

tralia. When about 30 years old, Telfer came to the United States where he was employed as an engineer at copper properties in Arizona, including the Copper Queen mine at Bisbee. He then went to California, and worked for Charles Segerstrom in San Francisco and at Sonora, and for other interests at various California properties including the Atolia, Beebe, and Pine Tree mines. In 1927 he became associated with the Bradley Mining Company and served as accountant until 1939, when failing health forced his retirement.

JAMES F. SPIERS

JAMES F. SPIERS, superintendent of the Central Eureka Mining Company operating at Sutter Creek, California, died December 22, 1941, at the age of 72 years. He joined the company in 1927 as assistant superintendent and, upon the retirement of Albion S. Howe in 1934, was advanced to superintendent.

Spiers was a graduate of the University of California in the class of 1894, and was a member of the American Institute of Mining and Metallurgical Engineers. Prior to his connection with the Central Eureka company he was superintendent of the property of the Kennedy Mining and Milling Company at Jackson, California.

Under Spiers' direction, gold production at the Central Eureka mine has been increased and the property has become a leading producer of Amador County.

RAYMOND DENVER BUTTERFIELD

RAYMOND DENVER BUTTERFIELD, superintendent at the Reed quicksilver mine in Yolo County, California, for the Bradley Mining Company, died on December 4, 1941. Born in Denver, Colorado, in 1892, Butterfield began his mining career in that state and leased and operated in the Ward, San Juan, Gunnison, and Cripple Creek districts.

He started working underground at the age of 16 and made his first stake at the Vindicator mine when 19 years old. He later went to California and in 1933 became superintendent of the San Juan mine, a gold property operated by the Bradley company in Nevada County. Early in 1939 he was transferred to the Reed where he did valuable pioneering work in building a camp and reopening old workings.

D. B. PITTMAN

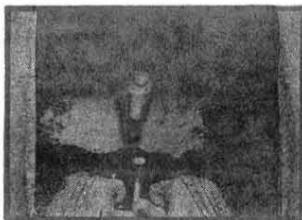
DALTON BEVERLY PITTMAN, superintendent of the Santa Ana mine of Cia. Real del Monte y Pachuca, Pachuca, Hidalgo, Mexico, was killed instantly December 9, 1941, when a loose high-tension cable in the mine struck him. He had been with the company since 1932 when he was employed as safety and ventilation engineer. In 1936 he was made mine superintendent of the Santa Ana unit of the company.

Pittman was born in Wilson, North Carolina, in 1898. He received his education at the Virginia Military Institute, the Carnegie Institute of Technology, and at the University of Arizona. He obtained the degree of B. S. in mining and metallurgy from the latter institution in 1922.

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After leaving school he worked in various capacities for Miami Copper Company, Old Dominion Company, Inspiration Copper Company, and the Calumet and Arizona smelter. In 1923 he went to Mexico where he was employed in the engineering department of Moctezuma Copper Company at Pilares de Nacozari, Sonora. He remained for eight years, the last four and a half of which he served as chief engineer in the mining department.

O. F. RISER

AFTER an illness of several months, O. F. Riser, 59, president and founder of the National Equipment Company of Salt Lake City, Utah, died December 25, 1941. Before starting the National Equipment concern in 1921, Riser was active in mining in Utah and New Mexico. He began his career after graduation from the University of Utah, when he took charge of the Mercur gold plant while D. C. Jackling was manager of Mercur Consolidated. Later he was employed in the original Copperton mill of the Utah Copper Company and was one of the foremen of the original Utah Copper power plant at Magna. Then he was employed in construction work at the International smelter at Tooele, Utah, and in 1911 he became general mill foreman at the Chino mines of the Nevada Consolidated Copper Corporation in New Mexico. After two years with the Manhattan Rubber Company as special mining representative, Riser returned to Chino as mill superintendent. Shortly afterwards he formed the National Equipment Company.

NIXON ANSWERS CHARGES AS TO THE BURNS TIN FINDINGS

ANOTHER chapter in the Oregon tin dispute appears in the current issue of The Ore-Bin, publication of the Oregon State Department of Geology and Mineral Industries. Earl K. Nixon, director of the department, is the author of an article in which he answers certain charges made in the December issue of the California Mining Journal by J. P. Hall, publisher. The subject under discussion is the Oregon department's connection with the Burns tin situation.

