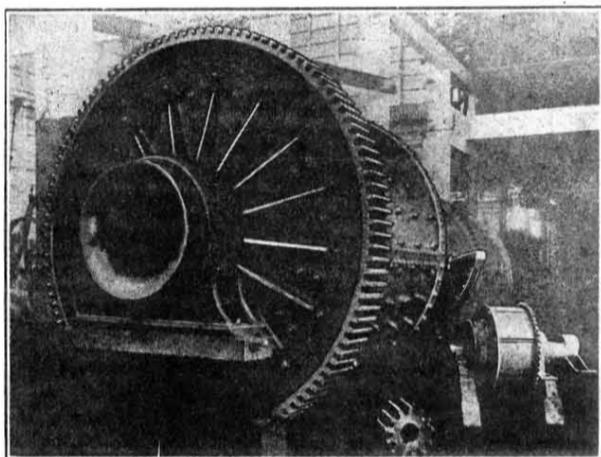
Preparations are under way to mine high-grade gold ore near Greenville, California, where a strike recently was made in an unexplored section. It also is thought that a substantial tonnage of mill grade ore can be developed. E. G. Brown and associates control the area to be mined.

Burtenshaw, Greenfield, and Bradt, sub-lessees at the King Solomon mine, one mile east of Randsburg, California, have reported completion of their third milling on October 17, with a gross value of \$3,000 realized from 35 tons treated. Production came from the blind vein, which has not been explored to any great extent, on the 300 level of the mine. This milling brings the total production from this vein to \$7,000 in two months' time. The King Solomon Mines Lease, comprised of James Nosser, James Christensen, Emil Schultz, and Max Hess, has operated the property for the past four years.

Natomas Company, Thomas McCormack, president, Forum Building, Sacramento,

California, has reported for the three months ended September 30, 1941, a consolidated net profit of \$268,471 after all charges including depreciation, depletion, and estimated federal income and excess profits taxes. This amount is equivalent to 28 cents a share on 968,350 capital shares outstanding and compares with a net profit of \$454,986 or 47 cents a share in the preceding quarter and with a net profit of \$269,625 in the third quarter last year, or 28 cents a share on the 975,750 shares then outstanding. For the nine-month period ended September 30, a consolidated net profit of \$1,138,457, after all charges, is reported. This figure is equivalent to \$1.18 a share on the capital stock and is against \$898,607 or 92 cents a share in the like period of 1940. The lower profit in the third quarter of the current year is a result of reduced gross revenues combined with higher expenses.

According to reports, mining operations have been suspended at the property of Stockton Hill Corporation, Walter R. Woock, president and general manager, Postoffice Box 449, Auburn, California, pending further financing for development work. Several productive veins are said to be in sight, but a sinking program is necessary before production can be resumed. Meanwhile the company will treat custom ore from the Pine Hill mine, approximately five miles distant and operated by Red Pine Mining Company, where around 100 tons are ready for shipment. The Stockton Hill plant, completed around



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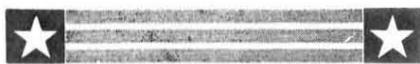
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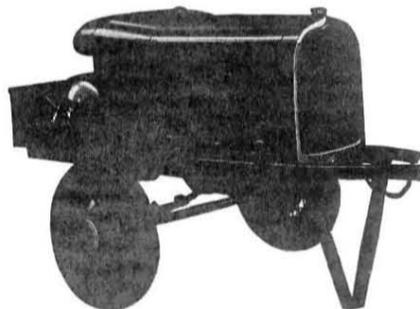
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the first of the year, is equipped with a 200-ton Marcy mill and both flotation and cyanidation units. The Red Pine Mining Company is under the management of Bert C. Austin and Company, Inc., 410 Bal-four Building, San Francisco, California.

The Lava Cap Gold Mining Corporation, Otto E. Schiffner, vice-president and general manager, Nevada City, California, is operating at capacity and keeping its development program ahead of production. From \$700 to \$800 are being spent daily on development, and production is maintained steadily at the rate of 400 tons daily. Employment has reached 350 men, but in view of employes leaving for defense work, the company has been forced to take on many inexperienced workers. Schiffner has reported values down all of this year, but a small profit has been realized due to operating economies and improved metallurgy.

Idaho Maryland Mines Corporation, Albert Crase, general manager, Grass Valley, California, has declared the regular monthly dividend of 5 cents a share on its capital stock, payable November 21, 1941, to stock of record November 10.

Plant Rubber and Asbestos Works, R. H. Shainwald, president, 537 Brannan Street, San Francisco, California, has scheduled full production at its new magnesite plant, Emeryville, California, for this fall. Construction has been completed and equipment installation is under way day and night. The new defense plant is designed to produce 85 per cent magnesite, using a new process and equipment.

Pasadena, California, investors have taken over a major interest in the lease held by Henry Pleikis on the Loam and Iveyhill tungsten claims northwest of Atolia, California. Machinery and other equipment are being brought in to the property preparatory to operation. A Rizzardini of Randsburg, California, is owner of the claims.

A two-mile stretch of road is being cleared to the old Dickinson dolomite mine in the Cienega district of California, with a view to large-scale mining if tests of the ore prove satisfactory. The present work is conducted by H. V. Underwood, Hollister, California, and associate. The property, last operated in the early 1920's, is owned by James V. O'Hara of Vallejo, California. It is near the ground now being tested by Permanente Corporation for its magnesium plant near Los Altos, California.

Drifting is in progress on two veins, one varying from 6 inches to 2 feet in width and the other from 3 inches to 2 feet, at the Evergreen mine in the Gold Run district of Placer County, California. This mine and the Reconstruction mine in the same district are under lease to B. M. Brimshaw of Nevada City, California, from L. G. and A. R. Merrithew, respectively. Values are in gold.

The Omega Company is employing 35 men in the sawmill, cleaning flumes, enlarging water storage facilities, etc., at its hydraulic mine near Washington, California. This crew has been maintained

since closing of the hydraulic season in July. A total of 430,000 yards of gravel was worked during the season, using four monitors. Operation of the mine was started last spring with completion of the Upper Narrows debris dam at Smartville on March 9. The company has 12 miles of ditches and flumes. Pipe and flumes carry the water 2,500 feet for the operation, and a 1,000-foot drop gives pressure to the water. The gravel is washed through 2,000 feet of sluice boxes, approximately 1,100 feet of which are underground. It is estimated that there remains sufficient gravel at the site for 20 years' operation. The Omega Company, Box 1068, Nevada City, California, is a co-partnership comprised of California and Oregon interests. Theodore A. Larsen, Washington, is superintendent at the mine, and G. B. Little, Sumpter, Oregon, is assistant superintendent.

The Red Star Mining Company, Inc., is starting operations at the Red Star hydraulic mine near Foresthill, Placer County, California. Two miles of flume and three miles of ditch will be built in addition to reconditioning the property. A crew of 20 men is employed. The mine is owned by D. M. Ray, Georgetown, California, and A. L. Ericksen of Santa Rosa, California. Ray has been operating properties in the Last Chance district for the past 40 years.

Operations are proceeding at the Omega quartz mine in the Willow Valley district near Nevada City, California, where work is being carried on by Carl Trevechick, Nevada City, and associates. Ore is trucked to the Queen Lil mill in the same district. The electric transmission lines at the Seven Aces mines at Alleghany, California, have been purchased and will be installed as soon as rights of way are cleared up. The electric compressor plant and motors formerly owned by Twin Sisters Mines have been purchased and moved to the Omega. A new 30-ton ball mill has been ordered for the property and will be used in conjunction with stamps, classifier, jigs, and a four-cell flotation unit for treatment of heavy sulphide ore. Mrs. J. H. Fogarty, 6127 California Street, San Francisco, formerly owned the Omega.

The Gold Meadows Mining and Milling Company has purchased the Lindsay group of gold quartz claims, comprising 151 acres adjoining 495 acres of ground which it already owns. Substantial reserves are reported in sight, and large-scale development program is planned by the Gold Meadows company. E. A. Nicolai, 1661 Washington Avenue, Oroville, California, is chief engineer. John W. Ross, M. S. Route, Oroville, is one of the principals of the company.

A good-sized deposit of cinnabar ore has been located at the Collegiate group of claims in the Chloride Cliff district, Inyo County, California, under operation by the Crowell Mining and Milling Company, and plans are under way to mine and mill this product. A five-ton Cottrell mercury plant is on the property, and a 25 to 30-ton mill for handling gold and silver ores will be reconditioned. The latter then will be available as a custom plant. Ore at the Collegiate group also contains values in

gold, silver, and lead. H. C. Moore, 5021 Franklin Avenue, Los Angeles, California, is president and general manager of the company.

The main building at the **Excelsior** mine near Downieville, California, burned to the ground recently. Origin of the fire was unknown. The mine is owned by Mrs. John Costa.

According to reports, development work has uncovered a 7½-foot vein of commercial gold ore at the **Cherokee** mine near Greenville, California. A cyanide plant, completed at the property a year ago is handling ore at the rate of around 100 tons daily. Alfred L. Merritt, 200 Bush Street, San Francisco, is owner of the Cherokee. W. Spencer Hutchinson, Jr., is superintendent; Albert Johnson is mine foreman; and Charles D. Stark, Jr., is assayer; all of Greenville.

**Erle P. Halliburton, Inc.**, 1709 West Eighth Street, Los Angeles, California, is conducting development work at its **Morning Star** mine north of Cima, California. Installation of a 300-horsepower Diesel electric power unit has just been completed, and drifting both north and south is in progress off the 360 level of the mine. Metallurgical tests have indicated the ore to be normal for cyanidation, but it is not intended to erect a mill until warranted by results of the underground work. The property is under lease and bond from John B. Mighton, Cima, and Howard T. Brown, owners. H. V. Hughes, Cima, is manager for the Halliburton Company.

The **Placeritas Mining Company**, W. D. Ingram, mining operator, Box 225, Forest-hill, California, has placed in operation a new three-yard dredge on the Middle Fork of the American River, where it is understood that there is enough ground under lease to furnish work for 10 years. The new dredge will supply employment for about 20 men.

Dorothea Reddy Moroney has taken over several chrome deposits in California, including the Reeves brothers' chrome mine at Orleans, the R. Nenni deposit on the South Fork of Indian Creek, 10 miles from Happy Camp, and the Cook property on the East Fork of Indian Creek. Active operation has started at several deposits, and a crew of men is employed in checking additional deposits. Dorothea Moroney has established an office at Hamburg, Siskiyou County, where she has another large deposit mined by her father during the first World War. She holds a government contract for 25,000 tons of chromite, totaling \$846,000 from mines on which she has options in Alaska, including the six Lass and Whitney claims and approximately 10 other claims in the Seldovia district.

The **Stagan Mining Company**, Roy Stacy, manager, Jenny Lind, California, has moved its dredge to the C. W. Willits property four miles west of Jenny Lind. The company recently completed work on the Robie Estate in the same locality. It is estimated that there are several years' work available at the new site, which is on the bed of the Calaveras River.

The **Best and Belcher Gold and Silver Mining Company**, H. L. Slosson, Jr., presi-

dent, 333 Kearny Street, San Francisco, California, is planning to acquire an option on additional ground in the Mother Lode district, Calaveras County, California, where it has already opened an area of mining ground. Prospects at the latter location are said to be promising. The company has announced its intention to conduct preliminary development with the diamond drill, thus saving the cost of expensive pumping until the character of the ground is determined. The Best and Belcher company still holds its original claim on the Comstock Lode in Nevada which it acquired in 1864.

Commercial ore has been reported uncovered on the 165-foot level at the **St. John** mine located about a mile north of Grass Valley, California. The mine, at one time one of the larger producers in the area, was reopened last spring by Ed C. Jacobs of Nevada City, co-owner of Parks Bar Dredging Company. Unwatering of the lower levels has been completed, and a crew of 15 men has been employed in active mining operations. Erection of a 60-foot headframe with electric hoist has been completed and machine shops, office, and general living quarters have been constructed.

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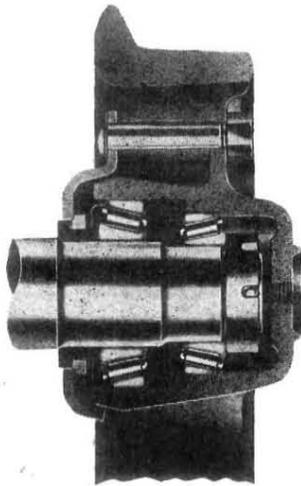
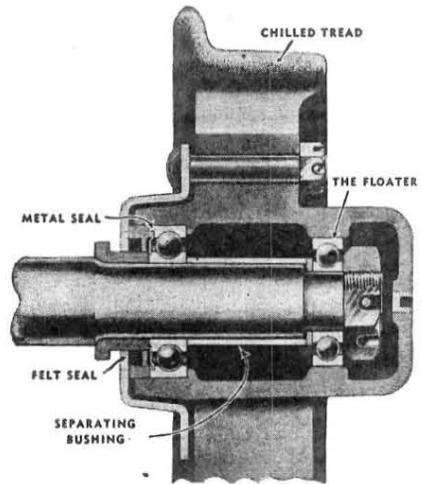


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The Alto Development Company, B. J. McManus, president and manager, El Dorado, California, has completed retimbering of the 300-foot shaft at the Davidson gold mine two miles northwest of El Dorado, and production is scheduled for the near future. It is planned to mine ore from the 70-foot, 200-foot, 250-foot, and 300-foot levels, where substantial reserves of milling ore are said to be exposed. The property has been idle for many years and was acquired a few months ago by the present company, in addition to an adjoining 147 acres. Considerable ore is said to remain in the old workings, as only the richer quartz was mined by early operators.

The Bandy-Haynes Company, Ben Ogilvie, superintendent, Weaverville, California, has nearly completed construction of a dragline dredge at the Bigelow placers on Brown's Creek. The gravel is said to carry considerable gold washed down from quartz ledges in the surrounding hills.

A preliminary examination has been made of the Confidence-Mendocino mine in Inyo County, California, by Huff Kring, 996 Olive Street, San Bernardino, California; L. J. Bonnett, 656 Thirteenth Street, San Bernardino; and George Selfridge of Salt Lake City, Utah, an engineer for Howe Sound Company. The property consists of eight claims 19 miles west of Shoshone, California, and 15 miles east of lower Death Valley. It has been shut down since 1934 when several small shipments of high-grade ore were made to the Salt Lake smelters. Around 740,000 tons of ore were blocked out in development work on one of the veins, and it is estimated that this ore will average \$13 a ton. Selected ore shipped is stated to have run as high as \$125 a ton. The Confidence vein is 41 feet wide and has been traced for five miles, and another vein averaging 67 feet in width parallels the Confidence about one-quarter mile to the west. Surface assays have shown practically the same values in both veins. Water was found in a limestone formation in a 40-foot shaft 1½ miles north of the mine, and it is thought that water can be developed for a 100-ton mill by sinking this another 50 feet. Two tunnels have been driven on the Confidence vein, one 175 feet in length on the 100 level and the other 375 feet at the 200-foot level. There has been considerable stoping below and above both levels, and several raises have been driven. The production history of this mine is said to be \$200,000, most of this amount having been recovered in the early history of the mine. If sufficient capital can be secured, Kring and Bonnett plan to build a mill and bring the property into production again.

The Innis Dredging Company, A. B. Innis, superintendent, Nevada City, California, has transferred its dredge from the Deer Creek channel below Nevada City, where it had been in operation for two years, to the Malakoff hydraulic property near North Bloomfield. Work was scheduled to start by November 1. The dredge has a capacity of 60,000 yards of gravel a month, and approximately 20 men will be employed.

J. Hampton Lashbaugh, Nevada City, California, is conducting shaft work at the

Yellowjacket mine near Forest, California, which he has under lease. Dennis Coughlan, Nevada City, is owner of the mine.

Carson Hill Gold Mining Corporation, John A. Burgess, general manager, Melones, California, has announced that a contract is being worked out by mine officials for its miners and will go into effect the latter part of October. One hundred and seventy-five employees at the property recently returned to work following a two-day strike and have accepted a 25-cent daily wage increase pending completion of the contract. The strikers had asked for a 50-cent wage increase.

An extensive development program has been launched by the Ancho-Erie Mining Company at its property near Graniteville, Nevada County, California. The No. 4 tunnel now in 1,000 feet will be driven another 1,400 feet to the main Ancho-Erie ore bodies. While a crew of 10 men is working at this tunnel, other crews will carry on work in two other main tunnels of the property. A rail tram from No. 4 to the ridge road will be built immediately. A loader and eight new ore cars have been moved to the property, and with completion of the present project a ball mill will be installed. C. A. Helbach, 370 Alta Street, Grass Valley, is president of the company, and Fred Anderson, Grass Valley, is superintendent.

Western Gold, Inc., is getting equipment ready to reopen its Relief Hill hydraulic mine near North Bloomfield in Nevada County, California, after a three-month shutdown for the dry season. Two seven-inch monitors soon will be in action, and a crew of 20 men employed. A Caterpillar Diesel D4 tractor with La Plant-Choate Trailbuilder is used at the property to clean off the overburden. This material is then washed into the sluice box with other material coming from the hydraulic operation. C. E. Clark, North Bloomfield, is superintendent at the mine, and A. P. Lansburg, is foreman. Main offices of Western Gold, Inc., W. H. Taylor, president, are located at 943 Russ Building, San Francisco.



The Associated Metal Mines, Inc., J. G. McKenzie, 324 Cooper Building, Denver, Colorado, president, is reported to have resumed operations at its John Jay mine on James Creek in Boulder County three miles southwest of Jamestown. A 40-ton flotation mill is on the ground. Concentrates are shipped to the Leadville smelter and high-grade is sent direct to the Golden Cycle plant at Colorado Springs.

William Kitto of Boulder, Colorado, and associates have been pulling a commercial grade of stope fills from the 310-foot level of the Emancipation mine eight miles west of Boulder. The material is said to average 0.65 ounce gold. The Emancipation dump is being worked by Mort Hiatt and Brown. The property is owned by the Emancipation

**Eugene H. Burris**, president of Treasure Ledge Mines Company, Inc., Downieville, California, died recently. His company operated the King Solomon mine.

**Arthur Lee**, master mechanic who had followed steel construction and building of headframes for mines throughout the Mother Lode district and in Nevada, died at his home in Angels Camp, California, October 16, 1941, at the age of 71 years.

**Livingston Wernecke**, prominent mining engineer and geologist of San Francisco, California, was killed in an airplane crash at Millbank Sound, British Columbia. He was vice-president and general manager of Treadwell Yukon Corporation, Ltd., and consulting geologist for Alaska-Juneau.

**Norman J. Ericson**, mine shift boss for the Balatoc Mining Company in the Philippine Islands, died at Baguio, Mountain Province, recently. He had spent a number of years in the Islands and had been with the Mayon Mining Corporation there as general superintendent prior to becoming associated with the Balatoc company. He also had engaged in consulting work with headquarters in Manila. Prior to going to the Philippines, Ericson was connected with the Consolidated Coppermines Corporation, Kimberly, Nevada.

#### A. S. AND R. ANNOUNCES CHANGES IN MANY WESTERN DEPARTMENTS

**JOHN DOUGLAS MacKENZIE**, who has been manager of the southwestern department of American Smelting and Refining Company, El Paso, Texas, has been promoted to general manager of the California department and vice-president of the Federated Metals Division of A. S. and R. He will make headquarters at the company's offices, 405 Montgomery Street, San Francisco.

**J. D. MacKenzie** graduated from the University of North Dakota in 1918, receiving the bachelor of science degree in mining engineering. Two years later he obtained his master's degree in metallurgy from the University of Utah.

After leaving school, he was employed for a short time by Cerro de Pasco Copper Corporation, and later the same year did metallurgical testing in the United States Bureau of Mines, Salt Lake City.

MacKenzie has been associated with A. S. and R. since 1920 when he joined the staff at Garfield, Utah. He was employed in the plant there until 1926, holding the various positions of chemist, department head, and assistant general superintendent.

In 1927 he was transferred to Shorey, Peru, as consulting metallurgist for the Northern Peru Mining and Smelting Company, a subsidiary of A. S. and R. Later the same year he returned to the United States to accept the post of assistant to the manager of the company's Utah de-

partment, with headquarters in Salt Lake City. The following year he became manager of the East Helena plant at East Helena, Montana, and occupied that position until 1939 when he was transferred to El Paso.

Replacing him in the southwestern department of the company is **Robert D. Bradford**, who goes to El Paso from East Helena. For the past two years Bradford has been smelter manager of the company's East Helena plant and prior to that was assistant manager at El Paso.



**R. D. Bradford**

Like MacKenzie, Bradford's first job with the American Smelting and Refining Company was at its Garfield plant in Utah. He is a native of Salt Lake City and was graduated from the University of Utah with a master's degree in metallurgy. Besides his western experience with the company, he served for some time as assistant to the vice-president at the New York office.

Bradford's position as manager at East Helena will be filled by **E. M. Tittmann**, who has been assistant manager of the Utah department with headquarters in Salt Lake City. He, in turn, will be succeeded by **Kuno Doerr, Jr.**, who has been assistant superintendent at Garfield, Utah, and has served in various capacities at that plant for over 10 years. Doerr's place will be filled by **R. A. Perry**, who has been superintendent of the company's Murray smelter. The superintendency at Murray goes to **Frank J. Downey**, who at one time was assistant superintendent at Murray and later was transferred to the company's Garfield operations.

#### PROMINENT MINING EXECUTIVE IN CHARGE FOR MADRE DE ORO

**WILLIAM J. LORING** is managing engineer of mining operations for Madre de Oro Gold Mines, Inc., Eldorado, California, and is a director of the company. He has an unusual background of wide and varied mining experience, both in the United States and abroad.



**William J. Loring**

Loring began his mining career as a tool boy in mines, but advanced through various positions in all departments of mining until he became assistant general manager in charge of mills for the Utica Mining Company, Angels Camp, California. In 1901 he resigned his position with Utica to become manager of the Melones Gold Mining Company at Melones, California, and during his association with that company superintended an extensive construction program.

In 1902 he joined the staff of Bewick Moreing and Company of London, general managers and financiers of mining all over the world. His first appointment was that of superintendent of the Sons of Gwalia Gold Mines, Ltd., in western Australia. Within nine months, seven additional mines controlled by Bewick Moreing and Company were brought under his supervision, and in a short time he was made general manager in charge of 16 gold mines operated by that company. Two years later Loring became general manager of 41 mines, representing all of those controlled by Bewick Moreing in Australia.

In 1908 Loring bought ex-President Herbert Hoover's interest in the firm of Bewick Moreing and Company and established headquarters in London. For 12 years he held the position of chief mining engineer for the firm and directed all of its mining operations throughout the world.

Returning to the United States in 1914, Loring has since been engaged in private engineering practice. He retired from Bewick Moreing in 1920. It was mainly through his efforts that the mine of Carson Hill Gold Mining Corporation was equipped, financed, and put on production. He also was instrumental in equipping and putting into operation the Plymouth Consolidated property at Plymouth, California. The Nevada Massachusetts tungsten property at Mill City, Nevada, was taken over by him and the Pacific Tungsten Company organized to handle the financing of the present mill. He has been connected with the financing and operation of a number of other properties in Arizona, Nevada, and California.

Loring is the inventor of the Loring concentrating belt and has made frequent contributions to technical journals. He served as president of the American Mining Congress for two years and is a member of the American Institute of Mining and Metallurgical Engineers.



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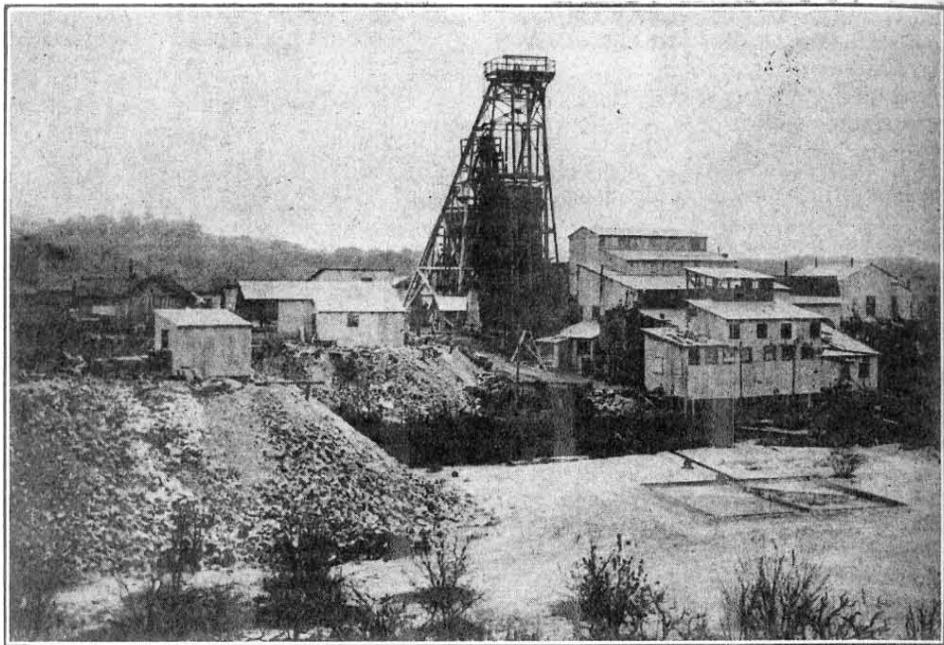
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A new steel headframe and steel ore bin have been completed at the Alabama California Gold Mines, near Penryn, California. The enlarged milling plant is handling from 250 to 300 tons of ore daily.

**MILL ENLARGEMENT HAS BEEN COMPLETED AT ALABAMA MINE**

SEVERAL additions, including washer, classifier, thickener, and miscellaneous units, have been made to the milling plant of Alabama California Gold Mines Company, Penryn, California, and the plant is now handling between 250 and 300 tons of ore daily.

The three-compartment shaft has been sunk to a depth of 1,500 feet, and a station is being cut on that level. Miners are taking ore from the 650, 800, 1,000, and 1,200-foot levels, and are working on a two-shift basis. The mill is operated on three shifts.

The company employs around 140 men under the direction of J. J. McCord, general mine foreman, and Thomas Blazer, mill foreman. James Moore, Box 488, Auburn, is general superintendent.

Alabama California Gold Mines recently paid its first dividend of 1 cent a share, totaling \$20,000.

**MINDANAO MOTHER LODE SHOWS SPECTACULAR RISE IN OUTPUT**

MINDANAO MOTHER LODE MINES, INC., has risen to the position of second largest gold producer in the Philippine Islands, being exceeded only in output by the Balatoc Mining Company, a Haussermann interest, which has led in production of the yellow metal in the Islands for several years.

In average per ton recovery Mindanao Mother Lode is credited with being the richest mine in the Islands. The average recovery for August reached an all-time high up to that date of over P118 per ton, the highest known record of any mine in the Philippines. July production averaged P101 a ton, while total production for the first eight months of the year amounted to P4,008,625 or an increase of about 200 per cent over the same period of 1940.

The spectacular increase in gold output may be attributed in a large measure to development early in the year of an extremely high-grade ore body on the 540 and 700-foot levels of the mine. The property is located at Surigao, Surigao, on the Island of Mindanao, and around 900 men are employed in its operation. The milling plant has a daily capacity of 225 tons.

The company is headed by P. A. Meyer, Heacock Building, Manila. The operating staff at Surigao includes D. C. McKay, general manager; L. E. Smith, mine superintendent; A. H. Crenshaw, assistant mine superintendent; P. R. Holdsworth, mill superintendent; and E. W. Heidepriem, chief mechanical engineer.

**LEAD PLACED UNDER PRIORITY CONTROL BY NEW OPM ORDER**

TO CONSERVE the supply and direct the distribution of lead, general preference order M-38 has been issued by the Office of Production Management directing each refiner and dealer to file each month with the director of priorities a schedule of proposed shipments for the ensuing month. Furthermore, each refiner must set aside so much of his lead production each month as is determined by the director.

Under the terms of the order, the director of priorities may, in his discretion direct the placing of purchase orders for lead with particular refiners and dealers. It incorporates all provisions of priorities regulation No. 1 which requires acceptance of defense orders and forbids unnecessary accumulation of inventory.

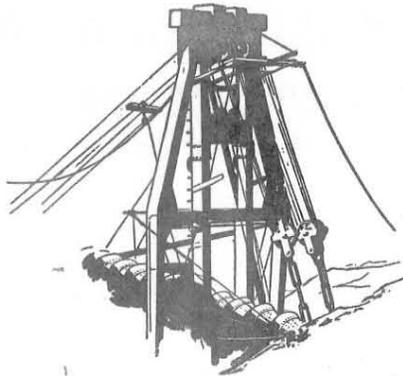
Deliveries of lead alloys and lead products also are affected by the order and may be made subject to priorities regulation No. 1. Further information and the complete text of the order can be obtained from Erwin Vogelsgang, chief, Lead Branch, Division of Priorities, Office of Production Management, Washington, D. C.

**CALIFORNIA AZTEC HOLDINGS  
TO HAVE NEW MILLING PLANT**

A MILL construction program is planned by the California Aztec Mining Company for its holdings near Placerville, California. It is proposed to install first a 150-ton unit of a projected 300-ton plant, which with the present 60-ton plant would provide over 200 tons' daily capacity. Future plans include complete removal of the 60-ton unit and the installation of an additional 150-ton unit. The coarse crushing unit will have a capacity of 300 tons.

California Aztec has been operating its mill during a testing period at the Kelsey mine, and during this time has handled an average of 40 tons daily. The plant is equipped with crushers, ball mill, classifier, jigs, and flotation machines. At the present time it is shut down for repairs and some alterations, but will be started up again in about three weeks.

Since taking over the property April 15, 1940, the company has expended around \$100,000 and has blocked out a large tonnage of commercial ore. Development consists of two shafts, one at the portal of the tunnel, and one about 900 feet in from the mouth of the main tunnel. Both of these developments are stated to have shown a very good grade of ore and a strong vein system. A station was cut in the winze shaft at 106 sub-elevation, and drifting has been done on the hanging vein systems. The ore exposed at the bottom of the winze, which is about 675 feet from the surface, shows primary sulphides and



is said to run better than \$14 a ton across a 7-foot vein. This vein, over 500 feet in length, shows on four additional levels above.

In addition to the Kelsey, California Aztec has under option the River Hill and Guilford, sometimes known as the Poverty Point properties. The group constitutes a continuous holding, with the exception of an area across the South Fork of the American River 200 feet in width and over three miles in length. The River Hill mine has been developed to a depth of 1,600 feet and has shown a very good grade of ore.

Until the month of October, the company has employed around 28 men. Tasker L. Oddie is president and Malcolm H. Carpenter is vice-president and general manager. Both are addressed at Balfour Building, San Francisco, California.

**MANGANESE RESOURCES TESTED  
ON OLYMPIC PENINSULA**

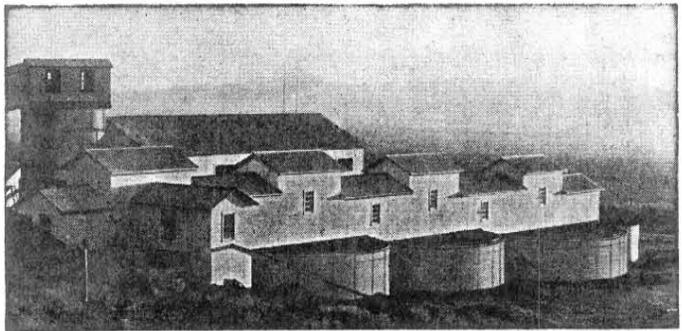
THE manganese resources of the Olympic Peninsula, Washington, have been examined by geologists of the U. S. Geological Survey as part of its investigation of domestic deposits of strategic minerals. The Olympic Peninsula is an extremely rugged and heavily timbered area of about 5,000 square miles in the northwestern part of the state of Washington. The tightly folded argillites, graywackes, schists, and quartzites in the center of the peninsula are bordered on the north, east, and south by steeply dipping lava flows and tuff beds. Associated with these volcanic rocks are beds of reddish or chocolate-colored impure limestone and limy argillite, generally less than 50 feet thick, although in places they reach a maximum thickness of about 300 feet. These red beds, which are much squeezed and faulted, contain irregular lenses and pockets of manganese silicates and a few bodies of the manganese oxide hausmannite.

The manganese silicate deposits are low-grade and are accompanied by jasper, which makes them hard to concentrate. Individual bodies generally contain less than 100 tons of rock that averages more than 20 per cent of manganese, but a few bodies contain up to 15,000 tons. Hausmannite is the only commercial source of manganese yet developed on the peninsula, and so far it has been produced only from the Crescent mine, which, during the years 1924-26, yielded 16,275 tons of ore, with



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an average manganese content of more than 51 per cent. Another similar small body of hausmannite is now being mined at the Crescent by the Sunshine Mining Company.

The chief hope of future production seems to be in the discovery and development of other bodies of high-grade hausmannite rather than in attempts to mine the low-grade and erratically distributed manganese silicates, but it is doubtful whether the Olympic Peninsula can yield 150,000 tons of rock containing more than 20 per cent of manganese.

Analyses of 32 samples of red limestones and red argillites gave a maximum of 8.52 per cent of MnO, and it is possible that large tonnages containing about 5 per cent of MnO can be found.

### BUREAU OF MINES EXPLORING WESTERN IRON DEPOSITS

THE United States Bureau of Mines is conducting exploration work in the western states to determine whether the supply of iron ore is sufficient to warrant erection of a steel plant in the Los Angeles, California, area. Congress has appropriated \$380,000 for exploration of iron and coal deposits in the Southwest.

An iron deposit on the Apache Indian reservation north of Globe, Arizona, is under investigation. This deposit, examined 10 years ago by the United States Geological Survey, was estimated to contain 10,000,000 long tons of minable ore. According to E. D. Gardner, supervising engineer for the bureau, Box 4097, University Station, Tucson, Arizona, diamond drilling may follow the preliminary work, depending on results of the initial tests. W. R. Storms, formerly associated with Elizalde and Company, Inc., in the Philippines, has been placed in charge of the project. If iron ore is produced at this location, royalties will be paid to the Apaches.

Iron deposits near Indio, California, and in southwestern Utah will be explored.

### PLYMOUTH MILLING COMPANY OPERATING AT CAPACITY

THE Plymouth Milling Company has started its new 100-ton selective flotation mill and is operating it at capacity. Mining is being conducted on a two-shift basis. The company, of which C. B. Van Deman, 321 East Bijou Street, Colorado Springs, Colorado, is president, operates the New York, Silver King, and Waterloo mines and the new mill near Montezuma, Colorado.

Clayton Kissell, 921 North Hancock Street, Colorado Springs, is engineer in charge and the operating staff at Montezuma includes: Wayne W. Bailey, mine superintendent; Floyd Campbell, mill superintendent; and O. C. Baker, assistant mill superintendent.

The Plymouth company is owned and controlled by the Western Mines, Inc., of 321 East Bijou Street, Colorado Springs, which also operates properties in the Cripple Creek district under the direction and management of Van Deman. Jack Schwab and D. L. Green of Cripple Creek are in charge of these latter operations.

### PHILIPPINE COMPANY WILL DEVELOP CLAIMS IN ARIZONA

MARSMAN and Company, Inc., major Philippine Island gold producer, has entered the Arizona mining field with the acquisition of 30 claims in the Cherry Creek district of Yavapai County, and operations are scheduled to start immediately.

This district is about 30 miles east of Prescott and embraces that section of the Black Hills range drained by Cherry Creek. The area has an abundance of water, and the climate is favorable for year-around mining. During the last five years from 25 to 30 small mines have produced shipping ore, most of which has been marketed at the Phelps Dodge smelter at Clarkdale. Efforts are being made at the present time to secure a custom milling plant for the district.

The Marsman Company, organized in 1929 in Baguio, Philippine Islands, is a mine management and operating company. Under its management are six important gold producers in the Islands, the companies reporting a total production of \$757,907 for the month of September. Its dividend distribution to date amounts to over \$11,000,000. Marsman mining enterprises also extend to China and the Dutch East Indies. J. H. Marsman, Box 297 Manila, heads the company. Offices are maintained in the United States at 250 Russ Building, San Francisco.

The foregoing announcement was made by the Arizona Development Company, a recently incorporated firm backed by both Arizona and California capital. In addition to carrying on direct mining activities the company has been organized to assist in financing, developing, exploiting, and managing mine operations. It is under the direction of Harry H. Culver, president 326 Heard Building, Phoenix, Arizona.

### METALS RESERVE TO CONTRACT FOR CHROME AND MANGANESE

JESSE JONES, federal loan administrator, has announced that Metals Reserve Company, in order to stimulate domestic production, will consider contracts with producers for low-grade manganese and chrome ores with a minimum content, respectively, of 40 per cent manganese and 40 per cent chrome.

Heretofore, Metals Reserve Company has contracted for 1,900,000 tons of high-grade domestic manganese ore at a price on delivery to stockpiles which averages approximately 65 cents a unit. Also, Metals Reserve Company, in addition to contracting with producers, has already undertaken the production of 60,000 tons of domestic chrome concentrates yearly and expects to increase this to 120,000 tons.

Deliveries under manganese contracts now in effect are increasing and it is expected that present production of ferrograde manganese ore will increase during the same period that the new production of lower grade ore will be brought in. Domestic chrome ores or concentrates produced to date have been required by industry and none, as yet, have been available for stockpiling.

**MINES WITHOUT SERIAL NUMBERS USE P. R. NO. 22**

**O**PERATORS of gold lode mines and placers, or mines considered too small to be given priority serial numbers under Preference Rating Order No. P-56, can continue to use the method provided by P-22 to buy supplies and equipment, according to a statement made by a spokesman of the Priorities Division in Washington to The Mining Journal's Washington Bureau. This ruling gives operators an A-10 rating and clarifies the priority situation as it relates to mines. Producing gold lode mines will receive serial numbers as soon as they can be certified and issued.

Under P-56, the order issued to encourage mine production of all sorts, serial numbers are not being issued to small mines unless and until those mines employ at least 10 men and produce a "fairly good tonnage," a spokesman for OPM's section of Mine Priorities said in an interview with The Mining Journal's Washington representative.

"We have men who can tell what a fairly good tonnage is for any of these little mines," he added. "Of course, a mine employing only 10 men can't expect to produce much."

P-56 grants a rating of A-1-a for emergency breakdown repair, and A-8 for ordinary repair and maintenance. "But small mines can obtain repair and maintenance equipment under P-22, which permits them to obtain an A-10 rating," the spokesman said.

P-22 is an order issued September 9 granting priority assistance for repair and maintenance work in a number of essential industries, including mining. As far as mining is concerned, this order supposedly was superseded entirely by P-56, issued later. This is stated to be the first public announcement that mine operators still can use P-22, which would give them an A-10 rating, slightly behind the usual mine rating of A-8.

For special orders, or orders desperately needed by a small operator who is producing a worth-while quantity, PD-1, the original priorities form, can be used, the OPM spokesman said. By sending this order direct to Washington, indicating proof of need for certain equipment, a satisfactory priority rating can be obtained, he added.

"We have so many priorities requests from the 16,000 mines of the country that we have to give known producers the advantage," it was said. "When the small fellows get big enough to show they're going somewhere, then we consider that they have a mine. There are many alleged mines in the West which are little more than holes in the ground."

If hoisting cables are not actually broken, the only condition for an A-1-a rating for repairs, the OPM spokesman continued, is positive certification by a state safety inspector of mines that he will have to close the mine down because of danger unless the cable is repaired or a new cable obtained. Almost every state has such inspectors, he added.

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## Loading The Lifters

by  
Fisher Vane

**Y**OU never can tell, in times like these, just where repercussions from poor judgment on the part of some governmental theorist are going to start repercussing—nor just what form said repercussing (and plain hardrock cussing) is likely to take. Nor do we who write for the public prints know, when we touch off a round of shots, just where the echoes might roll to.