According to Nixon, "The California Mining Journal and its editor have gone off the 'deep end'—and misquoted us, and have accepted and published statements as news without, apparently, checking the origin or veracity of the statements; and in addition have maligned the U. S. Geological Survey, the U. S. Bureau of Mines, and other federal agencies, as well as the Oregon Department of Geology and Mineral Industries, accusing these groups of conniving with foreign tin monopolies in an effort to suppress development of domestic tin deposits. This latter accusation . . . in our opinion is unsound and untrue, 100 per cent misinformation."

Nixon further comments on specific charges made, denying the statement that his department has found "from 1 to 5 per cent tin in the Burns ore," . . . "that Oregon state officials 'take program' from those who want us to preserve democracy with British tin" . . . "that government mining authorities, both state and federal, found plenty of tin in the ore."

Nixon concludes by saying: "Mr. Hall appears to take the attitude that if it makes good reading, it is worth printing. This attitude could result in a great disservice to the mining industry."

USE OF WEST'S RESOURCES OF STRATEGIC MINERALS URGED

FOLLOWING a series of hearings in Washington and on the West Coast, members of the Military Affairs Committee of the Senate are asking for a more closely coordinated program by federal agencies charged with securing strategic materials so that this country may become more self-sufficient in its strategic metals supply for civilian as well as national defense industries.

"With war raging in both Pacific and Atlantic waters," said Senator Elbert D. Thomas of Utah, chairman of the U. S. Senate Military Affairs Sub-Committee investigating this matter, "it becomes absolutely imperative for this country to increase domestic production of strategic and critical minerals and products, including manganese, chromite, tungsten, mercury, antimony, copper, zinc, molybdenum, magnesium, and aluminum.

"Without these strategic materials, necessary steel and munitions cannot be manufactured. Normally, we secure them from approximately 30 nations widely scattered over the face of the earth. Many of them are now potential enemies, and all of them present difficult convoy problems in times of war. Without increased domestic production, the lack of these materials very well could become the real bottleneck in our war effort."

The senator added that facts put in evidence at the hearings by the Industrial West Foundation, a non-profit, fact-finding industrial service reporting on the resources of the 11 western states, amply justified the conviction that sufficient supplies of such raw materials may be found in these western states. George W. Malone, former state engineer of Nevada, director of the Industrial West Foundation, is serving as special consultant to the committee.

As a direct result of the hearings already held on the potential supplies and wartime usefulness of these strategic materials, the specifications of certain of the important minerals, notably manganese and chromite, have been rewritten and the price per unit adjusted; also, funds for "access roads to the source of raw materials" have been provided through an amendment written into the once-vetoed Highway Defense Act.

"It has been shown in these committee hearings that the necessary increased cost to pay American wages for processing of domestic materials over the price paid for foreign imports using exploited Asiatic and European labor does not unduly affect the cost of the finished product of steel, steel alloys, and munitions," said the Senator from Utah.

"Through such increased domestic production, it is believed that the difficult convoy problem can be confined to two materials, tin and rubber, since 95 per cent of the nickel supply of this country comes from Canada where there is no

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problem involved. In every other mineral and material where heavy imports now are necessary, we can either become self-sufficient or develop satisfactory substitutes."

Witnesses at the committee meeting where the program was worked out included the men charged with the purchase and stockpile program for the Metals Reserve Company and the OPM. Donald M. Nelson's priorities division, and Leon Henderson's price control department were represented at the hearing to assist in coordinating the work of securing an adequate supply of these materials. Senator Ed C. Johnson of Colorado is acting chairman and Senator Rufus C. Holman of Oregon presided at the meeting.

NEW ASSOCIATION REPLACES OLD UTAH CHAPTER OF AMC

THE Utah chapter of American Mining Congress was dissolved December 31, 1941, and has been succeeded by the Utah Metal Mine Operators Association, with offices in the Kearns Building, Salt Lake City, Utah. Former members of the Utah chapter have become members of the new association, which has acquired the other assets of the chapter and will serve the interests of mining and metallurgy in the state along the same general lines.