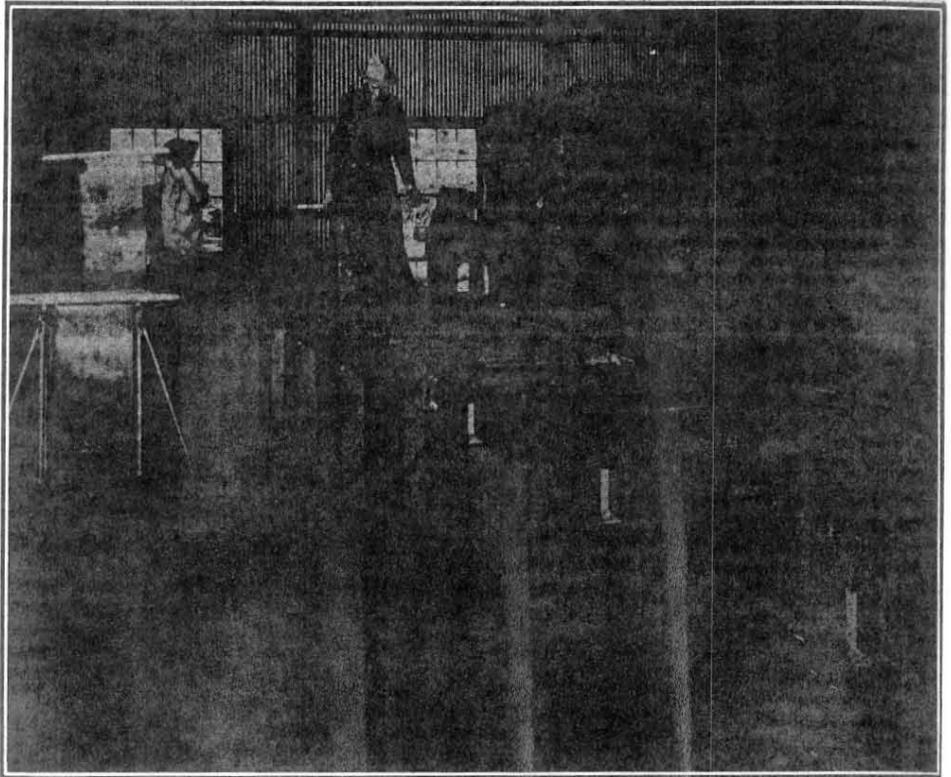
\* \* \* For instance, who ever would have thought that the strategic metals situation up and down our Pacific Coast, which exploded with a bang in August and September as U. S. Senator Rufus C. Holman and his subcommittee on strategic and critical metals held public hearings in San Francisco and the northwest, would fetch up in a secession movement with the avowed aim of carving a forty-ninth state off southwestern Oregon and northern California—with half a dozen metalliferous counties to start off with?

\* \* \* Irate denizens of Curry County, Oregon, started the movement several months ago by asking Governor Culbert Olson of California to let Curry quit the Webfoot State and join the Golden State. Olson was coy, however; also non-committal. That made the hotheads of his state's Siskiyou and Del Norte counties hotter headed. The thing that made them hot-headed was alleged total lack of cooperation from authorities of their respective states in the development of their natural resources—with the accent on strategic metals.

\* \* \* The irate group that met November 19 at the call of the Chamber of Commerce of Yreka, Siskiyou's county seat, declared it was possible that Modoc, California's northeasterly county, and Josephine and Jackson, Oregon's two border counties lying between Curry and Klamath, might sit in and make the secession movement a "six-some." Big Siskiyou alone covers 6,256 square miles of rugged landscape—is three times the size of Delaware, bigger than Connecticut, has 28,500 population. The thing got so warm that the Siskiyou News touched off a public contest to pick a name for the new state. The protagonists say the Federal government has been as lax as their state governments in even building roads to open up the mineral regions.

\* \* \* Tut-tut, boys! Even granting that you have a whale of a kick coming at certain phases of the strategic metals situation and its handling, and even recent articles in this column haven't been such as to have a nerve-quieting effect, 'tis no time for us mine-minded men to forget the cardinal principles of . . . PATRIOTISM!

\* \* Here's something to take your minds off secession a moment: Treasurer Morgenthau (the lad who had that 6-per-cent-profit-on-invested-capital-ceiling idea) announced that October 1941 tax collections were \$590,868,893—up \$235,593,267 over October 1940, or an increase of above a quarter of a billion!



The electrolytic tank house and cells at the United States Bureau of Mines Pilot Plant for manganese ores. This unit was placed in operation November 10, and is demonstrating the commercial feasibility of the electrolytic process for the treatment of low-grade manganese ores.

—Photo by Metallurgical Division, U. S. Bureau of Mines.

Bureau of Mines. Subsequently a commercial plant, which was operated on the basis of this original process, encountered various operating difficulties in certain stages of the process from the raw ore to high purity metal.

Certain improvements in process equipment and operating technique incorporated in the new pilot plant will obviate many of these original difficulties and a new era in electrolytic manganese production has been introduced. Among the improvements in the present operation are an improved and efficient furnace for reduction roasting of manganese ore; mechanically agitated and spray leachers for ore dissolution; acid proof thickeners; filters of various types including plate and frame presses, continuous belt Lurgis, and precoat continuous drum filters. Also, improved purification technique has resulted in greater uniformity of cell room operation. Higher manganese and lower ammonium sulphate concentrations in the electrolyte, higher current density, and improved current efficiencies are all improvements which will ultimately reflect in lower cost for the final product; proving that electrolytic manganese as one of the cheaper non-ferrous metals has moved into the stage of commercial reality.

The establishment of a constant and adequate supply of electrolytic manganese metal at a reasonable cost will be the forerunner of a new industry in alloy metals wherein the purity of the electrolytic metal imparts properties heretofore unattainable. Also, future application may be made in the steel industry where it is absolutely essential to the extent of ap-

proximately 14 pounds of manganese per ton of steel.

The manganese metal produced in this initial pilot plant operation was made from ore obtained from the Three Kids mine located in Las Vegas Wash in the Boulder Dam area. This ore, and additional deposits in the adjacent Virgin River area which bureau engineers have estimated to be present in millions of tons, represents an important potential source of manganese metal. The Three Kids ore contains 20 to 35 per cent manganese and is readily amenable to electrolytic treatment for recovery of its contained manganese. The bureau has some 10,000 tons of various manganese ore types on its stockpile, and some of each type, as well as other ores to be secured later, will be subjected to pilot-plant processing for high purity manganese production.

Other units of the manganese pilot plants, some of which started operations previously, include a concentrator unit, a pyrometallurgical unit, and a hydrometallurgical unit. The electrolytic plant was dependent on the pyrometallurgical and hydrometallurgical units for its supply of electrolyte, and consequently its initial operation was necessarily subsequent to that of the several other units. The Bureau of Mines pilot plants have been built and are being operated by the metallurgical division of the United States Bureau of Mines of which R. S. Dean, 1600 East First South, Salt Lake City, Utah, is chief engineer. R. G. Knickerbocker is supervising engineer; Frank W. Woodman is engineer in charge of the electrolytic manganese pilot plant unit at Boulder City, Nevada.

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## DRY BANK PLANTS

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The Davenport Mining and Reduction Company, Ogden C. Chase, president, Boggs Building, Las Vegas, Nevada, has closed down operations at its Oro Plata mine near Kingman, Arizona. The company has been engaged in remodeling the 100-ton Oro Plata mill to handle a daily tonnage of 125 tons and new flotation units have been added to permit production of a separate zinc concentrate. The plant will handle custom ore in addition to that from the Idaho and Middle Golconda mines. Cyrus F. Weeks, Kingman, is general superintendent.

The Black Canyon Mining Association has purchased a 20-year lease for \$5,000 cash and a 10 per cent straight royalty on the Thunderbolt mine four miles south of Cleator, Arizona, and plans to start operations about January 1, 1942. A water system is being installed and a mill building, which will house a 50-ton capacity mill, is under construction. The plant will include a crusher, Hardinge mill, and six 22 by 24 Denver Equipment flotation cells. Power will be furnished by a 100-horsepower Diesel engine. Five cars of silver-lead-zinc ore have been shipped this year, averaging \$14 in silver alone. Shipments from 1911 until 1935 are reported to have yielded \$24,000. Harold Ketchum, 2725 Atlantic Avenue, Long Beach, California, is general manager of the present operating company, and J. H. Christensen, Cleator, Arizona, is resident manager. Thomas Priestly and John Williams were the former lessees of the mine, which is owned by the Black Canyon Mining Company of Kansas City, Missouri.

Commercial ore has been opened up on the 200-foot level below the main working tunnel at the Postmaster mine around 10 miles northwest of Mayer, Arizona. Drifting is in progress on this vein and shipments have been resumed to the Clarkdale smelter. Values are in gold, silver, copper, and lead. D. W. Ingram, 121 South Fourth Avenue, Tucson, and L. M. White, Box 2350, Tucson, are owners and operators. A crew of 10 men is employed under the direction of Gilbert Mock, superintendent, Mayer.

The Shylock Mining Company is opening and dewatering the old 1,000-foot shaft at the Shylock mine northwest of Cherry, Arizona, and is now down to a depth of 400 feet. A crew of 15 to 16 men is employed in putting up an ore bin and in cleaning and sampling on old levels. Main offices of the company are in Prescott, Arizona. E. J. Sawyer of Macon, Georgia, is president; Louis H. F. Rohe, of Mirando City, Texas, is vice-president; and Samuel Rohe, Box 1362, Prescott, is secretary and general manager in local charge.

Three men are employed at the Black Hawk mine in the Cherry Creek mining district of Arizona where drifting and crosscutting are in progress. A 220-foot drift has been run north of the 100-foot main shaft, as well as a 100-foot drift south of the shaft. Three carloads of ore, averaging \$25, have been shipped to Clarkdale, Arizona, from development work. Further sinking, drifting, and crosscutting are planned by the operator, J. C. Lovett, Box

487, Prescott, Arizona, who is leasing from R. H. Tucker, owner, Box 54, Cherry, Arizona.

One carload a month of gold ore has been going out from the Sugar Bowl mine near Cherry, Arizona, for the past six months. H. G. Allen and George S. Purtyman of Cherry are leasing from Oliver Loper, Camp Verde, owner.

The Sitting Bull mine, Cherry, Arizona, has been taken over under lease and bond by S. A. Wardle, who is making preparations for development and mining. Compressor, drills, etc., have been installed and work will be conducted on two tunnel levels. Six men are employed. Values are in gold.

The Leghorn mine, also known as the Leghorn Falls mine, Cherry, Arizona, is being equipped with hoist and compressor preparatory to developing and shipping. Roy Cornett recently purchased the property from H. T. Reid, 911 1/2 South New Hampshire Avenue, Los Angeles, California.

Two men are engaged in driving a 100-foot crosscut to undercut an oreshoot showing in old workings at the Federal mine, Cherry, Arizona. Work has now reached a distance of 75 feet. These operations are being carried on by Roy R. Belknap, Cherry, who is leasing a part of the Federal group of 17 claims. Values are in gold. R. H. Tucker, Cherry, is owner of the property.

The Iron King Mining Company, H. F. Mills, general manager, Humboldt, Arizona, is handling 210 tons of ore daily in its mill and sending out 60 tons of shipping ore daily to the Clarkdale smelter. About 50 per cent of the milling ore is being taken from the 600-foot level and the balance from the fourth and fifth levels. The shipping material comes from a vein in the footwall opened up on the fourth, fifth, and sixth levels. The new working shaft is down to the 500-foot level, and is timbered to a station cut at 200 feet. It is planned to extend the shaft to the 800-foot level. A winze is now being sunk from the 600 to the 800-foot level. The company plans to diamond drill at the south end of the vein and to do deep drilling at the north end. A crew of 80 men is employed at the Iron King. The ore contains values in gold, silver, lead, and zinc. G. Jarpe is mill superintendent, and Clyde Betes, mine superintendent.



The Mariposa Commercial and Mining Company, Charles W. Slack, president, Alaska Commercial Building, San Francisco, California, plans operation of three new dredges at its mining properties. The three plants will be installed on Mariposa Creek, Agua Fria Creek, and on Bear Creek. Included in the company's holdings are the Ortega lode mine near Mariposa, and the Fremont Grant, comprising 44,000 acres.

The Alto Development Company, B. J. McManus, president and manager, El Dorado, California, plans construction of modern milling equipment at its Davidson gold mine two miles northwest of El Dorado. The property, which had been idle for many years, was reopened by the Alto company early this year. The 300-foot shaft has been retimbered, and mining will be started on mill-grade ore left in the old workings by former operators, who took out only the richer quartz.

A mill will be erected within three months at a tungsten deposit near Exeter, Tulare County, California, by Johnson and Racey Mining Syndicate of Los Angeles. The firm is making an expenditure of around \$100,000 in developing the property.

The Division of Water Resources, Sacramento, California has issued permits to divert water for mining purposes to the following: The Campo Seco Mining Company, Inc., Campo Seco, California, for two cubic feet per second from Mokelumne River at an estimated cost of \$3,500, and Grover Wilson, Nevada City, for three cubic feet per second from a tributary to Scotchman Creek. Joseph B. Cox, Loyalton, California, has filed an application for one cubic foot per second from Louse Creek.

The Minnie Reeves placer property near Happy Camp, California, will be operated by T. F. Nichols, 423 Main Street, Roseville, California, and associates. A bucket-line dredge on which the operators have an option in Oregon will be moved to the ground. The Reeves property comprises 273 acres, around 20 acres of which were operated in 1939 by the Lincoln Gold Dredging Company, headed by E. M. (Bing) Clark and Walter K. Jansen, Lincoln, California. According to tests by Nichols, around 8,000,000 cubic yards of commercial gravel are still available at the location.

Thomas F. Gerety, 120 South Newton Street, Medford, Oregon, and associates are testing on the Cuthbert ground near Masonic Bar in California. Gerety has been testing in the Happy Camp district of California for over a year.

Oro Fino Consolidated Mines, J. C. KempvanEe, general manager, 381 Bush Street, San Francisco, California, will sink the main 800-foot shaft an additional 450 feet, representing an expenditure of approximately \$25,000. For the past several years all mining has been above the 800-foot level. During the sinking program, the mill will handle only ore from development. The plant has been treating 100 tons daily, working on two shifts. George Beck, Box 432, Auburn, is mine superintendent.

The Calaveras Gold Dredging Company, L. A. Morrison, manager, San Andreas, California, has acquired from E. R. Gastonguay the Culbertson gravel mine at Newcastle in Placer County, California. His floating dragline has been moved in and will be converted into a stationary plant. The ground was taken over this summer by Gastonguay under a 10-year lease from James D. Culbertson, owner, of Santa Paula, California.

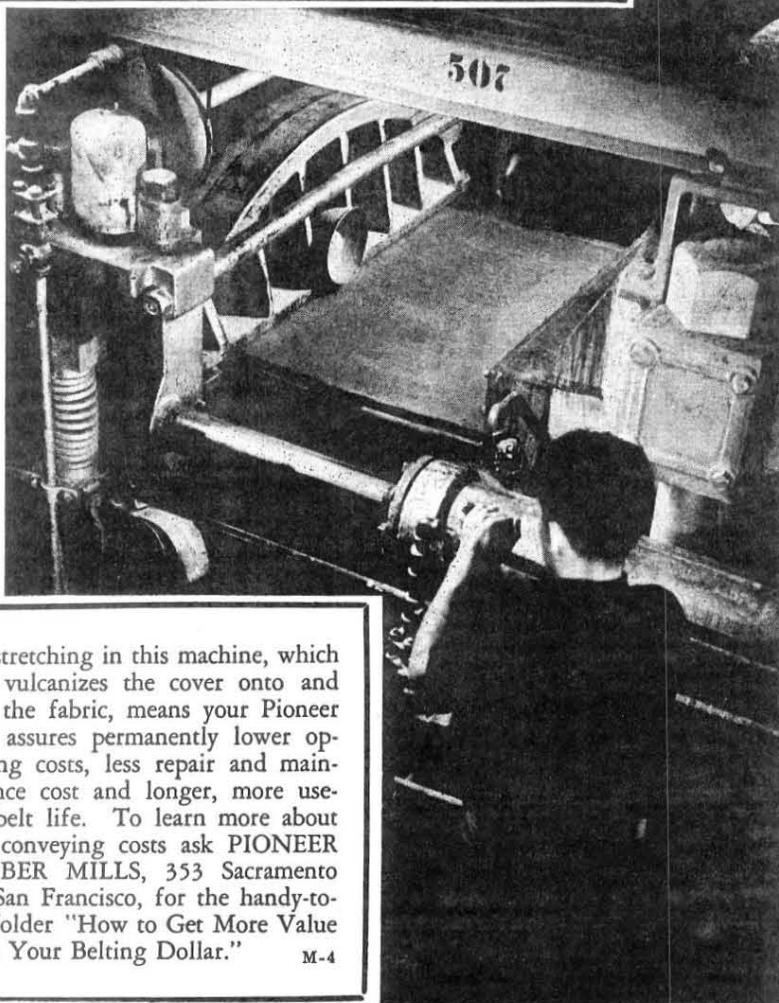
The Manzanita quicksilver mine, Wilbur Springs, California, is being operated by Bert C. Austin and Company, Inc., 417 Balfour Building, San Francisco, California. A ½-yard shovel will be used to mine ore by the open-pit method. After putting the material through a trommel screened to 10-mesh, a Bach retort will be used to recover the quicksilver. W. N. Hubbard is president of Bert C. Austin and Company, Inc.

Preliminary work at the Dorr tungsten mine in the New York Mountains 60 miles northwest of Needles, California, will be completed within the next few weeks and will be followed by extensive development. A water supply has been developed, and milling equipment formerly used at a mine

south of Needles has been brought in. An estimated 500 feet of shaft work have been completed to date, and approximately 300,000 tons of ore blocked out. Plans include installation of an additional flotation unit and two concentrating tables and deepening of the shafts. Warren T. Potter, 760 South Marengo Avenue, Pasadena, California, with his brother, the late Clarence S. Potter, also of Pasadena, purchased the four claims early in September.

A new 200-ton concentrating plant will be constructed by Southwestern Engineering Company, 4800 Santa Fe Avenue, Los Angeles, California, at the Grey Eagle chrome mine in Glenn County, California, for the Rustless Mining Corporation, Robert H. Sayre, vice-president, in charge of

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production, 504 Farmers and Mechanics Building, Sacramento, California. Excavating at the mill site was started October 16, and the plant is scheduled for completion before February 1, 1942. Ore will be mined in open-pit operations and will be transported two miles by aerial tramway to the mill approximately one mile from Chrome, California. Water will be supplied from wells drilled near the mill site. C. E. Tuttle is president of Rustless Mining Corporation, subsidiary of the Rustless Iron and Steel Corporation of Baltimore, Maryland. Clyde E. Osborn, general superintendent, Star Route, Orland, California, is in charge of operations at the Grey Eagle mine and at the Pilliken mill, operated by Rustless, in El Dorado County. Rustless Mining Corporation has chrome properties in production or under development throughout California, Oregon, and Washington. Herbert F. Byram also is a vice-president in charge of production and maintains offices at Grants Pass, Oregon, devoted primarily to purchase of ore and development of Oregon properties.

Plans are under way to extend the 600-foot shaft an additional depth of 100 feet at the property of Amosky Banner Consolidated Mines near Oroville, California. A 50-ton ball mill and assay plant have been constructed at the mine, where a crew of 15 men is employed. James O. Jensen, Crocker Building, San Francisco, is president and general manager, and J. D. Upton, Box 90, Oroville, is mine superintendent.

The B. H. K. Company of Weaverville, California, is working on Clear Creek near Old Shasta in Shasta County, following completion of operations on Little Brown's Creek near Douglas City in Trinity County. Equipment includes a P&H dragline and 1½-yard Esco bucket. E. E. Warren, Shasta, California, is superintendent. Ed Bishop, Orlando, California, and Louie Krantz, Willows, are owners.

Low-grade magnesite will be mined at the base of Red Mountain near the upper end of Del Puerto Canyon and shipments will start soon. The project has been started below the tunnels of the Red Mountain mine operated by Westvaco Chlorine Products Corporation.

The property of Ganim Gold Mines Company near Redding, California, is now being worked for talc. A large high-grade deposit is under development, and a few carloads are being shipped each week. George Gorham, 1627 Irving Street, San Francisco, California, is vice-president, and James Harris, 1433 California Street, Redding, is secretary of the company.

According to reports, Newmont Mining Corporation will reopen the property of the Gray Eagle Copper Company, Charles F. Ayer, president, 14 Wall Street, New York. The mine consists of 32 claims eight miles from Happy Camp, California, which were developed prior to the last World War, but never put into production because of inadequate transportation facilities at the time and a lack of a market for the copper

after the war. It is developed by eight tunnels of which Number 7, the longest, is 3,000 feet long. Underground workings total about 10,000 feet. Newmont owns 49,208 of the Gray Eagle company's 50,000 shares outstanding, and controls Empire Star Mines Company, Ltd., which operates in California under the direction of J. R. C. Mann, manager, Grass Valley, and R. J. Hendricks, manager, Nevada City.