Officers of the new association are: W. J. O'Connor, president; F. S. Mulock, first vice-president; Gloyd M. Wiles, second vice-president; J. O. Elton, third vice-president; and A. G. Mackenzie, manager.

JAMES W. CREW WORKING OUT ORE TREATMENT FOR PLUMAS EUREKA

JAMES WATT CREW, superintendent of the Portola Corporation, Johnsville, Plumas County, California, is engaged in working out a treatment for the ore from the Plumas Eureka mine. The present milling plant, which has a capacity of 150 tons daily, is equipped for flotation, gravity concentration, and amalgamation. Development and rehabilitation work are continuing at the property and retimbering of the Mammoth tunnel is progressing.

Crew, who was educated at the Oklahoma Christian University, has had extensive and varied experience both in mining and contracting. For a time he was associated with the Jumbo mine at Jungo, Nevada, as metallurgist and assayer, and more recently was with the Ellen B. Mining Company of Nevada and Oregon. In 1941 he joined the staff of the Portola Corporation at Johnsville.

WORK ON METEORITE WILL BE RESUMED IN SPRING

DIAMOND drilling will be undertaken this spring in an effort to mine the large meteorite which forms the crater near the foot of Crestone Peak on Baca Grant south of Crestone, Colorado. An electromagnet will be used following the diamond drilling to bring fragments to the surface for examination. If the work is favorable at this stage, a tunnel will be started from outside the west rim of the crater in an attempt to mine the ore.

H. H. Nininger of 1955 Fairfax Street, Denver, who is experienced in this type of research, is directing the work and is assisted by Harry A. Aurand, 1315 Bellaire Street, Denver, consulting engineer, who located the meteor with a magnetometer. A water-well drill struck the meteorite, but could not penetrate the body. A more powerful drill was used and a few pieces of the material were brought to the surface by a magnet. These pieces were said to show nickel content.

Present work has been suspended, but will be resumed early in the spring, it is reported. Winter conditions around the crater made it impractical to continue for a few months.

NEW OFFICERS NAMED FOR SOUTHWEST ASSOCIATION

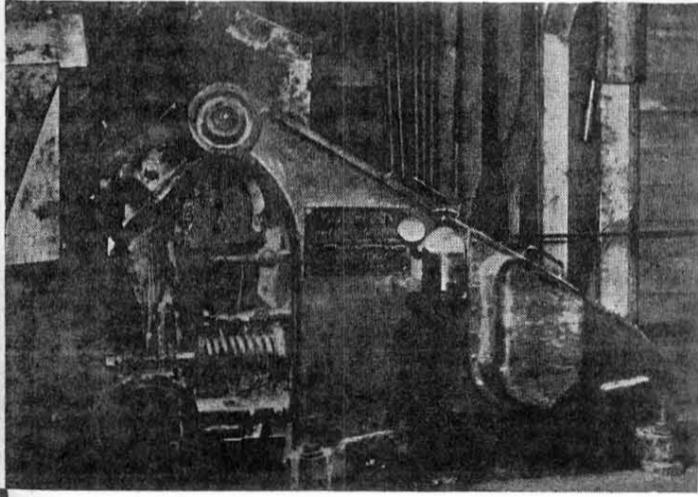
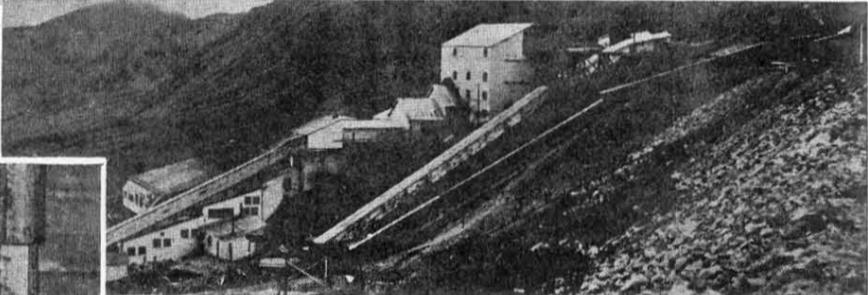
MINING Association of the Southwest, Los Angeles, reports the following officers for 1942: Howard Kegley, president; B. M. Snyder, vice-president; John Herman, second vice-president; and Victor J. Hayek, secretary-treasurer. Snyder was elected to fill the vacancy caused by the resignation of Robert Linton. New directors elected to the board include: J. Percy Hart, H. W. Howe, and M. N. Shaw.