H. V. Underwood, Hollister, California, and A. S. Pearce of San Juan Bautista, California, owners of the Antelope copper mine 35 miles southeast of Hollister, are improving the three miles of road from the county highway to the mine. Tests are being made of the ore, and it is planned to clear and unwater the caved drifts in order that a general examination can be made with a view to leasing the property. The mine is developed by several hundred feet of tunnels in and around the ore body. The copper ore is capped by a limonite deposit, carrying gold and a little silver.

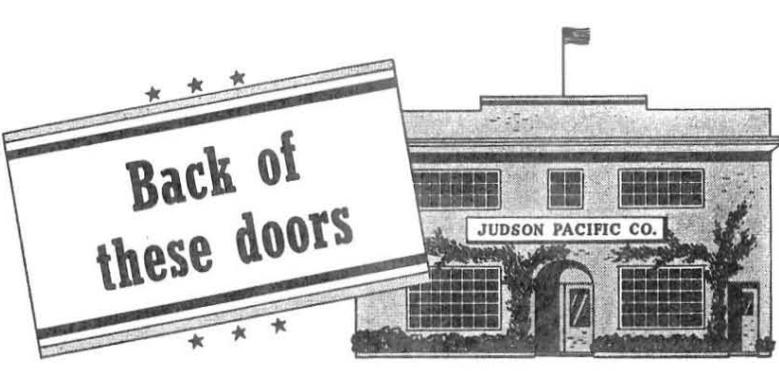
George W. Tweeddale, 617 North Adams, Glendale, California, and associates, have leased their Big Four and Western properties in the Goldstone mining district, San Bernardino County, California, to the Goldstone Milling Company, Ray Hackney, president. A 200-ton pilot mill under construction at Barstow, California, is expected to be completed and in operation in the near future. It will handle ore from these large, low-grade properties, where the principal value is in gold.

The Combined Metals Reduction Company, E. H. Snyder, vice-president and general manager, Stockton, Utah, is operating the property of A. G. Miller, Keeler, California. Production of lead and zinc ore has started, and shipments are expected to be made soon at the rate of two carloads a week. Camp buildings are being erected, and it is thought that the present crew of five men will be increased in the near future. A road has been built to the mine, which is located four miles south of Panamint Springs. Mining and construction are under the direction of Guy H. Herbert, Jr., consulting engineer, Keeler, California. Combined Metals Reduction Company operates properties at Bauer and Lark, Utah, and at Pioche, Nevada.

The Midnight mine and mill on Deer Creek near Nevada City, California, has been taken over by Nevada state mining interests, who plan large-scale operations. Electric power has been installed; the old inclined 180-foot shaft has been unwatered; and drifting is in progress on the bottom level. A crew of nine men is employed under the direction of Lawrence C. Smith, Nevada City. The Midnight, first located in 1853, is said to have been a good producer in former days.

Frank Dewey, Healdsburg, California, has produced 36 flasks of quicksilver this year from his property. He expects to increase production with the use of a bulldozer, which he has added to his mining equipment. The cinnabar is scattered, occurring in pockets and nuggets.

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old Culver-Baer quicksilver mine near Cloverdale, California. The company's furnace and equipment have been purchased by the Culver-Baer Mining Company. Future operations will be under the direction of Carl Baumeister, Cloverdale. C. E. Humbert of Cloverdale is one of the principal owners of the Culver-Baer.

A crew of 14 men has been employed for the past several weeks in preparing for a hydraulic operation near Downieville, California. This will be known as the Pioneer Project Mine and includes the old Grass Flat mine together with the Riffle, Challenge, and Comet claims, and what is not worked of the Pioneer. A 40-foot head of water has been developed for the two hydraulic monitors with 16 and 11-inch nozzles which will be used when mining get under way. The tails will be dumped into Slate Creek and from there taken to Bullards Bar Dam. A. J. Modglin, La Porte, California, is superintendent of the project and one of the owners of the property. William Pike, La Porte, is also an owner.

The Lincoln Gold Dredging Company, comprised of Walter K. Jansen, Lincoln, California, E. M. (Bing) Clark, and associates, has leased the old Niagara mine and adjoining property near French Gulch, California. A 100-ton amalgamation-flotation plant, construction of which began September 20, is scheduled for completion around December 1. For several months the plant will handle semi-oxidized porphyry and slate-quartz ores contained in old dumps on the properties, while preparations get



under way for underground and surface mining. Metallurgical tests have indicated a high percentage of the gold can be amalgamated and recovered in this manner, while a certain portion of the values exist in pyrite and galena, along with free gold, which will require flotation. The flowsheet will include a 9-inch by 16-inch Universal jaw crusher, Dorr 54-inch by 18-foot classifier, 5-foot by 5-foot Miners Foundry ball mill, Fagergren flotation cells, 2-foot by 4-foot barrel amalgamator, cleaner table, concentrate filter, and Southwestern jig. The entire mill flowsheet will be served by gravity flow throughout. A mine ore bin will have a capacity of 130 tons, and a similarly constructed mill ore bin a capacity of 90 tons. Ore will be conveyed to the mill from the various workings by dump trucks. An electric power line running directly over the property will furnish power for the operations. A crew of 11 men is employed in the construction work. Paul A. Bundy, Nevada City, California, mining engineer, is in charge of the design and construction of the new mill.

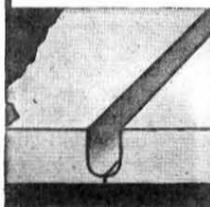
A 50-ton mill will be erected at the property of the Oregon Hill Mining Com-

pany, Inc., Placerville, California. The flowsheet will include a grizzly, crusher, jig, classifier, flotation cells, and a Wilfley concentrating table. A crew of 18 men is engaged in development work in the 360-foot shaft and a tunnel near the shaft, and in preparing a site for construction of the proposed mill. The shaft has been retimbered to the 320-foot level, where a station has been cut. Drifting and cross-cutting are continuing, and future plans include further development and exploration work on the 320-foot level. Reginald Owen, screen star, is president of the Oregon Hill company, and L. F. S. Holland, Box 191, Placerville, is secretary and manager.

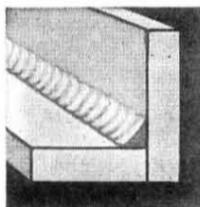
A bulldozer is stripping overburden at the Gold Wreath mine in Quartz Valley near Yreka, California, and open-pit mining is planned, using power shovels. Milling equipment is being installed by Philip Sutter, who recently acquired the property from John Lewis. Roads have been built to the location, and sites cleared for building construction. C. G. Rogers, Route 1, Fort Jones, California, is superintendent of the Gold Wreath.

International Metals Development Company, Mark Ewald, president, 2227 Water Street, Olympia, Washington, is continuing exploration and development at its Abbott quicksilver mine near Wilbur Springs, California. A recently uncovered vein of ore is under development at a lower level. C. V. Richardson is superintendent.

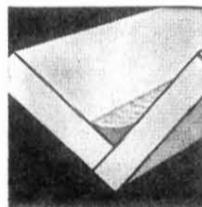
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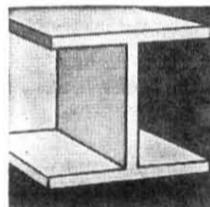
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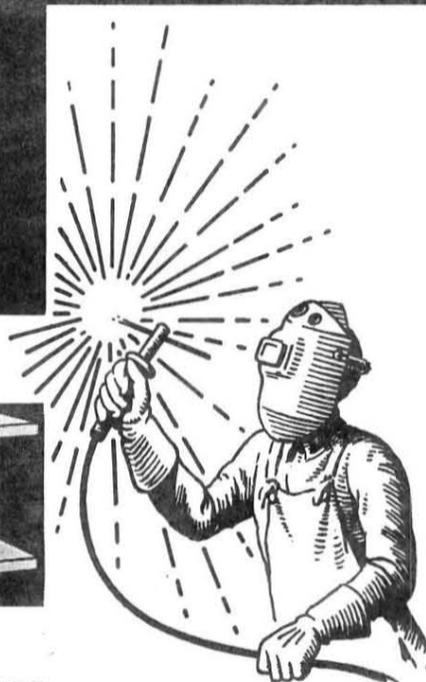
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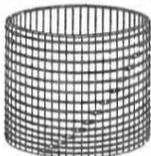
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EL PASO

TEXAS

Production of manganese is scheduled to start soon at the Big Boy mine near Zenia, California. A contract has been let calling for work on 100 eight-hour shifts in 60 days. Altar Point in Humboldt County will be the shipping point. A. B. Crossman, Zenia, owns the Big Boy, and A. V. Crossman, brother of A. B., will superintend operations at the mine.

Vernon Bettin of Los Angeles, California, who is leasing a mining claim owned by the Summit Lime Company south of Tehachapi, California, has reported discovery of scheelite at the location. R. D. Carse, 211 K Street, Mojave, California, has been prospecting the ground using a Mineralight, and high-grade ore has been reported.

COLORADO

According to reports, the International Smelting and Refining Company is dismantling its milling plant at Rico, Colorado, and will ship some of the equipment to its Copper Canyon mine at Battle Mountain, Nevada. A 300-ton mill is under construction at the Copper Canyon property. J. O. Elton, 818 Kearns Building, Salt Lake City, Utah, is general manager of International's activities. The plant at Rico is a 250-ton selective flotation mill, built in 1926 and operated until mid-1927 when the company suspended Rico operations.

Arrangements are being made for increased milling facilities by the Gold Mines Consolidated, Inc., K. M. Ohlander, 317 Colorado Building, Denver, Colorado, president and general manager. At present the company is operating its 40-ton flotation mill at capacity and is opening additional ore on the 400-foot level of its Donna Juanita mine at Idaho Springs. By January the company expects to be in a position to increase regular daily production. Adam Kirshmer of Idaho Springs is mill superintendent and W. E. Scott, Jr., of Central City, is consulting and chief mine engineer. Harley Tow, Idaho Springs, is master mechanic. A crew of 26 men is employed.

Robert O'Donnel of Denver, Colorado, is reported to have taken a lease and bond on the Red Spruce mine in Boulder County near Jamestown. W. Baker, Jamestown, is in charge of operations.

Day and night shifts are being operated by the Banner Mining Company which is working the Clear Creek placers 1½ miles east of Idaho Springs, Colorado. H. I. Grimes, 1910 First National Bank Building, Oklahoma City, Oklahoma, is president. A crew of 18 men is employed, with Leonard Smith of Idaho Springs as mine superintendent and purchasing agent and A. A. Lynch, Idaho Springs, assistant mine superintendent. Operations will be carried on throughout the winter months.

A small cyanide plant is being put up by H. M. Gregory of Boulder, Colorado, near the collar of the main shaft of the Melvina gold mine which Gregory holds under lease. Jess Collins and Ray Mestas

are shipping steadily from their lease on the 470-foot level of the property.

Dump ore is being trucked from the Rubie mine on Bull Hill at Cripple Creek, Colorado, to the Cameron Gold mill in the same district. The material is being handled by gasoline shovel. The property is owned by R. A. Dooley, Box 724, Lordsburg, New Mexico.

A 30-horsepower power plant is being installed at the Gold King mine in Sweet Home district near Idaho Springs, Colorado, which is being operated by Glen C. Shaw, Box 673, Idaho Springs. Preparations have been made in both camp and mine to carry on operations through the winter. Tom Dempster, Box 572, Idaho Springs, is mine foreman.

IDAHO

Diesel equipment rated at 80-horsepower is being installed by the Crown Consolidated Mines, Inc., at its property in the Sawtooth district of Blaine County, Idaho, near Ketchum. Both mine and dump ore are being treated in the company's 50-ton mill. Ben C. Rich, 716 Eighth Avenue, Salt Lake City, Utah, is president and George B. Guillotte, 66 South Thirteenth East, Salt Lake City, is general manager.

The Magic Valley Metals, Inc., has been organized to carry on cinnabar mining and retorting in the Snake River area. J. L. Personius of Twin Falls, Idaho, is associated with H. J. Steiner and Mark Bennett, both of Oakland, California, in the new company. James E. Cox is engineer in charge.

A gold placer operation in Shoshone County eight miles east of Clarkia, Idaho, is being carried on by James A. Monroe and George Vadney, both of Tensed. About six to eight feet of overburden is removed to gain four or five feet of gold-bearing gravel. Commercial emeralds and garnets are also being recovered.

Production of quicksilver will soon be under way at the Hellen Zucker mines east of Weiser, Idaho. The mine was recently purchased from Rex Ellis, John Arthner and others by Hellen M. Zucker, Box 865, Weiser, and associates. Charles W. Fike of Spokane is superintendent at Weiser and Z. T. Parker is chief chemist. Retorts are being installed.

One mile of road construction, the last link between the highway and the Two Apex property, is under way. The Two Apex ground is in the Bay Horse district near Clayton, Idaho, and is being developed by A. G. Gutheil, Dooly Building, Salt Lake City, president of the company, and C. C. Langley, also of Salt Lake, a stockholder. Tunnel work was carried on last summer and lead-silver ore of commercial grade is reported to have been opened. Some shipments will be started as soon as the road is completed.

Regular production of 50 tons of zinc lead ore daily has been started by the

RICHARD HAMILTON\* reports on the

## Tungsten Discovery in the Laguna Mountains

SIXTY miles east of San Diego, California, 15 miles south of Julian, and a scant 200 feet from the main Julian-Laguna highway, lies the Laguna tungsten mine, a producer of but one year. Its development is the result of an exceptional example of planned prospecting.

The history of San Diego mining is one almost entirely of gold, with such great producers of the past as the Cuyamaca and Banner mines leaving their marks in the mineral production records of the county. The old Cuyamaca, a granite fissure, poured untold riches into the pockets of its early operators, but a fault zone at last consigned the property to oblivion.

The ore bodies of the Laguna tungsten mine are found along contacts of the granite rocks and the remnants of the sedimentary rocks that these granites invaded. These contacts are said to resemble in some ways the roof pendants of other tungsten belts.

The discoverer and operator of the Laguna mine is Eugene Rice of Winchester, California, a young San Diego County rancher, who long ago foresaw a tungsten shortage and who believed that tungsten existed in the Laguna Mountains. When increased demand gave suitable inducement, he penetrated deep into the Lagunas, armed with his fluorescent lamp, field equipment, and an unshakeable belief. His first discovery was a non-commercial scheelite deposit that lies on the westerly side of a great aplite dike striking north. He has since located three other deposits, stretching 25 miles from the Mexican border on the south to Mason Valley in the desert to the north.

In his early work on these deposits, Rice discovered that two of his prospects were in the Laguna Recreational Area where, of course, all mining activity is prohibited. The story of his battle with the park service, forest service, and other agencies, is an epic, but today his mill grinds ore for the steel furnaces of the nation. It was through the efforts of Senator Sheridan Downey that Rice was granted a complete and unrestricted waiver.

One of Rice's discoveries, the Quartz ore body, is located in a dense growth of giant buckthorn and manzanita and adjacent to a great aplite dike. The outcrop is 100 feet long and 20 feet wide, and the average assay was reported to be 1.5 per cent WO<sub>3</sub>. Sampling of the deposit was said to be unusually difficult due to the fact that the scheelite crystallization is very large and special precautions must be taken to see that salting does not occur.

AT THE present time, mining operations are conducted on the Laguna ore body. This deposit, located among the pines and alongside the highway, was chosen primar-

A new producer of tungsten has resulted from the planned and persistent prospecting of a young rancher in San Diego County, California. This prospect, the Laguna mine, is milling from 35 to 40 tons of ore daily, the ore averaging 1.25 per cent tungsten trioxide.

ily because of its accessibility and the inexhaustible supply of timber near by. A shaft was sunk in ore to a depth of 100 feet where sufficient water for milling operations was developed. All ore was stockpiled as mined, and the average value of that removed during shaft sinking was 1.25 per cent WO<sub>3</sub>. Drifts were run at the 60-foot level and the 100-foot level, blocking out ore believed to be sufficient for mill requirements.

The flowsheet of the Laguna mill is virtually a standard one. Ore is hoisted from the shaft and dumped into a 50-ton bin from which it is fed to an 8 by 11-inch Wheeling crusher which reduces the ore to minus ¾-inch. This product is fed by gravity to a 4 by 5-foot Herman ball mill with an internal screen classifier of minus 16 mesh. The ore then goes to a battery of three Wilfley-type tables where a 58

per cent WO<sub>3</sub> product is made. Middlings from the tables are pumped back to the ball mill for regrinding.

The concentrates, following the day's clean-up, are re-run over one of the tables, grading the product up to 62 per cent WO<sub>3</sub>. Tailings from this operation are returned to the primary circuit. From 35 to 40 tons of ore are milled daily and the final concentrates are marketed to the Molybdenum Corporation of America.

### MANHATTAN GOLD CLEARS WAY FOR STEADY WINTER WORK

THE Manhattan Gold Mines Company of Manhattan, Nevada, reports that development work will be continued practically all winter, following settlement of legal difficulties between the company and Thomas J. Lynch of San Francisco, former president and director. Walter J. Fancher of Manhattan, mine superintendent and formerly lessee of the company, has been appointed director to replace Lynch.

In July of this year a court order required Lynch to return to the mining company all shares of stock owned by him after November 22, 1938, and he was restrained from transacting or otherwise disposing of any shares of the capital stock of the company to any but the plaintiff concern. That order was set aside recently and all disagreements are said to have been settled.

Mining operations had been slowed down pending the outcome of the suit, but the company is ready now to undertake steady operations. The property consists of a group of gold lode claims at Manhattan. E. L. Dearborn of Fairfield, California, is president.

### COLORADO MINING ASSOCIATION ANNOUNCES 45th MEETING

THE Colorado Mining Association has announced plans for its forty-fifth annual meeting which will be held in the Shirley Savoy Hotel, Denver, on Friday and Saturday, January 23 and 24, 1942. The program will include discussions of the many new problems confronting the mining industry. New features to be inaugurated this year include a contest between safety teams from the various mining communities and mining companies and a contest for first honors in the musical talent among the representatives of the mining camps. Winners will appear at the Silver Banquet.

There will be rock-drilling, first aid, mucking, and other competitions held in the Denver Municipal Auditorium at the mining show. Just prior to the mining show there will be a parade depicting the development of mining and the need of metals for defense purposes. The mining communities will build and enter large floats. The theme chosen for the dinner will be "Keep 'Em Mining."



The Rice tungsten mill in the Laguna Mountains.

\*Los Angeles, California.

"Due to this unforeseen but quite pleasant bottleneck in smelting capacity," Scholey stated, "it has been impossible to treat average-grade ore during the past eight months, that is, material assaying around 6.25 per cent copper, and it has been necessary to treat the lower grade material averaging 4.5 per cent and 5 per cent copper. This treating of the lower grade material has a tendency to increase further the grade of the ore reserves and Lepanto is now confronted with a problem of over-production in the mill and under-capacity in the smelter.

"In order to take care of this situation, additional equipment is being ordered to double the present smelter capacity, bringing it up to a point whereby between 120 and 150 tons of raw concentrates can be treated daily. With this increase in capacity in the smelter, it will then be possible to treat the average grade of ore through the mill and likewise mine some of the richer areas which average over 15 per cent copper. It will be possible to send this high-grade ore direct to the smelter without going through the process of milling. This increase in smelting capacity would bring the monthly production of Lepanto to between P450,000 and P500,000."

It is understood that, with completion of the smelter construction, Nielson will be able to reopen the property of Hixbar Gold Mining Company. The company was forced to suspend operations on August 1 because of the high freight rates pre-

vailing and the shortage of shipping space for the copper ore. Lepanto made a shipment of 2,500 tons of matte with an approximate value of P900,000 to the Tacoma smelter during October.

#### BULLETIN ON NEW MINING LAWS IS ISSUED IN CALIFORNIA

BULLETIN No. 120, "Manner of Locating and Holding Mineral Claims in California," (with forms) has been released by the Division of Mines, Department of Natural Resources, Walter W. Bradley, state mineralogist.

The publication deals with a new act passed in 1941 amending the law covering recording of location notices. Shortly after the publication in 1931 of "American Mining Law" by A. H. Ricketts, a brief outline, covering the salient features needed by the average prospector and claim owner in initiating and maintaining his rights to mineral ground, was issued as Bulletin No. 106. The demand for this publication exhausted five editions which were revised from time to time as new statutes were enacted in 1935 and 1939. The latest bulletin has been given the number 120 to indicate that it supersedes all editions of the earlier Bulletin No. 106.

The writing may be obtained for 25 cents postpaid, plus 1 cent sales tax for California residents, from the Los Angeles office in the State Building; San Francisco office, Ferry Building; or in Sacramento where offices are in the State Office Building.