The association's meeting on January 6 was devoted largely to a discussion of the new contracts for the purchase of chrome and manganese now being offered by Metals Reserve Company. The proposal that the American Mining Congress be petitioned to form a California chapter also was discussed.

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Alaska Pacific Consolidated Mine Gets Results With Kue-Ken

Mr. W. W. Stoll — general manager of the Alaska Pacific Consolidated Mining Co., says "we have sung the praises of the Kue-Ken Crusher to mining men in these parts for the past year . . . we are very well satisfied with its performance at our mine."



Mr. Stoll says further . . . "we are handling about 40 tons of coarse quartz in about 4 hours and could easily double that quantity without trouble." This ore is crushed to a minus 3/4 inch. Above is the Mine and at the left is a close up of the Kue-Ken Crusher on the job.

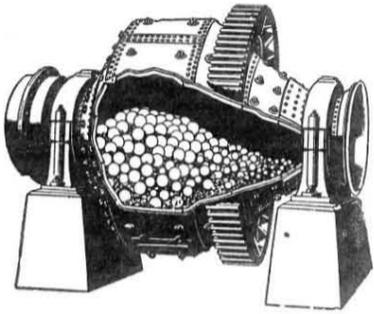
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Mohave County, near Oatman, Arizona. A. E. Laitem is general manager; William F. Ames, general superintendent; Charles Broyles, mill superintendent; and Homer Linderman, master mechanic. All are addressed at Oatman. Robert A. Elgin of Kingman, Arizona, is consulting engineer.



The California Division of Water Resources, Sacramento, California, has issued permits to divert water for mining use to the following persons: Theodosia F. Caldwell, Orleans, California, for 12 cubic feet per second from Whitmore Creek at an estimated cost of \$3,500; Charles D. Snyder, Trona, for three cubic feet per second from Snow Canyon; and to Roscoe Williams of Darwin, 10,771 gallons per day from two springs in Lost Cabin Gulch. Other California mine operators who have filed applications for water permits include: Joseph Helfenstein, Forest Glen; J. W. Qualls, Toll House; and the Lake Tahoe Gold Mining Company, Box 677, Reno, Nevada.

The Rawhide mine near Jamestown, California, will be sold at auction at 10 a. m., January 19, at the office of James G. White, county tax collector, Sonora, California. The minimum bid which will be considered is \$2,500 plus costs. Included in the sale are the mill building and machinery, hoist building and headframe, dwelling, boarding house, office, barn, and 17 other buildings.

Completion of the second Gould rotary furnace and condensing system at the Klau mine near Paso Robles, California, has more than doubled furnace capacity. H. W. Gould and Company, Mills Building, San Francisco, California, operates the property and has expended over \$50,000 in adding the second furnace unit and in sinking a new shaft. The 45-degree inclined shaft will be sunk 500 feet, making it possible to work 100 feet below any of the old mine workings. The present furnace capacity will approximate 100 tons per 24 hours. Considerable tonnages have been developed since the property was taken over by the Gould interests in 1934. B. A. Gould of San Francisco is general manager, and John Judy is mine superintendent. About 45 men are employed.

A special meeting of stockholders was called for December 23, 1941, to consider and act upon the proposed liquidation and dissolution and upon the proposed plan of liquidation of the White Knob Copper and Development Company, Ltd., and the Argonaut Consolidated Mining Company. The board of directors has approved the proposed liquidation and dissolution as well as the proposed plan of liquidation of both companies. The former company owns 240,000 shares of stock in Argonaut Consolidated Mining Company, which operates mining property at Jackson, California, as the Argonaut Mining Company, Ltd. In accordance with the liquidation plan, the

board of directors shall convert into cash all property and assets of the Argonaut Consolidated Mining Company other than the stock of Argonaut Mining Company, Ltd. The shares of stock of that company would be distributed among stockholders of Argonaut Consolidated pro rata. White Knob Copper and Development Company, Ltd., would receive approximately 68,000 shares of stock of Argonaut Mining Company, Ltd., stock to be distributed to the preferred stockholders pro rata. Gerard C. Smith, 251 West Fifty-seventh Street, New York, New York, is president of both companies.