#### DOUBLING MAGMA'S AIR CONDITIONING PLANT

(Continued from page 5)

IT IS of interest to note that 840 tons of refrigeration are made available in this manner, with only 600 g.p.m. of available condenser water (400 mine water plus 200 recooled), or approximately  $\frac{1}{4}$  g.p.m. per ton of refrigeration. This is an extremely low rate of condenser water. Generally from two to three gallons per minute of condenser water are used for normal refrigeration installations. It is of further interest to note that the efficiency of the three-stage Carrier centrifugal machine was impaired only slightly, each new machine having a 200-horsepower motor to produce 140 tons of capacity under the foregoing conditions.

The two machines on the 3,600-foot level provide cooling water for the cooling coils installed on the 3,800 and 3,600-foot levels. The two machines on the 4,000-foot level are temporarily used to cool two separate sections of this level. At a later date they will be used to cool the 3,800 and 4,000-foot levels. The units installed on the 4,400-foot level are used to cool the 4,200 and 4,400-foot levels.

Because of the desirability of commencing stoping operations in both the east and west sections of the mine on the 4,000 and 4,400-foot levels, the machines on these levels were not installed in pairs as on the

# Sulphuric Acid

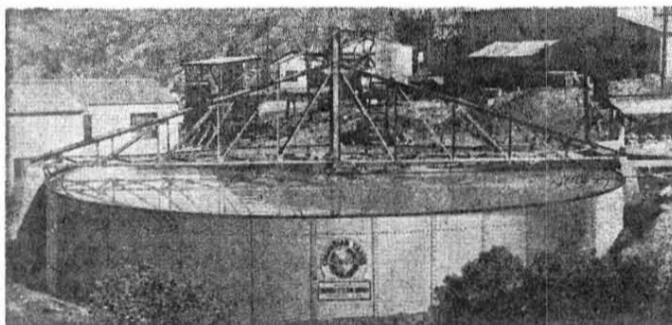
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and hoist preparatory to developing and shipping within two weeks. Henry T. Muheim and Company, Bisbee, Arizona, owns the property.

**American Smelting and Refining Company** is treating 210 tons of ore daily in its Trench mill near Patagonia, Arizona. One hundred and thirty tons are supplied from the Flux mine and 80 tons from the Trench mine. T. A. Snedden, Box F. Patagonia, is superintendent of the Trench Unit of A. S. and R., and W. H. Loerpabel, Box 2229, Tucson, is division manager for the company's southwestern mining department.

**Neighbors Spencer, Ltd.**, Globe, Arizona, has leased the Wonder asbestos claims and work is scheduled to start in December. The property is owned by Louis A. Kuehne, Box 366, Globe.

The **Davenport Mining and Reduction Company**, Ogden C. Chase, president, Boggs Building, Las Vegas, Nevada, has completed remodeling its 100-ton mill at the Oro Plata mine near Kingman, Arizona, and the plant is in operation, turning out three grades of concentrates, silver-lead, gold, and zinc. The mill and flotation unit recently were revamped to make a separate concentrate of the zinc, in order to realize a profit on this metal. The Davenport company controls three mines in this district, the Oro Plata, Idaho, and Middle Golconda. There is said to be sufficient ore stockpiled and developed in these mines to keep the mill running at capacity for some time, and in the meantime a comprehensive program of exploration and development is being carried out to develop additional ore. It is anticipated that sufficient ore may be developed to warrant increasing capacity of the mill to 200 tons. Harry H. Hughes, Jr., is in full charge of the Davenport operation.

**Victoria Quicksilver Mines** plans to begin production by January 1, 1942, at its claims in the Winifred mining district 13 miles northeast of Phoenix, Arizona. Development was started October 5 at the property which consists of five unpatented claims, the Crown Prince, Victoria, Duchess, Royal, and Duke. According to Nellie De Vere, owner, 622 East Tyler Street, Tempe, Arizona, high-grade copper ore and cinnabar ore have been uncovered.

Two carloads of ore have been shipped from the Republic mine in the Russellville-

Johnson area near Dragoon, Arizona. Values are chiefly in copper. A crew of 12 men is employed under the direction of Angeleo Pavente, resident superintendent. E. J. Ewing, Box 607, Tucson, Arizona, and associates, have the property under option.

Carlos Aguilar, Box 516, Jerome, Arizona, has been shipping ore from the Dundee mine to the Clarkdale smelter at the rate of two cars a week for the past several months. The mine, which several years ago was operated by the Dundee-Arizona Copper Company, is near Jerome and was leased over a year ago by Aguilar.

About one car of ore a month is being shipped from the Union Jessie mine in the Humboldt district of Arizona. The property, consisting of 17 unpatented and five patented claims, is leased by Dandea and Burleson from the General Security Corporation, 405 South Hill Street, Los Angeles, California, owner.

Shipments are expected to start after January 1942 from the Swansea mine north of Bouse, Arizona, where the **Swansea Development Company**, E. C. Lane, president, Bouse, Arizona, is operating under a 49-year lease. Present work is being conducted through the Number 1 shaft. This has been opened to the 135-foot level where 7 to 8 per cent copper ore is exposed and drifting and stoping have been started. Dr. E. Payne Palmer, Professional Building, Phoenix, Arizona, is interested with Lane in the project.



**Amosky Banner Consolidated Mines** is treating 30 tons of gold ore daily in the 50-ton mill at its property near Oroville, California, in addition to carrying on continuous development work. Underground work includes raising from the 600-foot level to the surface and sinking a winze from the 600-foot to the 700-foot level. The mine has been developed to a depth of 1,000 feet and is opened by shaft and tunnel. It is planned to connect the Banner and Amosky workings by means of a crosscut and to construct a headframe and coarse-ore bins. A crew of 20 men is employed under the direction of J. D. Upton, mine superintendent, and Gus Nicolai, mill superintendent. William Beardmore is assayer. All are addressed at Box 112, Oroville, California. James O. Jensen, 564 Market Street, San Francisco, is president and general manager; Frank L. Sizer, Hobart Building, San Francisco, is consulting engineer; and Howard A. Muckle, Oroville, is secretary.

**Carson Hill Gold Mining Corporation**, John A. Burgess, general manager, Melones, California, is maintaining steady production at the rate of 1,100 tons daily at its property near Melones, employing a crew of 160 men. Walter Lyman Brown, 206 Sansome Street, San Francisco, is president of the company. Operating officials include Frank Wagner, mine superintendent; E. C. Maroon, mill superintendent; H. T. Libbey, superintendent of the cyanide plant; Max Peterson, chief mine engineer; A. Weisbecker, master me-

#### AVERAGE PRICES OF METALS (Figures by American Metal Market)

	Copper Per Lb. Conn. Valley	Lead Per Lb. New York	Zinc Per Lb. St. Louis	Silver Per Oz. New York
1924	13.024	8.097	6.344	66.781
1925	14.042	9.020	7.622	69.065
1926	13.795	8.417	7.337	62.107
1927	12.920	6.755	6.242	56.370
1928	14.570	6.305	6.027	58.176
1929	18.107	6.833	6.512	52.993
1930	12.982	5.517	4.556	38.154
1931	8.369	4.244	3.638	28.701
1932	5.792	3.181	2.881	27.892
1933	7.276	3.870	4.031	34.728
1934	8.658	3.8595	4.162	47.973
1935	8.880	4.0648	4.331	64.273
1936	9.710	4.7091	4.903	45.088
1937	13.391	6.0085	6.517	44.805
1938	10.225	4.7388	4.613	43.222
1939	11.197	5.0531	5.117	39.082
1940	11.528	5.1788	6.339	34.773
1940				
Jan.	12.216	5.4712	5.644	34.75
Feb.	11.405	5.0761	5.543	34.75
Mar.	11.385	5.1923	5.75	34.75
Apr.	11.327	5.0712	5.75	34.75
May	11.324	5.0154	5.808	34.949
June	11.375	5.00	6.24	34.825
July	10.812	5.00	6.25	34.75
Aug.	10.954	4.8537	6.398	34.75
Sept.	11.536	4.9292	6.937	34.75
Oct.	12.00	5.3077	7.25	34.75
Nov.	12.00	5.7283	7.25	34.75
Dec.	12.00	5.50	7.25	34.75
Ave. 1940	11.528	5.1788	6.339	34.773
1941				
Jan.	12.00	5.50	7.25	34.75
Feb.	12.00	5.6023	7.25	34.75
Mar.	12.00	5.7654	7.25	34.75
Apr.	12.00	5.85	7.25	34.75
May	12.00	5.85	7.25	34.75
June	12.00	5.85	7.25	34.75
July	12.00	5.85	7.25	34.75
Aug.	12.00	5.85	7.25	34.75
Sept.	12.00	5.85	7.25	34.75
Oct.	12.00	5.85	7.25	34.75
Nov.	12.00	5.85	8.25	34.772

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chanic; and L. MonteVerda, purchasing agent. All are addressed at Melones.

The Gibsonville Mining Company has completed construction of ditches and flumes to develop additional water for its hydraulic pits seven miles from La Porte, California. Four monitors will be operated during the season. A wide cut has been opened in a 600-foot channel to give room for the monitors, and a storage reservoir has been built. Martin B. Turner, La Porte, is superintendent.

Cactus Mines Company is employing 119 men at its Cactus Queen and Blue Eagle mines near Rosamond, Kern County, California. The 125-ton mill is operating at capacity on gold and silver ore. The plant includes flotation and cyanide units. George B. Kimball is president of the company; C. W. Hobson is assistant secretary; Roy W. Moore is general manager; and Thomas H. Collins is purchasing agent; all of whom are addressed at 1206 Pacific Mutual Building, Los Angeles, California. Claude E. Sides is superintendent at the mine; Arthur W. Heuck, assistant superintendent; Ray Pass, mill superintendent; John Jordan, geologist; John W. Keate, master mechanic; George Jameson, assayer; P. W. Quinn, chief clerk; and M. L. Caniff, mine foreman; all of Rosamond.

Tumco Mines, Inc., has contracted with Thatcher Brothers of Phoenix, Arizona, to diamond drill certain portions of its mining claims in Tumco Basin near Ogilby, Imperial County, California. Drilling was started in November at the Golden Cross mine, which was a substantial producer from 1890 to 1915, and where it is hoped that a large body of low-grade gold ore remains in the vicinity of the old workings. W. M. Ballinger, Ogilby, is the local representative of Tumco Mines, Inc.

La Joya quicksilver mine at Oakville, California, has been sold by the Gould interests, Mills Building, San Francisco, California, to the Oakville Mercury Company, Oakville. The property includes 11 claims totaling 134 acres in Napa and Sonoma counties.

According to reports, mining operations soon will cease at the Spanish mine north of Washington, California, where barite is mined and trucked to Modesto. The closure is taking place because of the coming of the winter season and the shortage of available No. 1 barite ore. The mine, owned by the Bradley Mining Company, 1022 Crocker Building, San Francisco, California, has been under lease for over three years to the Industrial Minerals and Chemical Company, Sixth and Gilman Streets, Berkeley. D. K. Ribble is in charge with 14 men employed.

The mill at the Cherokee mine near Greenville, California, is handling approximately 150 tons of ore daily. Present work is centered mainly on the 350-foot level. A 7½-foot vein of commercial ore was uncovered recently in an undeveloped section of the property, and two profitable ledges are under development in the main workings. Alfred L. Merritt, 200 Bush Street, San Francisco, is owner of the Cherokee. W. Spencer Hutchinson, Jr., is superintendent; Albert Johnson is

mine foreman; and Charles D. Stark, Jr., is assayer; all of Greenville.

A crew of 22 men is employed by the Belama Corporation at its Belden mine, Pine Grove, California, where 40 tons of gold ore daily are being produced. The 25-ton flotation, amalgamation, and gravity concentration mill is operating at capacity. Future plans include deepening of the shaft. The company is leasing the Belden mine from Belden Amador Mines, Inc. Charles Reuss, 1506 Wall Street, Fort Wayne, Indiana, is president of Belama Corporation, and Paul E. Miller of the same address is secretary. Operating

officials at Pine Grove include Leon M. Banks, general manager; Fred Sprung, mine superintendent; and Leslie Mechling, mill superintendent.

Five men are employed at the Kirkpatrick mine near Goodyears Bar, California, where a 500-foot tunnel is being driven to tap the gravel channel known to exist there. Completion of the tunnel will provide an easier entrance to the mine and a means of underground drainage without pumping. Operations are expected to continue throughout the winter. Rinaldo Daneri, Downieville, is in charge of the work. The property is being operated by

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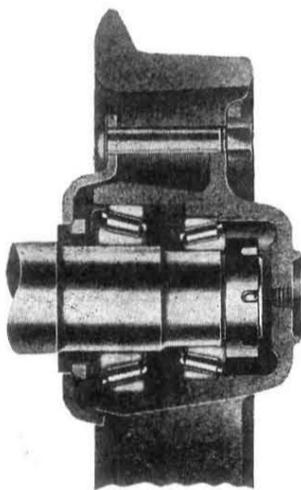
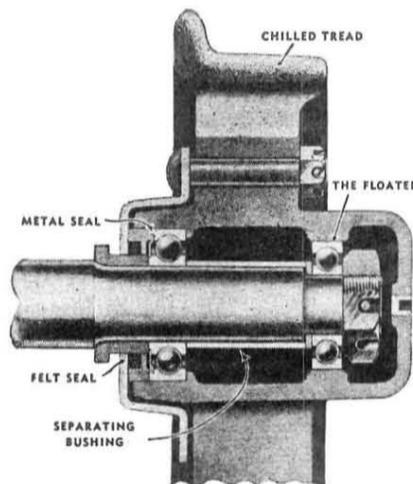
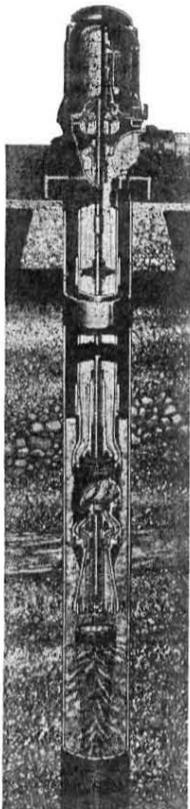


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Work is under way preparatory to operating the property of **Sisson Gold Mining Company**, John E. Sisson, president, 456 Subway Terminal Building, Los Angeles, California. The telephone line is being repaired, and the road to the mine is being improved. The property is located near Sierra City, Sierra County, California.

John R. Robbins, Box 981, Alleghany, California, and partner, have leased the **Minnie D** and **Lucky Holmes** claims in the Alleghany district. The operators plan to develop a part of the claims at the present time.

A winze is being sunk to prospect the vein at the **Brush Creek** mine near Goodyears Bar, California. The depth of the winze probably will not exceed 75 feet. Work has not advanced far enough to prove the continuance of surface values to depth. **Alpha Stores, Ltd.**, Fred F. Cassidy, president and manager, Nevada City, California, owns the **Brush Creek** mine.

The first dividend, amounting to \$300, has been reported from operations at the **Tennessee** gravel mine in the **Poker Flat** district near Downieville, California. Work is proceeding in developing and cleaning out the old tunnel which was partially caved due to a large slide which occurred last year. The mine is owned and operated by the **Pore** brothers and the **Scott** interests. **R. M. Scott**, Downieville, is one of the principals.

**United States Vanadium Corporation** is stockpiling chrome ore in central and northern California at **Clovis**, **Auburn**, **Cottonwood**, **Redding**, **Yreka**, and **Crescent City**. The company purchases chrome from a large number of small producers and agents, and recently took over a large chrome property at **Red Lodge**, Montana. Forty per cent ore is bought at 50 cents per unit  $Cr_2O_3$ . **David D. Baker** is in charge of **United States Vanadium** offices at 114 Sansome Street, San Francisco. These offices deal primarily with the purchase of chrome and manganese ores and also attend to the examination of properties for the general mining department of **Union Carbide Company**, of which **U. S. Vanadium** is a unit.

Discovery of a large body of ore containing 1 per cent tungsten and 1 per cent titanium has been reported by **Emmett T. Eckel**, geologist of **Leevining**, California. Twenty-five claims, covering 500 acres near **Saddleback Lake** in **Tioga Summit** area, have been located by **Eckel**, **Gus Hess**, and **H. E. Crane**, all of **Leevining**.

The **Etna Gold Dredging Company**, which has been working on **Wildcat Creek** near **Callahan** in **Siskiyou County**, California, has ceased operations, and 14 men have been laid off. **Oscar Barkenburg**, **Yreka**, California, is superintendent of the company, which is controlled by **W. S. Mead** and **W. A. Kettlewell**, both of 1730 Franklin Street, Oakland.

The **Little Castle Creek** chrome mine near **Dunsmuir**, California, is being operated by **James Davis**, **Yreka**, California, and **Leonard J. Buck** of **New York City**.

Several carloads of ore have been shipped, and production is estimated to reach 50 to 100 tons daily as soon as an aerial tramway and other equipment have been installed. The property, from which around 38,000 tons were shipped during the first World War, was explored and developed extensively by the **United States Bureau of Mines** a few months ago.

The **Pride of Mojave Mining Corporation**, **John J. Dewar**, president, 647 South Spring Street, Los Angeles, California, has taken over under lease and option the **Kearsarge** gold-silver mine and three adjacent properties in the vicinity of **Independence**, **Inyo County**, California. Ore will be trucked 130 miles to the **Pride of Mojave** mill at **Mojave**. An aerial tramway and loading platform will be constructed at the **Kearsarge** mine. **Gerry Eden**, who has been developing the property for the past two years, will be in charge for the new operators. Development has been by a series of crosscut tunnels and drifts, and a winze is being sunk in ore at the present time.

**Idaho Maryland Mines Corporation**, **Albert Crase**, general manager, **Grass Valley**, California, has declared the regular monthly dividend of 5 cents a share on the capital stock. The amount is payable December 22, 1941, to stock of record December 10.

**Central Eureka Mining Company**, **C. C. Prior**, president, 111 Sutter Street, San Francisco, California, has declared the regular bimonthly dividend of 8 cents a share on the capital stock, payable December 15, 1941, to stock of record November 28. Directors of the company also have authorized payment of \$60 to all employees having completed one year or more of service with the company. Those having been employed less than a year were given a proportionate amount in accordance with the term of employment.

**Fred Reim** and **Roy Jacobson** of **Goodsprings**, Nevada, are overhauling under contract the machinery and equipment at the **Anchor** shaft of the **New Trail** mine 12 miles north of **Cima**, **San Bernardino County**, California. The **New Trail Mining Company**, owner, is preparing to begin development work on the 100 and 200-foot levels. **J. F. Kent** is president; **Joseph Johnson**, vice-president; and **J. D. Loop**, secretary and treasurer of the company; all of **Cima**.

A limited amount of high-grade tungsten ore is being produced from the **Gold Wash** or **Ben Hur** claim in the **Rand** district of California, according to **Max Hess**, owner. Hess with his associates for the past four years has operated the **King Solomon** mine one mile east of **Randsburg** under the name of **King Solomon Mines Lease**.

**Holcomb Valley Mines** is constructing testing equipment, consisting of centrifugal bowls and jig, at the **Walker** placer mine near **Randsburg**, California. Both gold and tungsten values will be recovered, and if results of the tests prove satisfactory, a larger plant is to be erected. **A. Campbell** is in charge of the work.

**El Gabilan Corporation**, **Lester L. Robinson**, president, **Metropolitan Building**, Los Angeles, California, has taken over the

**Mountain King** mine near Hodson, via Copperopolis, California. The shaft has been unwatered to the 700 level, and 200 tons a day are being milled from surface pits. Frank R. Wicks, of the above address, is consulting engineer, and Byron E. Rowe is superintendent.

**Magnesite Products Company**, Financial Center Building, Oakland, California, has started shipments of magnesite from the Red Mountain mine in Stanislaus County, California. The ore is trucked 26 miles to the Patterson plant of the Westvaco Chlorine Products Corporation for processing before being shipped to the eastern steel mills where it is used as a lining for open-hearth furnaces. The Red Mountain was opened by the company several months ago and has been retimbered; new roads were constructed; and around 1,500 feet of rail were laid in the mine tunnels. The company also has opened another magnesite mine in the last six months in Tuolumne County, 10 miles west of Sonora, California, and 60 miles from Patterson. Output from both properties is under contract to Westvaco, which in turn has contracted to supply magnesite to the Permanente Corporation for its plant near Los Altos, California. Present production from both mines is 750 tons monthly and this figure is expected to be doubled within the next 60 days. J. E. Biallas and J. M. Hoff of Oakland are the principals in the Magnesite Products Company.