A 100-ton ball mill is being constructed at the Eagle's Nest mine of the Long Valley Mining and Milling Company, Fargo F. Rose, general manager, Pine Valley, California. While intended primarily to reduce the gold-bearing quartz from the Long Valley mine, the plant also will handle custom ore in the Mountain Empire district. According to Rose, this service will eliminate a 304-mile haul by truck to Mojave, and make possible the opening of a number of low-grade ore deposits in the section.

The Aceta Mining Company, 80 Wall Street, New York, New York, has taken a 60-day option on 800 acres in Lewis Creek Valley east of Lindsay, California. Diamond drilling will be started to determine the extent of the manganese content. Louis Gill, Porterville, California, is owner of the ground.

Two seven-inch monitors are scheduled to go into operation during January at the Relief Hill hydraulic mine operated by Western Gold, Inc., near North Bloomfield in Nevada County, California, and more units will be brought into use as the water supply is increased by winter storms. Water is brought 21 miles from Poorman's Creek near Graniteville, California. When in full operation, the company handles approximately 4,000 cubic yards of gravel daily. 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, California.

According to reports, the tungsten-gold mill at the Atolia Rand placers, Atolia, California, is being dismantled by Morse Brothers Machinery Company, Box 1708, Denver, Colorado, which recently purchased the equipment from the California Scheelite Corporation. The Atolia Rand placers were purchased by California Scheelite Corporation at a reported price of \$431,000 several months ago. Property included in the transaction covers from 50 to 60 claims comprising several thousand acres. Molybdenum Corporation of America, 500 Fifth Avenue, New York, New York, was the former owner of the property.

The Avawatz Crown mines owned by United States Metals Corporation, 510 West Sixth Street, Los Angeles, California, has been taken over under a long-term lease by Lucien L. Patrick, 251 South Olive Street, Los Angeles, California. Patrick represents eastern capital, and work

on the installation of mining and reduction equipment is scheduled to start shortly after the first of the year. Previous development of the Avawatz group was undertaken 30 years ago, according to the present owners, but was suspended because of the difficult transportation facilities at that time. Four miles of mountain road are now under construction.

Ross Taylor, civil engineer, and associates A. J. Just, A. J. Modglin, and W. H. Pike, all of Downieville, California, will operate the Grass Flat hydraulic mine during the coming season. About four miles of ditches have been cleaned out and pipe has been laid into the pit. Water will be delivered under a head of 240 feet.

Electricity has been brought to the Carino-Hewer Lease, also known as the Blue Quartz mine, owned by the city of Redding, California, and an electric hoist is being installed in place of the gasoline one previously used. A new electric pump, handling 300 gallons of water a minute, has been placed in the mine shaft. The mill, also electrically operated, has been overhauled and improvement made in the saving of gold values. With the addition of a four-cell flotation unit, tailings have been reduced from \$6 to \$1.25 a ton milled. Eight-five per cent of the gold values in the ore are recovered by amalgamation, according to the operators. Ore is mined from a vein varying from two feet to six feet in width. Most of the drilling is done with hand augers, and only occasionally is the compressor needed. Stopes are all square set, and considerable reserve tonnage has been developed. R. H. Hewer and August Carino, Box 388, Redding, are leasing the mine.

Winter weather has caused a suspension of exploratory work at the Adamson tungsten claims adjoining the Pine Creek mine of the United States Vanadium Corporation, 21 miles from Bishop, California. Diamond drilling has been in progress under the supervision of Homer C. Neal of Nevada City, California. Work is being financed by Panaminas, Inc., a New York concern, which has an option on the property from D. B. Adamson, owner. Two buildings have been constructed on the ground, and work will be resumed as soon as the weather permits.