The RFC has authorized an additional loan of \$12,000,000 to **Todd-California Shipbuilding Corporation** for the construction of three more plants to manufacture and fabricate magnesium metals, according to an announcement by Defense Plant Corporation. The Todd-California corporation, with Henry J. Kaiser interests, Latham Square Building, Oakland, California, constructed the Permanente magnesium plant near Los Altos, California, further expansion of which is to be financed by the RFC. H. P. Davis is manager of Todd-California Shipbuilding Corporation and is addressed in care of The Permanente Metals Corporation, Box 29, San Jose, California.

**Argonaut Mining Company, Ltd.**, Jackson, California, has reported for the three months ended September 30, 1941, a net loss of \$10,213 after charges, including depreciation but before depletion. This figure compared with a net profit of \$16,737 or 8.3 cents a share on 200,000 shares of capital stock in the June quarter and with a net loss of \$14,219 in the third quarter of last year. For the nine months ended September 30 of the current year, the company has reported a net profit of \$22,180 reached after charges and federal income tax, but before depletion, equal to about 11 cents a share on the capital stock.

The **Contact Quicksilver Mining Company** is averaging an output of four 72-pound flasks of quicksilver daily at its mine 19 miles northeast of Healdsburg, California. The **Socrates** mine in the Pine Flat district near Healdsburg also is being prepared for production by the company. The mine has been unwatered; exploration of existing tunnels is almost completed; and mining is expected to begin

soon. All mercury produced by the Contact company is purchased by the government. A crew of 53 men is employed at the two mines, working three shifts at the Socrates and two shifts at the Contact. Roy F. Hickman is mine superintendent.

**W. W. Hartman**, 1230 East 109th Street, Los Angeles, California, is trucking 40 to 50 tons of scheelite a day to his mill at the **Valley View** mine near Ivanpah, California, from his claims known as the old **Standard Copper No. 1 and No. 2** groups. If the scheelite deposit is proved to warrant it, the concentrator will be moved to that property and its capacity stepped up from 50 to around 150 tons a day. The scheelite claims are owned by Riley Bemby, Cima, California, and are under lease to Hartman. It is planned to suspend work at the Valley View mine while the Standard groups are being put into production. The No. 1 group is said to have yielded \$240,000 worth of copper during the first World War; however, no attempt is being made at the present time to produce copper. Around 20 men are employed. Hartman also operates the Wall Street mine at Nelson, Nevada.

The **Panwacket Mining Company** expects to start active mining operations in the immediate future on Browns Creek in Trinity County, California, where it has installed a dry-land washer. A. M. Bennett, Douglas City, is in charge of the work. The company also has under lease several acres on Redding Creek.

The **Beaver Dredging Company**, Box 278, Yreka, California, is working on Indian Creek in Scott Valley nine miles from

Fort Jones, California, using a new four-yard 1201 Lima dragline shovel with an Esco three-yard bucket, powered by a Cummins type "L" Diesel engine, and a 2,500-yard Judson-Pacific washing plant. The ground, which is under option to the company, is estimated to contain sufficient material for three to four years' work. Leslie G. Allen, 615 "F" Street, Marysville, California, is general manager in full charge of operations, and is a co-partner in the company. Allen is addressed at Yreka at the present time.

A 21-mile power line to the **Grey Eagle** chrome mine in Glenn County west of Orland, California, is under construction by the Pacific Gas and Electric Company. It will carry 60,000 volts to furnish power for machinery and the 200-ton concentrating mill under construction at the mine. **Rustless Mining Corporation**, Robert H. Sayre, vice-president in charge of production, 504 Farmers and Mechanics Building, Sacramento, California, is operating the Grey Eagle. Clyde Osborn, Star Route, Orland, is general superintendent in charge at the mine and at the Pilliken mill operated by Rustless in El Dorado County.

**Lava Cap Gold Mining Corporation**, Otto E. Schiffner, vice-president and general manager, Nevada City, California, has nearly completed a 1,600-foot drift at the Banner mine. Development work is in progress on the 500, 1,000, and 1,400 levels, and undeveloped ground will be opened up following a year's diamond drilling program.

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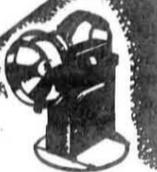
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Clearlake Park, California. A crew of 60 men is employed. The property is operated by the Bradley Mining Company, Worthen Bradley, president, 425 Crocker Building, San Francisco, California. A. F. Wolbert, Clearlake Park, is general superintendent.

Mining equipment to work an extensive gravel deposit at the Bird's Eye mine in the You Bet district of Nevada County, California, has been installed by A. D. Hadsel, Auburn, and Charles Brown. Both men have been active in mining in this section for several years.

Approximately 150 tons of ore have been stockpiled in 12 days at the chrome property operated by the McLaughlin and Applegarth Company, San Francisco, California, in the Elder Creek district 31 miles west of Red Bluff, California. The project is conducted under the management of the engineering firm of Wright, Dolbear and Company, 206 Sansome Street, San Francisco, with Arthur O. Hall, Red Bluff, engineer in charge. A crew of nine men is employed. Stockpiling will be continued until the government specifies a shipping point, to which the ore will be trucked.

A crew of 20 men is employed by the Diamond Mountain Mining and Milling Company at its property six miles south of Susanville, California. The company installed new equipment early this year and operates a custom mill of 40-ton capacity.

The Wolhall Dredging Company has completed the rebuilding and overhauling of its equipment made necessary after its dredge capsized and sank on September 15, and is again working on the Calaveras River on property owned by W. F. Sinclair of Jenny Lind, California. The company was forced to suspend operations for over five weeks for the repair work which was delayed due to lack of materials. The company consists of two partners, Edward Wolin and Albert Hall of Elk Grove, California.

Work has been started by Tungsten United Corporation, Mojave, California, on its pipeline and water recovery unit which is expected to enable the milling plant to operate on three daily shifts. The mill of 110-ton capacity was completed recently and handles the scheelite from the company's Shadow Mountain property and tungsten ore from its placer claim at Atolia, in addition to custom ore. Kenneth Dunham, Mojave, is superintendent.

A dragline dredge has been constructed at the Dutch Ravine placers near Newcastle recently taken over by L. A. Morrison of Newcastle, but part of the area may be worked by open-pit method. Dutch Ravine contains extensive gravel deposits containing both gold and considerable platinum. The section to be worked consists of 180 acres and has been acquired under lease by Morrison from E. R. Gastonguay, Newcastle.

Production will be resumed in the immediate future at the Schroeder mine 12 miles southwest of Yreka, Siskiyou County, California, following suspension of operations while new equipment was installed. Work has been handicapped by difficulty

in obtaining machinery parts and by a cave-in in the mine workings. The new milling equipment includes a 25-ton Straub mill, feeder, crusher, table, etc. Ore has been developed on the 1,700-foot level, and operations are expected to continue throughout the winter. The mine, a gold property, has been in production for the past two years. Major H. A. White, Yreka, is general manager, and H. G. Pharis, also of Yreka, is superintendent.

COLORADO

Ore shipments have been resumed from the Golden Harp mine near Boulder, Colorado, under the new management, known as the John Olson Mining Associates. Clayton E. Plummer, consulting engineer with offices in Suite 801, 310 South Michigan Avenue, Chicago, Illinois, is in charge of operations at Boulder. A 60-foot winze has been completed.

Development work for the Gold King Mines, Inc., in the Sweet Home district near Idaho Springs, Colorado, is being done under contract by George Marshall of Idaho Springs. A 150-foot winze is being sunk from the drift on the 200-foot level and another drift will be started from the bottom of the winze. Glen C. Shaw, Box 673, Idaho Springs, is president and manager of the company. Regular shipments of ore are sorted and sent to the Golden Cycle plant for treatment.

It is reported that G. W. Gunderson of the Gardner-Denver Company, 1727 East Thirty-ninth Avenue, Denver, Colorado, and associates are reopening the Phoenix Trail property in the Trail Run district near Idaho Springs. The winze, started by former operators, will be continued. The property comprises two claims and a mill site.

A lease on the Salisbury claims of the Stanley mines near Idaho Springs, Colorado, has been acquired by J. B. Furstenberg, 2711 Stout Street, Denver, Colorado. A hoist and compressor have been installed and development work is being started. Furstenberg has a number of mining interests in Clear Creek County, including the Metropolitan, the Franklin, and the Dorit-Perkins mines and the Hoosac mill.

A dividend of 75 cents a share has been declared by the Golden Cycle Corporation, Merrill E. Shoup of Colorado Springs, Colorado, president. Payment was made December 10, 1941, to stock of record November 29. The dividend totals \$195,000. A like amount was paid in September and in June, while the March dividend was 50 cents.

Completion of the U. S. Vanadium Corporation's mill at Rifle, Colorado, is expected early in 1942. While original plans called for a daily capacity of 85 tons, the plant has been enlarged while under construction to be able to handle 200 tons of ore daily. The company's plant at Uravan treats about 260 tons of vanadium ore

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Louis C. Raymond, assistant superintendent and geologist with Mountain Copper Company, Ltd., Matheson, California, has gone to Arlington, Virginia, where he may be reached at 1912 Twentieth Road North.

Arthur Kesling, who is employed by the Boeing Aircraft Company, has moved to 213 Harvard Avenue, Seattle, Washington. Kesling formerly was mill operator at the Tendoy Copper Queen Syndicate, Tendoy, Idaho.

Leon Ermatinger, dredgemaster for Lobica Company, Box 812, Sacramento, California, may be reached by addressing Route 1, Box 186, Colfax, California. He has been working at Sloughouse, California.

H. C. Mann, formerly general manager of the McNeil Construction Company of Los Angeles, is reported to have been appointed project manager of the Basic Magnesium, Inc., with headquarters at Las Vegas, Nevada.

James R. Cooper has left Phelps Dodge Corporation, Morenci, Arizona, where he was assistant test engineer to go to Inspiration, Arizona, as inspector in the leaching plant for Inspiration Consolidated Copper Company.

John W. Goetzcke, who has been at Deadwood, South Dakota, for the past several years as mill superintendent of the Gilt Edge property, has moved to Wheatridge, Colorado, where he is addressed Route 1, Box 368.

Wesley P. Goss, mine superintendent of the O'okiep Copper Company, Ltd., at O'okiep, Namaqualand, South Africa, will return to the United States shortly. Before going to Africa in 1937 he was active in Utah and Arizona.

James C. Hicks has left the Miami Copper Company, Miami, Arizona, where he was employed as assistant research chemist, to become junior topographic engineer with the United States Geological Survey, Sacramento, California.

George G. Heikes, formerly geologist for the National Lead Company and stationed at Pioche, Nevada, is deputy chief of the copper, zinc, and cadmium division of the OPM. His address is 3051 Idaho Avenue North West, Washington, D. C.

George F. Chock has left Silver City, Idaho, where he was on the operating staff of the Ymir Consolidated Mining Company and is being addressed at Box 1247, Ely, Nevada. The Ymir company has ceased operations for the winter months.

Robert A. Blake, who has been in Anaconda, Montana, since August, expects to return to Mexico next month, war conditions permitting. Blake has been head of the flotation research laboratory for Fresnillo Company, Fresnillo, Zacatecas.

Alfred J. Lomen, Jr., formerly of Seattle, Washington, is attending the Officer Candidate School of the field artillery at Fort Sill, Oklahoma. Lomen was associated at one time with the Consolidated Coppermines Corporation of Kimberly, Nevada.

Fred C. Jones of 758 South Vine Street, Denver, Colorado, recently resigned from the Chaney Explosives Company with

#### R. W. MUMFORD NAMED MANAGER OF AMERICAN POTASH AT TRONA

RUSSELL WILLIAM MUMFORD has been appointed manager of American Potash and Chemical Corporation at Trona, California, to succeed A. A. Hoffman, who recently resigned. Mumford has been with the potash company since 1920, when he accepted the post of research director. After three years he became assistant manager, and in 1929 assumed the position of consulting engineer. He has acted as consultant on all phases of business for American Potash and Chemical Corporation and as adviser to the executive committee of the company.

Mumford is a native of Cleveland, Ohio. He attended Michigan State Normal College and holds the degree of A. B. from that institution, and also A. M. from Columbia University. From 1911 until 1914 he served as college assistant in the chemistry department of Michigan State, and from 1914 until 1917 as university assistant in the chemistry and chemical engineering departments of Columbia University.

Upon leaving Columbia in 1917, he became associated with the U. S. Industrial Chemical Company, Baltimore, Maryland, as superintendent of products. Three years later he joined American Potash and Chemical Corporation.

During his time with the California company Mumford has had a major part in the development of the processes, equipment, methods and business of the firm, and in the potash and borax industries of the country. A few months ago he was appointed vice-president of the company.

The Trona plant produces potassium chloride and is one of the largest United States producers of lithium salts, used in the manufacture of Edison storage batteries for submarines. Bromine, which is used in the manufacture of high-test aviation gasoline, is another product. Early in 1940 equipment was installed by American Potash designed to produce from 2,000,000 to 3,000,000 pounds of liquid bromine, or its equivalent in bromides, annually.

which he had been associated for the past year, to become a member of the firm of the Colorado Iron and Equipment Company.

Cleland N. Conwell, with United States Vanadium Corporation, has been transferred from the company's tungsten property at Bishop, California, to Red Lodge, Montana, where U. S. Vanadium is building a concentrating plant at its chromite mines.

Russell W. Prouty, who is with the United States Bureau of Mines, Washington, D. C., is in Mexico in connection with the bureau's strategic mineral program. For the past six months he has been in Central and South America working in the same capacity.

Graham Nelson has been transferred to Masbate Consolidated Mining Company at Rio Guinobatan, Masbate, Philippine Islands, from Antamok Goldfields Mining Company at Baguio. Both companies are

Gilbert E. Gable, 55, mayor of Port Orford, Oregon, and leader of a secession movement among southern Oregon and northern California counties, died at his home in Port Orford, December 3, 1941. Gable went to Port Orford in 1935 from Philadelphia after having worked 11 years as a public relations man for the Bell Telephone Company and as publicity director of the third of the 12 Liberty Loan districts during the World War. Up until his death Gable was the president of the Port Orford Dock and Terminal Company. His mining interests included the Inman gold placer mines in Curry County.

#### JAMES W. GWINN

JAMES W. GWINN, 53, for nine years secretary of the Idaho Mining Association, died of a heart attack in his office December 8, 1941, after completing a usual day's work. He was born in Bethlehem, Pennsylvania, in 1888, and went to Idaho in 1896.



James W. Gwinn

In 1911 he was graduated from the Idaho School of Mines and for 20 years he was employed by the Bunker Hill and Sullivan Mining and Concentrating Company in Idaho, Alaska, and other portions of the Pacific Northwest. His last active work for the Bunker Hill concern was as superintendent of the Hall-Interstate properties. Arthritis forced his retirement from active mine work, but did not prevent him from working for the industry through the mining association.

#### PAUL BOSWELL

PAUL FRED BOSWELL, geologist and chief engineer for Demonstration Gold Mines, Ltd., Baguio, Philippine Islands, died October 31, 1941, at the age of 42.

He went to the Philippines in 1937 as field engineer for Developments, Inc., and became superintendent at the Capsay mine in 1939. The following year he took over the duties of field engineer and geologist for Philippine Iron Mines, and remained with that company until last August, when he became associated with Demonstration.

Boswell was born in Hartsville, South Carolina. He was a graduate of Stanford University, holding degrees in mechanical engineering and mining engineering, and was a member of the Society of Economic Geologists.

Included in his mining company affiliations before going to the Islands, were mining geologist for Calumet and Hecla in 1923; geologist with Phelps Dodge Corporation at Bisbee in 1924; 1927, manager of the Carlisle mine in New Mexico, near Duncan, Arizona; and in 1928 master mechanic with the Empire Zinc Company. In 1930 he practiced as an independent mining engineer with headquarters in Los Angeles.

#### ALL-TIME RECORD REACHED IN PHILIPPINE GOLD OUTPUT

SEPTEMBER gold production in the Philippine Islands amounted to ₱8,420,704, establishing an all-time high for any single month of mining in the Islands. The figure was released by the Bureau of Mines, and included both lode and placer production.

At the present rate of production, it is estimated that a total output of ₱88,000,000 to ₱90,000,000 will be reached in 1941 against ₱74,000,000 last year.

#### ANNUAL MINING INSTITUTE WILL BE HELD IN SEATTLE

THE fifteenth Annual Mining Institute will be held during the week of January 19 to 24, 1942, in Seattle, Washington, under the sponsorship of the College of Mines of the University of Washington. During the meeting, staff members of the college will give lectures and laboratory demonstrations covering mining, metallurgy, and ceramics, while operators and engineers will describe and illustrate field and plant activities. A joint meeting will be held with the North Pacific Section of the American Institute of Mining and Metallurgical Engineers.

The daily meetings are open without charge to all persons interested in the mineral industry. Included among the scheduled meetings will be a field trip to a plant near Seattle. The carefully planned schedule permits attendance at a single meeting or a series of continuous meetings during the week.

Detailed programs and announcements will be made late in December, but requests for preliminary information may be addressed to Milnor Roberts, Dean, College of Mines, University of Washington, Seattle.

#### NEW MEXICO MINERS' GROUP WILL HOLD ANNUAL CONVENTION

THE New Mexico Miners and Prospectors Association will hold its fourth annual meeting at Albuquerque, January 16 and 17, according to an announcement by Frank McDonough, president of the organization. A feature of the convention will be a series of "clinics" in which mining men will discuss their problems and hear from experts in the fields of mining, metallurgy, social security, insurance, prospecting, geology, mining law, legislation, and safety.

National machinery firms and manufacturers will have a large exhibit of newest equipment for development and operation of mines; latest types of powder explosives will be shown; and safety equipment will be demonstrated by officials trained in their use. Engineers, representing the United States Bureau of Mines and other federal departments, will explain various government regulations concerning ceiling prices for metals and federal financing of mines to be opened or developed.

In the way of diversion, the two-day meet will feature numerous social events, principal of which will be the "golden" banquet, carrying out the convention theme of "High-Grade Days." John W. Valentine of Boulder, Colorado, who presides an-

nually at the Sowbelly Dinner held in Denver by the Colorado Mining Association, will be toastmaster. A speaker will be Robert S. Palmer, secretary of the Colorado association, and a guest at the banquet will be Governor John E. Miles.

The Franciscan Hotel is to serve as headquarters for the meeting.

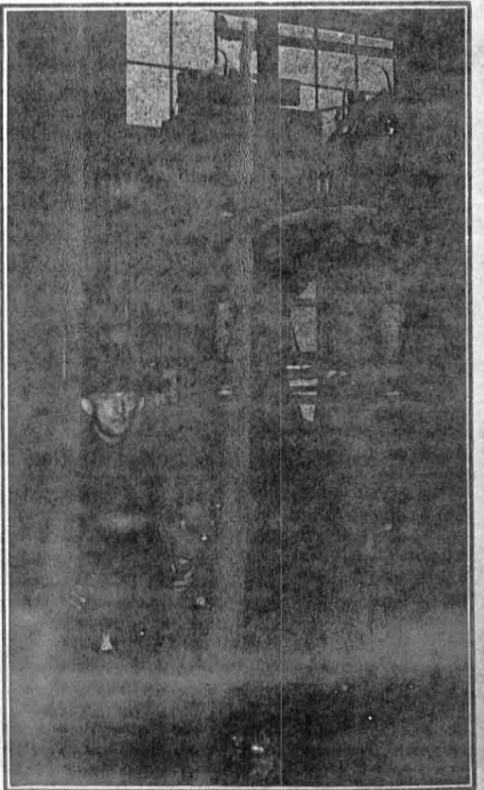
#### DEVELOPMENT WORK RESULTS IN ORE STRIKE AT HAGEMAN MINE

THE first important strike ever made in the Hageman mine two miles north of San Andreas, California, was reported recently by the present owner and operator, Ray Hageman. Sixty years ago, Lewis Hageman, father of Ray, opened the mine, and from time to time other operators have attempted its development. These operators did little underground work, but endeavored to block out a large tonnage of low-grade ore from an open cut.

Ray Hageman bought the mine in 1936 from the state for delinquent taxes, and since then has carried on exploration work, doing most of it himself because no money was available to hire help. After sinking to the 130-foot level, he uncovered a vein eight to nine feet wide, and bearing commercial ore. About 60 feet of it are said to be exposed.

The mine is opened by a three-compartment shaft, and is equipped with a double-drum hoist, an 18-stamp mill, four amalgamation tables, two concentrating riffle tables, two vanner tables, and a 150-horsepower Diesel engine which operates a generator to supply electric power.

Hageman is carrying forward development work and employing two men.



Ray Hageman, standing beside the 150-horsepower Diesel at his mine near San Andreas, California.

liams, president, Box 693, Duncan. Values are in silver and gold.

Thirty-five tons of ore have been mined from the Sanders manganese mine, formerly known as the Hardy. T. M. Sanders, Duncan, owns the property, which is located 12 miles west of Duncan.

One car of ore a day is shipped to the International Smelter at Miami, Arizona, from the Ash Peak mine in the Ash Peak mining district 11 miles west of Duncan, Arizona. Mining is from the 300 level west of the Commerce shaft. Values are in silver. Dan Mayne and Howard Motter are operating the property as the Ash Peak Lease and employing 17 men.

The Calistoga Mining and Development Company, Klondyke, Arizona, has completed the milling of tailings at the Grand Reef mine, and is employing five men in overhauling. New power equipment is necessary for mining and milling ore from the mine, and the operators are now awaiting further financing with plans for seeking an RFC loan. Five men are employed at the present time. J. Robert Clarkson is general superintendent, and Tom Massey is mine foreman, both of Klondyke. Richard Bard is president of the company and Hugh B. Martin, general manager, 811 West Seventh Street, Los Angeles, California.

A. J. Klamt, mining engineer of 2335 Virginia Road, Los Angeles, California, is employing several men in cleaning out old workings at the Aravaipa mine in the Aravaipa district near Klondyke, Arizona, preparatory to examination. Present work

is in the Iron Cap tunnel. New interests are awaiting the report with a view to taking over the property. Klamt's present address is Box 208, Safford, Arizona. The Aravaipa zinc tailings have been purchased by J. A. Gruwell and associates, who have erected a pilot plant at Klondyke to concentrate the tailings, and then treat this product by roasting and hydro-chemical separation to produce zinc oxide. The plant is to prove, on a semi-commercial basis, a new treatment for complex zinc ores. A crew of five men is employed.

The Commonwealth mine at Pearce, Arizona, under option to Walter N. Sim, Klondyke, is being worked by two sets of lessees. One car of ore is shipped monthly from underground work, and dump and surface ores are treated with a jig. Two men are working underground and four on the surface.

During the month of October three smelter shipments were made from the property of the Ari-Butte Operating Company, Sombrero Butte, Arizona, part being taken from the 225-foot level and a portion from the 300-foot level. The shipments were small, none amounting to over 30 tons. The company is operating 33 claims formerly held by the Bunker Hill Arizona Mining Company, O. W. Blevins, Sombrero Butte, president and general manager. The 300 and 400 levels of the mine have been unwatered since August 31, and the 300 level has been cleaned, retimbered, and put into active operation. Since September, milling has been on a two-shift daily basis.

Shattuck Denn Mining Corporation, Thomas Bardon, president, 120 Broadway, New York, New York, has declared a dividend of 12½ cents payable December 20, 1941, to stock of record December 8. The company operates a mining property at Bisbee, Arizona, under the direction of J. A. Wilcox, superintendent.



Upon completion of electric power lines, the new furnace and equipment installed at the quicksilver property of Klau Mine, Inc., near Paso Robles, California, will go into production. An expenditure of approximately \$50,000 has been made by the operator, H. W. Gould and Company, Mills Building, San Francisco, California. An average of 45 tons of ore a day is being treated at the present time, but after the first of the year capacity of the reduction plant will be 100 tons daily. Retorts are operated 24 hours a day and mining is conducted on one and two eight-hour shifts. The Gould interests acquired the property in 1934, inaugurated new methods of production, installed new equipment, and opened ore deposits at a depth of 700 feet, 400 feet below the former maximum depth. Miners are engaged at the present time in sinking a new shaft. The number of men employed is expected to be increased from 42 to 50 in the near future. B. A. Gould is general manager, and F. A. Bachich is in local charge. The quicksilver, formerly shipped to United States manufacturers and to China, is all going to the United States government.

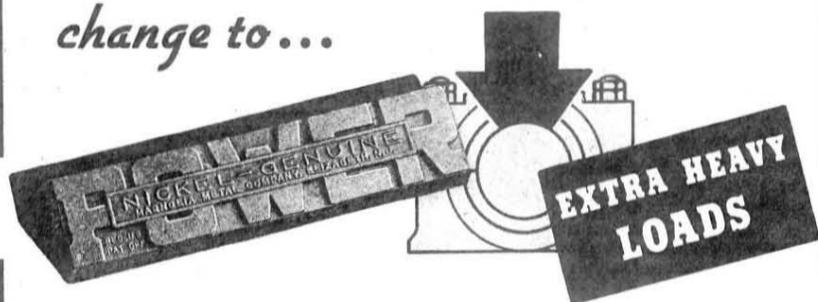
Two gold dredges on the Trinity River were wrecked as a result of the high waters from continued rain. One, owned by the Placer Exploration Company, Box 498, Chico, California, which had been working 1½ miles below Douglas City, was swept away when the winch cable broke under pressure from the water current. Another, owned by C. E. Grewell, San Andreas, California, was carried down the river and destroyed by dynamite when it menaced the county bridge near Lewiston, California.

The Tungsten Milling Company, A. L. Crowthers, president and general manager, Box 145, Bishop, California, is producing 200 pounds daily of tungstite and six tons of garnet. Gasoline shovel and trucks are used in mining. A wet mill treats the tungsten and a dry mill is used in recovery of the garnet. The combined capacity of the two plants is 100 tons. Present operations are being conducted on 500,000 tons of tailings, with 12 men employed. William C. Longnecker is mill superintendent; B. J. Vaughan is master mechanic; and C. E. Demerest, chief clerk. All are addressed at Bishop. It is planned to add another shovel and another truck to the present equipment.

Five tons of gold and 25 tons of talc are being produced at the property of the Alliance Mining Company near Panamint Springs, California. A crew of

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# MAGNOLIA BEARING METALS

13 men is employed, including 10 in the mine and three in the mill. A shaft is being sunk on the talc, and miners are sinking a winze and driving a crosscut at the gold deposit. The 20-ton milling plant uses cyanide, leaching and amalgamation. The company maintains offices at 4646 Melbourne Avenue, Darwin, California. M. C. Williams is president and general manager, and J. C. Lovei is mine superintendent, both addressed at Panamint Springs. Fred Thompson of Darwin is consulting engineer.

The **Panob Gold Dredging Company**, Walter E. Pantle, general manager, Box 315, Newcastle, California, is employing 18 men in its dryland gold mining operations. Equipment includes one machine with four Ainlay bowls, one machine with six Ainlay bowls, and three Northwest draglines. Approximately 5,000 cubic yards are handled daily in two eight-hour shifts. H. N. Harrod, Lincoln, California, is mine superintendent.

Production of quicksilver ore continues steadily at the property of **New Almaden Corporation**, Almaden, California, with a crew of 40 men employed. The recovery plant has a capacity of 100 tons. The mine, an old property 13 miles southwest of San Jose, California, and covering 4,765 acres, was reopened over a year ago by the present company. F. Eugene Newbold, 1515 Locust Street, Philadelphia, Pennsylvania, is president of the corporation; and Edward Wisser, 74 New Montgomery Street, San Francisco, California, is consulting geologist. Local officials include C. N. Schuette, general manager; Bert Mitchell, general superintendent; C. E. Evans, mill superintendent; Conrad Martin, chief mine engineer; L. V. Chancellor, master mechanic; and F. A. Ammerman, purchasing agent.

**Sheba Mines**, L. D. Floyd, president, 810 East Eighty-seventh Place, Los Angeles, California, plans construction of a large mill at its property near Palmdale, California. The company is handling 50 tons of ore daily in its present 100-ton plant. The ore contains calcium carbonate, magnesium carbonate, oxide of iron, and about 20 other elements. W. E. Bass of Inglewood, California, is general manager. Four men are employed.

**Lava Cap Gold Mining Corporation**, O. E. Schiffrer, general manager, Nevada City, California, is treating 425 tons of gold and silver ore daily in its 500-ton mill. Ore treatment processes include flotation, cyanide, and leaching. Daily production amounts to \$4,000. Three hundred men are employed in the mine; 15 in the mill; 5 in surface work; and 20 in the shops. Local operating officials include John W. Chandler, general superintendent; J. F. Siegfried, mine superintendent; Tom Leahy, assistant mine superintendent; I. O. Proctor, mill superintendent; Charles Moody, assistant mill superintendent; Hugh Bien, chief mine engineer; C. H. Miller, master mechanic; Wendel McClish, chief electrician; Nelson Dodge, chief chemist; Carlton Peasley, purchasing agent; John Franz, safety inspector and employment agent; Harry Morton, chief clerk; and Earl Belting, mine foreman.

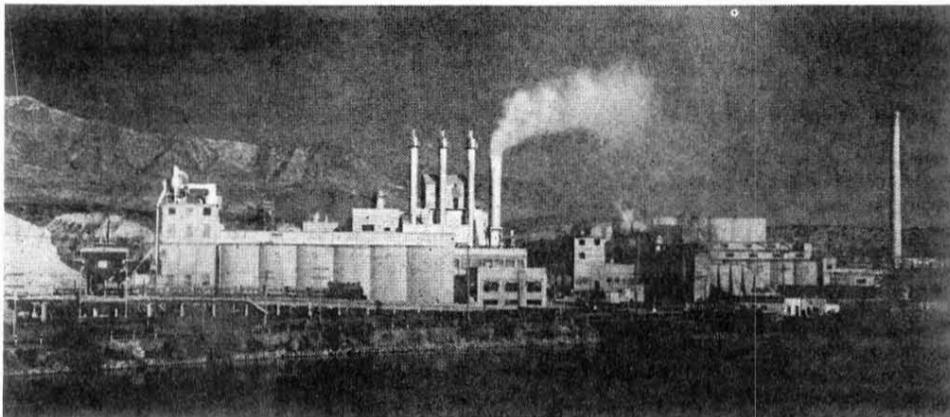
Fifty-five men are employed at the property of **Sonoma Quicksilver Mines, Inc.**, near Guerneville, California, where five flasks of quicksilver are produced daily. The Gould furnace is roasting from 80 to 90 tons of ore daily. H. D. Tudor, 58 Sutter Street, San Francisco, California, is president and general manager of the company. S. F. Wickham is assistant general manager and Herbert Larsen, chief mine engineer, both of Guerneville.

**King Solomon Mines Lease** reports a daily production of 5 to 10 tons of ore daily at its mine east of Randsburg, California. Gold is recovered by amalgamation after being crushed in the stamp mill. The plant has a capacity of 15 tons. The company is a partnership comprised of

Max Hess, Emil Schultz, James Christensen, and James Nosser, which has operated the property for the past four years. Hess is mill superintendent. The mine is under lease from the Shipsey Mining Company, 600 Mound Avenue, South Pasadena, California.

Frank Dillon, Nevada City, California, is employing 13 men at his **Dillon mines** near Nevada City. Hydraulic mining is used, and the gold is recovered by using riffles. The recovery unit has a capacity of 25 tons.

Three shifts, handling 1,000 yards per shift, are employed by the **Beaver Dredging Company**, Leslie G. Allen, general manager, Box 278, Yreka, California. Work is being conducted on Indian Creek



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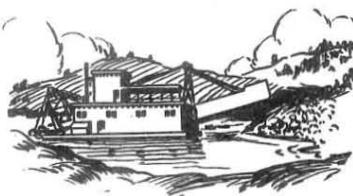
**EL TORO CEMENTS AND EL TORO RICHMORTAR**

in Scott Valley nine miles from Fort Jones, California, where a crew of 14 men is employed. Clarence Roundtree is in charge of operation of the Lima dragline. Lyman Oakley, Snelling, California, is president of the company, which is addressed at Box 453 in Fort Jones.

**Poverty Hill Properties**, Walter W. Johnson, general manager, 910 Balfour Building, San Francisco, California, has moved a six-foot dredge built six years ago for the Arroyo Seco Gold Dredging Company at Ione, California, to the Poverty Hill mine near La Porte, Sierra County, California. The mine is on a part of the La Porte channel between Slate Creek and Scales, and a portion of this channel, varying in width from 300 to 400 feet, is being mined. Caterpillar tractors and Le Tourneau Carryalls are being used in stripping operations. The electrically operated dredge has a capacity of about 5,000 cubic yards daily. The mine formerly was worked as a hydraulic proposition, and the present operators are considering hydraulicking off part of the overburden and storing the tailings in the recently constructed dam on the Yuba River. This would be done when the water was high and pollution would not be so much of a problem. Army Adams, 714 West Main Street, Grass Valley, California, is in charge of operations for the company.

The **Placer Exploration Company**, Box 498, Chico, California, is reported to have optioned approximately 200 acres of dredging ground on Dutch Creek in the vicinity of Junction City, California. The company conducts three dredging projects in California. J. Craig Hamilton, Room 409, First National Bank Building, Chico, is manager, and Walter Laswell, Box 113, Palermo, is superintendent of all operations.

Development work has been started at the gold property of **Hayden Gold Corporation** near Adin, Lassen County, California, by the **King of Pine Creek Mining Company** of Idaho. A deal has been consummated between the two companies, whereby stockholders of the Hayden Hill concern acquire a certain stock interest in the King of Pine Creek company, and at the same time retain all their original holdings in the Hayden Hill company, the object being to finance a development program on an assessment basis. The first half-cent assess-



ment, payable December 23, has been made. The California property is equipped with a modern cyanide mill, and present development work is being concentrated on a drift along a vein toward a larger mineral showing on an adjoining claim. Carl H. Halstrom is president and manager of the King of Pine Creek Mining Company and C. C. Anderson is vice-president. Main offices are at 419 Symons Building, Spokane, Washington.

One hundred tons of gold ore daily are produced at the property of **Briarcliffe Mines, Ltd.**, 12 miles from Plymouth, California. The property is under lease to Allan J. Anderson, Plymouth, who is employing a crew of 25 men. An ore body is being developed 1,000 feet north of the old workings.

**Roseville Dredging Company** is employing 18 men in its operations near Roseville, California. Production is under way under the direction of Herbert Way, Box 647, Roseville. Norman Cleaveland, 351 California Street, San Francisco, is general manager, and Frank P. Adams, Russ Building, San Francisco, is president.

Thirty men are employed by **Madre Oro Gold Mines, Inc.**, at its property near El Dorado, California. Production will be at the rate of 350 tons daily upon completion of the mill now under construction. Development work is being continued along with the building program. W. J. Loring is general manager; Lloyd E. Hill, master mechanic; and Herman Moller, purchasing agent. All are addressed at El Dorado. Forrest Riley, Corcoran, California, is president of the company.

The **Charles E. Pray Company** is preparing for production on ground near La Grange, California, employing 15 men. A shovel will be used to mine the gravel, and a washing plant of 2,000 cubic yards' daily capacity will be used in gold recovery. The company plans to add an RD8 Caterpillar and bulldozer to its equipment

at a later date. Charles E. Pray of La Grange is president and general manager.

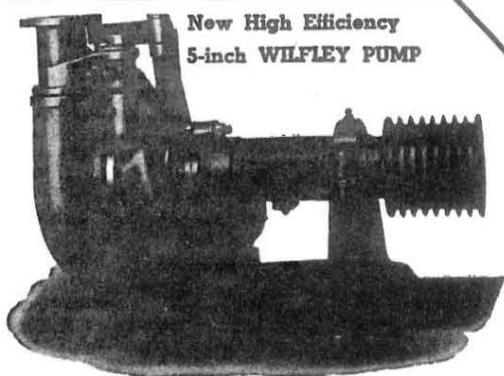
The **Barker Corporation**, Glenn Bump, president, Hornitos, Mariposa County, California, is handling 2,500 cubic yards of gold gravel daily, using a two-cubic yard dragline and floating dredge. The equipment is being moved from the Tuolumne River to a location on El Dorado Creek near Hornitos. Testing crews are working near Coloma and Placerville, California. A crew of 15 men is employed under the direction of James Hammett, general superintendent. S. M. Bump, also of Hornitos, is secretary.

**Carrville Gold Company**, 807 Lonsdale Building, Duluth, Minnesota, is moving from 9,000 to 10,000 cubic yards of gold gravel daily at its property at Trinity Center, Trinity County, California. Equipment includes a Yuba Consolidated connected bucket-type dredge with 12-cubic foot buckets. M. B. Phelps, Trinity Center, is mine superintendent. Walter B. Congdon, 807 Lonsdale Building, Duluth, is president, and Harvie A. Garver of the same address is secretary of Carrville Gold. F. C. van Deirse, 351 California Street, San Francisco, is general manager of Yuba Consolidated Gold Fields, which is acting as operating agent.

Gold, zinc, and lead ore is being produced and treated in the 40-ton flotation mill at the **Eagle King** mine, Grizzly Flats, California. A crew of 14 men is employed under the direction of C. E. Irwin, general manager, Grizzly Flats. Harry M. Irwin, 215 West Fifth Street, Los Angeles, California, heads the operating group. A. M. Strong of the same address is secretary. Mining operations are supervised by John Acuna, mine superintendent, and and milling is directed by George Campini, mill superintendent. C. E. Irwin, Grizzly Flats, is purchasing agent.

The **Clear Creek Dredging Company** is maintaining a daily production of 6,500 cubic yards of gravel daily from its two dragline floating dredges. Riffles are used in recovery of the placer gold. David W. Hinds, Box 598, Redding, is general manager; George Bibbens is general superintendent; and O. J. Raine is mine superintendent.

Production of gold will start soon at the property of **Alhambra-Shumway Mines**,



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Inc., W. J. Loring, managing engineer, El Dorado, California. The mine is closed temporarily while development work is under way. The milling plant consists of a 25-ton ball mill and amalgamation and flotation units. The mine has been developed to a depth of 500 feet and is equipped with electric power. John E. Webb, 180 Monroe Street, Coalinga, California, is president, and S. T. Hilburg, Kelsey, California, is mine superintendent. C. E. Halliburton, 701 Helm Building, Fresno, is secretary. The mine office is at Kelsey, California.

A daily production of 150 tons of gold-silver ore is reported at the property of Kern Mines, Inc., Kernville, California, where a crew of 54 men is employed. The shaft is being deepened from 560 feet to 660 feet, where an ore body will be opened up. The 150-ton amalgamation-flotation mill is operating at capacity. Roland Tognazzini, 260 California Street, San Francisco, is president of the company, and D. S. Bates, 1 Montgomery Street, San Francisco, is secretary. John W. Prout, Jr., California Bank Building, 9441 Wilshire Boulevard, Beverly Hills, California, is general manager and consulting engineer. Local officials at the mine include Fred W. Sherman, superintendent; Charles E. Graham, master mechanic; H. K. Froelich, chief clerk; C. E. Ellis and Edward Hattebuhr, shift foremen. The property is operated under lease from the Kern Development Company of Hayward, California.

A. J. and G. M. Carey, owners and operators of the Fisher Maiden mine 14 miles east of Nevada City, California, plan construction of a stamp mill at the mine in the spring. The brothers, who have been developing the Fisher Maiden for several years, recently uncovered a 50 to 60-foot ledge showing free gold. The workings are reached by means of a shaft and series of tunnels. Eight veins are reported to have been uncovered in development. The Fisher Maiden comprises six quartz and one placer claim. Considerable gold is said to have been taken in early days from the gravel deposit.

A crew of men is taking out pillars at the Bald Eagle mine of Westvaco Chlorine Products Corporation, Gustine, California, preparatory to abandoning the property. The company operates the Western magnesite mine on Red Mountain. J. B. Perry, Gustine, is mine manager.

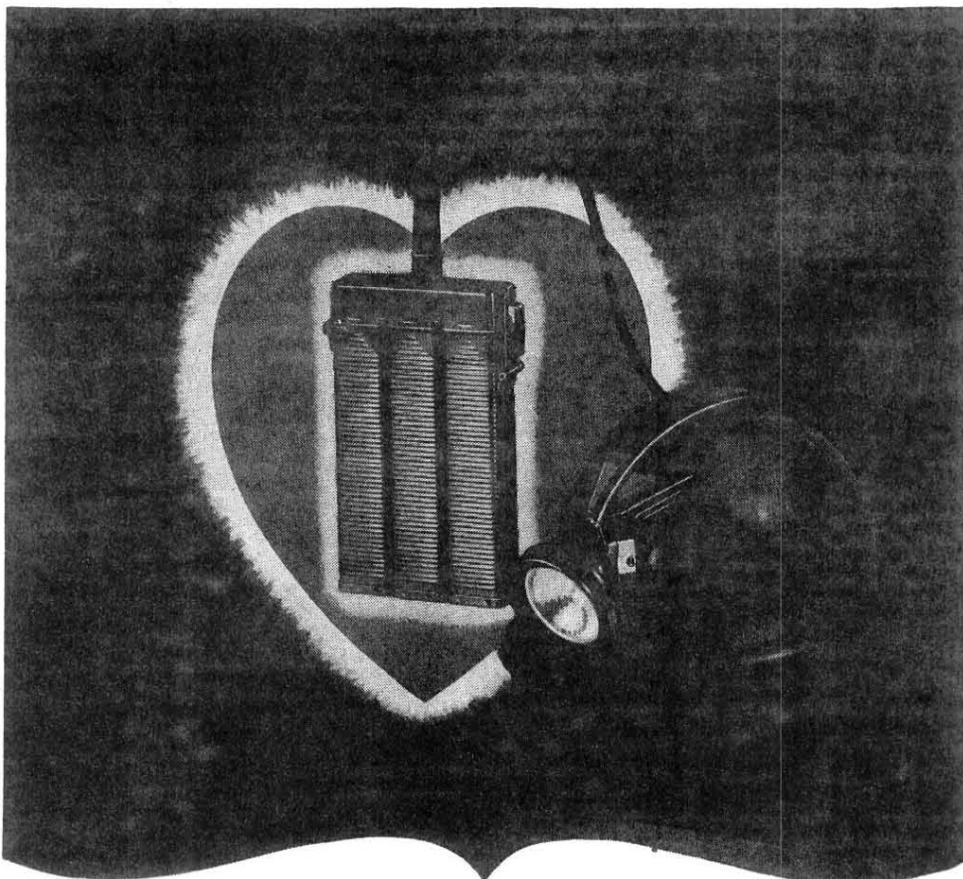
The Coffee Fork Mining Company, V. L. Duhem, secretary, 6127 Harwood Avenue, Oakland, California, has reported opening up two veins showing commercial values at its property five miles west of Carrville, Trinity County, California. The company has been doing considerable diamond drilling, but winter snows handicap work for three months of the year. If sufficient ore is developed, it is planned to erect a mill at the property next summer. At the present time the company is using a rented mill near by. Values are in gold and silver. L. B. Williams, 1 Drumm Street, San Francisco, is president of the company.

Ballard Mother Lode Mines, Inc., John F. Ratto, president, and general manager,

Sutter Creek, California, has resumed activity at its property near Plymouth, California. Operations were suspended five years ago when water was encountered, necessitating installation of new pumping equipment. This equipment and other machinery have been installed and a power line is being run to the mine. The holdings comprise four mining claims of 160 acres, on which the original shaft was sunk to a depth of 200 feet. The present operators have sunk another shaft 300 feet and from that level intend to run two crosscuts to contact three parallel veins. Albert Raggio, Jackson, California, is assistant general manager.

Expansion of its plant capacity is planned by the Contact Quicksilver Mining

Company, 1924 Broadway, Oakland, California, when a sufficient ore tonnage is developed in the Socrates mine. This mine, located in the Pine Flat district near Healdsburg, California, is being rehabilitated by the Contact company and sinking of the No. 2 winze to 200 feet is now under way. The company is currently producing three flasks of quicksilver daily at its Contact mine 19 miles northeast of Healdsburg. The recovery unit has a capacity of 50 tons and is handling 40 tons of ore daily. A crew of 52 men is employed under the direction of Roy F. Hickman, general superintendent, Box 307, Healdsburg. Jack Coleman, is mine superintendent and P. C. Swarts, master mechanic, both of Healdsburg. Bert Austin,



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Balfour Building, San Francisco, California, is consulting engineer; R. G. Thomas, 1924 Broadway, Oakland, is purchasing agent; and Charles T. Dyhre, 726 Wheeler Street, Santa Rosa, is chief clerk.

**Natomas Company**, Thomas McCormack, president, Forum Building, Sacramento, California, has declared an extra dividend of 10 cents a share on the capital stock in addition to the regular quarterly payment of 25 cents, both payable December 27, 1941, to stock of record December 9. With distribution of this dividend, total payments in 1941 amounted to \$1.10 a share compared with \$1.05 a share in 1940.

**Empire Star Mines Company, Ltd.**, is employing a small crew at its **Dannebrog** mine in Brown's Valley adjacent to the abandoned Pennsylvania mine, and the ore mined is treated at intervals in the Pennsylvania mill. Steady progress is being made on the tunnel from the **Zeibright** mine to the **Omega** workings. A crew of 12 men is working on the **Zeibright** side and a larger crew from the **Omega** end. A Diesel plant has been installed at the **Omega** side to furnish power for the compressors, and a loader has been put into use in the tunnel. When completed the tunnel will be more than three miles long and is being driven in order that tailings may be sent from the **Zeibright** mill to the **Omega** workings and the **South Yuba** River. At the **Empire** mine the **Rowe** shaft has been sunk 800 feet on the incline toward the 2,000 level of the mine, which is the objective. This work is being done to provide added ventilation and hoisting facilities for the **Empire** mine. **Ellsworth Bennett**, Nevada City, California, is superintendent of the **Pennsylvania** and **Dannebrog** mines.

## COLORADO

The **Climax Molybdenum Company**, **Max Schott**, 500 Fifth Avenue, New York, president, declared a 30-cent quarterly dividend and a \$1 year-end dividend, both payable December 22, 1941, to stock of record December 12. This brings the dividends for the year to \$3.20 a share. Company operations at **Climax** are being carried on at capacity, under the general management of **William J. Coulter**.

A dividend of ½-cent a share has been declared by the **United Gold Mines Company** of **Cripple Creek**, **Colorado**, payable December 20, 1941, on 4,866,825 outstanding shares. The company's extensive mining interests at **Cripple Creek** are under the general supervision of **A. H.**

**Bebee**. Work is done by the company and by numerous lessees. **Merrill E. Shoup**, Box 86, **Colorado Springs**, is president.

It is reported that the **Golden Cycle Corporation's** plant at **Colorado Springs**, **Colorado**, treated ore from the **Cripple Creek** district during the first nine months of 1941 having a gross value of \$3,511,838. During the same period last year the gross value of **Cripple Creek** ore treated amounted to \$3,280,408, showing an increase of \$230,000 in the current period. Tracks in the **Carlton** tunnel have been laid by the **Golden Cycle Corporation** to a point nearly 700 feet beyond the **Ajax** shaft and in less than 1,200 feet the tracks will reach the **Portland** raise. Work to release the water from the bulkhead on the thirtieth level of the **Portland** is progressing and a station is being cut on the twenty-seventh level of the **Ajax**, which is 150 feet below the **No. 26** level. Before any development on these levels of the **Ajax** is undertaken, the shaft will be extended 105 feet. **Robert Welch** of **Cripple Creek** is in charge of the finishing details in the **Carlton** tunnel. **A. H. Bebee** of **Independence** is in general charge of company mine work.

December 15 was the date set by the **Resurrection Mining Company**, **Leadville**, **Colorado**, for starting production in its new 250 to 300-ton flotation and gravity concentration plant. **George A. Kervin**, with headquarters at the company's home office, 14 Wall Street, New York, is general manager at **Leadville**, employing about 200 men. Recoverable values are in gold, silver, lead, and zinc. The operating staff at **Leadville** includes **Arthur Kendall**, general superintendent; **Kenneth Tatman**, mill superintendent; **A. G. Gunelson**, chief mine engineer; **R. T. Walker**, chief geologist; **William Doyle**, master mechanic; **Norman Schroeder**, chief electrical engineer; **Claud Teel**, chief chemist; **Louis Saban**, mine foreman; and **Henry Volkman**, chief clerk.

Two new stationary compressors and a portable compressor have been purchased by the **Rico Argentine Mining Company** of **Rico**, **Colorado**, and electrical equipment has also been ordered. The company is reopening portions of its newly acquired **Pelleyre** property which consists of about 275 claims covering around 1,500 acres at **Rico**. The company also negotiated a lease with the **St. Louis Smelting and Refining** unit of the **National Lead Company** to use the shaft and to mine ore in **St. Louis** ground adjoining **Rico Argentine** property. About one-third of the 135-ton mill capacity will be given to this lease ore. The **Rico Argentine** concern is considering a plan for financial reorganization, whereby present 10-cent stock now outstanding will be exchanged on the basis

of five to one for new 50-cent stock. Company headquarters are at 132 South Main Street, Salt Lake City, Utah. **James E. Hogle** of **Los Angeles** recently resigned as president and was replaced by **C. T. Van Winkle**, **Dooly Block**, **Salt Lake City**, who is also general manager. According to the present reorganization plan, **James Hogle** and his brother, **George H. Hogle** of **New York**, will underwrite the new stock.

A cyanide unit will be added in the near future to the **Old Town** mill which was moved recently to **Idaho Springs**, **Colorado**, by **Proctor G. Milliken** of **Idaho Springs**. The plant was remodeled recently and put into operation as a custom mill by **Milliken and associates** and has a 75-ton capacity.

Mining has been started in the **Forest Home** property of the **Gold, Silver and Tungsten, Inc.**, which has recently been unwatered and cleaned out. A four-foot vein which contains a streak of high-grade is being developed on the lowest level. **J. G. Clark** of **Boulder**, **Colorado**, is president and general manager of the company which has granted leases on portions of its extensive holdings near **Boulder** and also operates on its own account.

A lease on the **Cold Spring No. 2** property near **Boulder**, **Colorado**, has been obtained by **Elmer Hetzer** of **Boulder** and associates. Since the old shaft is caved, lessees are sinking a new one a short distance to the northeast. Ore values are in gold.

The **Mile High Mining Company** is producing from the fourth level of its **Smuggler** mine near **Silver Plume**, **Colorado**, employing about 25 men. The lead-zinc ore goes to the **Silver Leaf** mill of the **Consolidated Smelting and Metals Company** and the zinc concentrates are sent to the **A.S. & R.** plant at **Amarillo**, **Texas**. **George Rowe** of **Silver Plume** is in charge.

A new hoisting plant is being installed at the tunnel level in the **Joe Reynolds** mine on **Silver Creek** southwest of **Lawson**, **Colorado**. The shaft from this level will be extended. **Ed F. Jordan** of **Lawson** is superintendent.

Soon after the first of 1942, **Rosebud Mill, Inc.**, is expected to start its new mill on **Rosebud Hill**, **Cripple Creek**, **Colorado**. **E. E. Rockfield** of the **Rockfield Equipment Company**, 1245 York Street, **Denver**, is president and **Harry S. Silverstein, Sr.**, of **Denver** is a director and counsel. The plant, which will handle 100 tons of ore daily and later will be enlarged to treat 200 tons, was designed primarily to handle ore from the **Gold Empire, Inc.**, at **Cripple Creek**. The mining company, **John Kolman** of **Cripple Creek**, president and general

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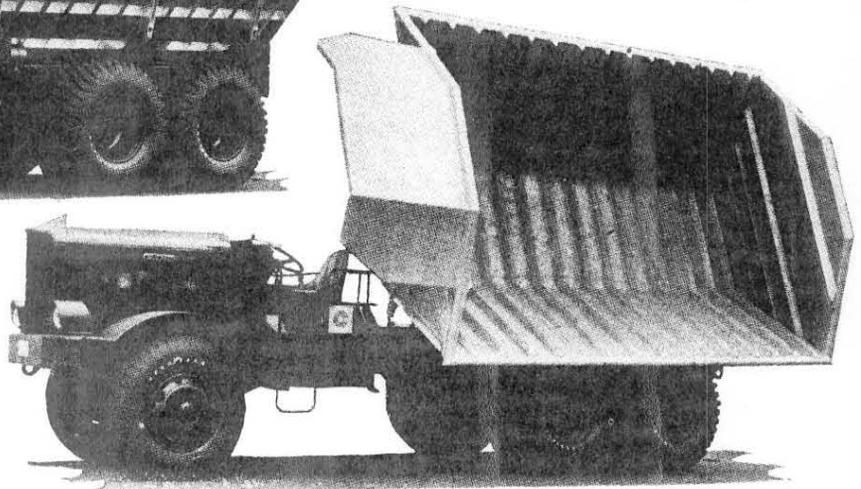
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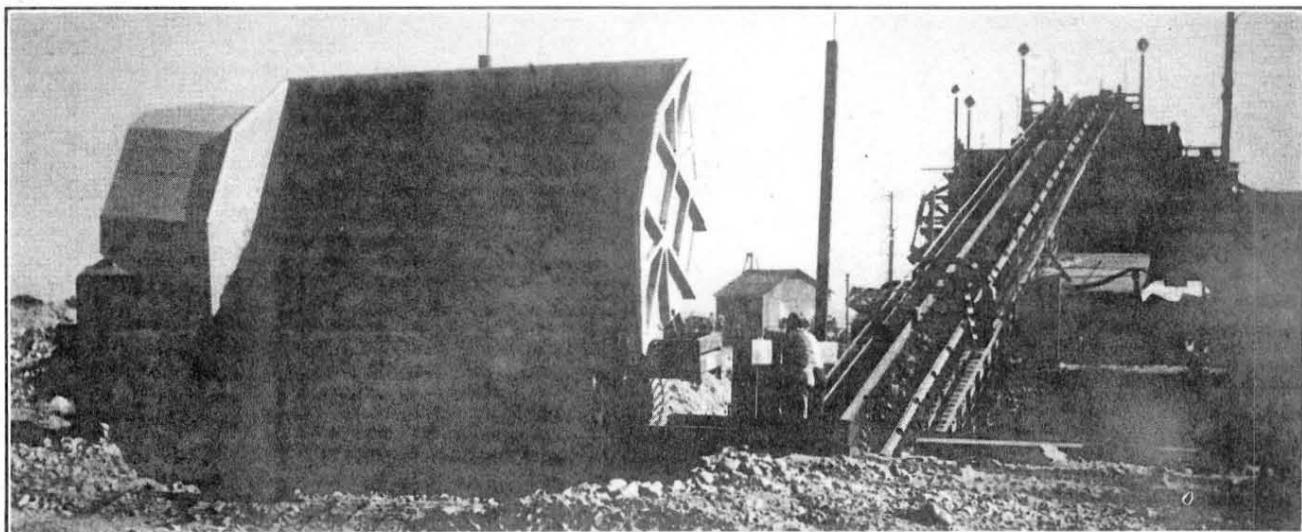
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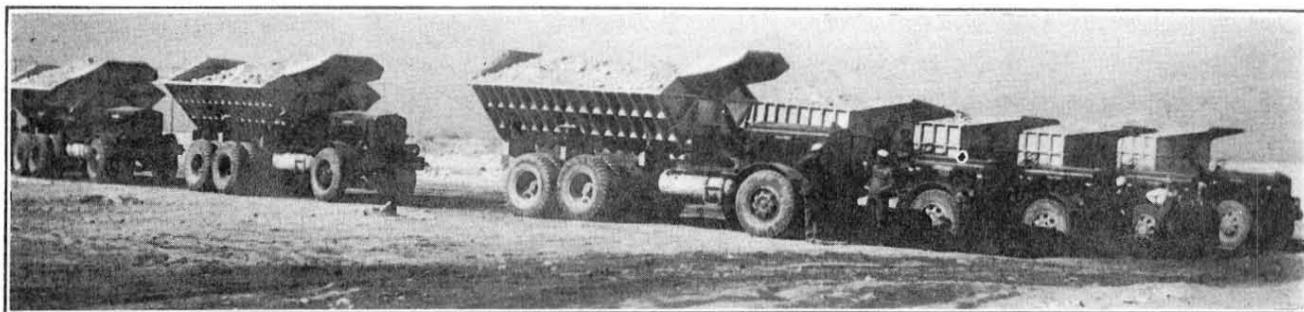
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## INDEX TO ADVERTISERS

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Acme Tank Mfg. Co.....  
159 So. Anderson St., Los Angeles  
Allison Steel Mfg. Co..... Page 38  
19th Ave. and Harrison, Phoenix  
Alloy Steel & Metals..... Page 13  
1862 E. 55th St., Los Angeles  
Alvo Nut & Bolt Co..... Page 40  
2314 E. 8th St., Los Angeles  
American Brattice Cloth Co..... Page 12  
Box 186, Warsaw, Ind.  
Box 483, Eagle Pass, Texas  
American Cyanamid Co.....  
30 Rockefeller Plaza, New York  
Azusa, California  
Box 1931, Sacramento, Calif.  
342 W. Lewis, Phoenix  
American Lumb. & Treat.....  
1031 S. Broadway, Los Angeles  
110 New Montgomery,  
San Francisco  
410 Southland Life Bldg., Dallas  
1651 McCormick Bldg., Chicago  
Amer. Pneumatic Tool Co.  
2145 Bay St., Los Angeles  
Amer. Smelt. & Ref. Co..... Page 32  
Box 1111, El Paso, Texas  
810 Valley Bank Bldg.  
Tucson, Arizona

American Zinc Lead and  
Smelting Co..... Page 34  
1630 Paul Brown Bldg., St. Louis  
Apache Powder Company.. Page 31  
Benson, Arizona  
411 W. Fifth St., Los Angeles  
Arizona Iron Works, Inc..... Page 40  
P. O. Box 575, Phoenix, Ariz.  
Arizona Printers, Inc..... Cover  
Home Bldrs. Bldg., Phoenix, Ariz.  
Atkins, Kroll & Co..... Page 26  
260 California St., San Francisco  
Baron Co., H. J..... Page 38  
805 Mills Bldg., El Paso  
Beach & Company..... Page 39  
131 E. Eighth St., Leadville, Colo.  
Bemis Bro. Bag Co.....  
601 S. 4th St., St. Louis, Mo.  
Berk & Co., Inc., F. W..... Page 31  
Coast Chemical Division  
55 New Montgomery St.  
San Francisco  
Bevis Machinery Co..... Page 43  
585 Santa Fe Ave., Los Angeles

Bethlehem Steel Co.....  
Bethlehem, Penna.  
Box 2057 Terminal Annex.  
Los Angeles  
20th & Ill. Sts., San Francisco  
Kearns Bldg., Salt Lake City  
Box 3147 Terminal Sta., Seattle  
3403 Brighton Blvd., Denver  
Bodinson Mfg. Co..... Page 12  
2401 Bayshore Blvd., San Francisco  
Boyles Bros. Drilling Co..... Page 38  
1321 S. Main St., Salt Lake City  
Braun Corporation..... Page 29  
2260 East 15th St., Los Angeles  
Brown-Bevis Equip. Co..... Page 41  
4900 Santa Fe Ave., Los Angeles  
325 E. Madison St., Phoenix  
Brown, Roy K..... Page 41  
604 Title & Trust Bldg., Phoenix  
Bucyrus-Erie Company.....  
South Milwaukee, Wis.  
390 Bayshore Blvd., San Francisco  
3408 First Ave. S., Seattle  
Bullard Co., E. D.....  
275 Eighth St., San Francisco  
1229 S. Olive St., Los Angeles  
440 E. 13th Ave., Denver  
Atlas Bldg., Salt Lake City

Business Mens Cirng House. Page 39  
Midland Savings Bldg., Denver  
Carboloy Co., Inc.....  
11195 E. 8 Mile Ave., Detroit  
Card Iron Works.....  
1601 Alcott St., Denver, Colo.  
Caterpillar Tractor Co.....  
San Leandro, Calif.  
Peoria, Illinois  
Chicago Pneumatic Tool Co..... Cover  
6 E. 44th St., New York City  
855 Bryant St., San Francisco  
655 Santa Fe Ave., Los Angeles  
119 W. 2nd South, Salt Lake  
426 Mills Bldg., El Paso  
1923 First Ave. So., Seattle  
1720 California St., Denver  
Cleveland Tungsten, Inc..... Page 39  
10200 Meech Ave., Cleveland, Ohio  
Coast Mfg. & Supply Co.....  
Livermore, Calif.  
Colorado Iron Works..... Page 10  
1624 Seventeenth St., Denver  
Colo. Iron & Equip. Corp..... Page 41  
1401 Osage, Denver, Colo.  
Columbian Steel Tank Co.....  
Dept. MJ Sta. A., Kansas City, Mo.