The Panoche Quicksilver Mining Company, P. D. Burt, president and general manager, Mills Building, San Francisco, California, is reported to have given up last summer its option on the Valley View mine about 42 miles south of Hollister, California. The mine, which is owned by Louis Sciochetti and partners of Paicines, California, has been closed since, although mining interests are said to be considering taking it over. Sciochetti and associates have installed a retort on another cinnabar property northwest of the Valley View, and satisfactory operation of the plant is reported.

Mining machinery at the Oaks and Reese mine in the Hunters Valley district near Hornitos, California, recently was sold at auction. Ralph Bender, Hornitos, was consulting engineer for the former operators of the property.

The Golden Storm mine at Westpoint, Calaveras County, California, has been leased to Lester Lambkin, who is stockpiling ore. R. C. Green is owner of the mine.

The Little Gulch mine near Westpoint, California, has been reopened, and development work is in progress on the 100-foot level under the direction of William Anderson, superintendent. Carroll B. Evans, Westpoint, is owner of the mine, which is being operated by Los Angeles interests.

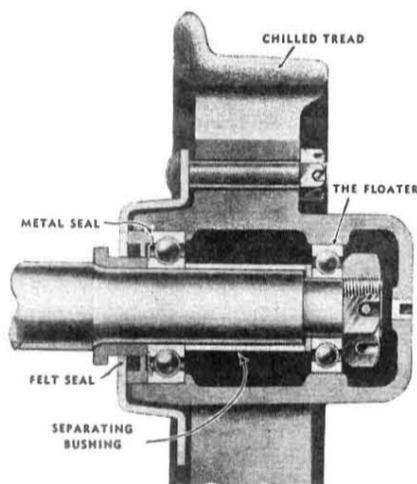
Operations are scheduled to be started during January at the property of the Antietam Gold Mining Company, G. H. Mc-

Farland, president, 10525 Commerce Avenue, Tujunga, California. Drifting will be started on the 65-foot level from the Blue Cat shaft, along with other development work. Values are in gold and silver. The company is leasing the property, located near Kernville, California, from B. D. Sawyer, 1031 South Central, Glendale, California, and associates. Sawyer acts as general superintendent of operations.

Preparations are under way to sell the equipment at the Bullion mine of Idaho Maryland Mines Corporation, Albert Crase, general manager, Grass Valley, California. Only maintenance crews have been kept at

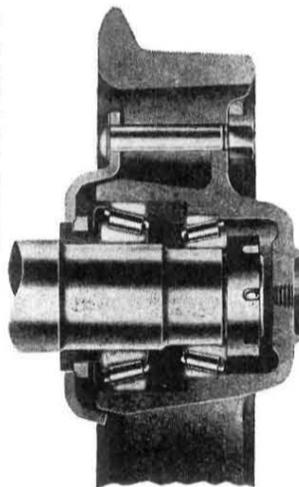
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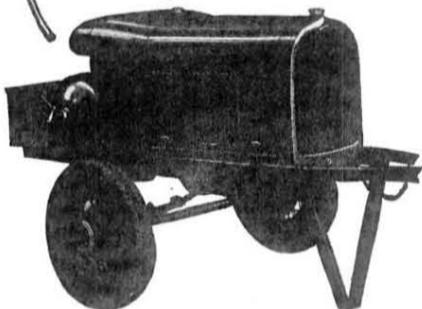
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the mine since its closure during the mine strike last May.

The **Lucky Strike** quicksilver mine in the Panoche district of San Benito County, California, has been taken over by C. E. McIntyre, Box 176, Hollister, California. A Hewitt compressor has been installed preparatory to starting development. The mine is said to have been a good producer in the past.

A dredge is being dismantled at Cottonwood, California, and will be reconstructed at a location near Randsburg by **Rand Gold Dredging Associates**. A large scraper is moving dirt at the site and two 900-foot wells have been drilled to provide water for the project. A third well is nearing completion. Newton Cleaveland, 351 California Street, San Francisco, California, is one of the principals of the operating company.

Preliminary work has been started at the properties of the **Calaveras Copper Company**, Copperopolis, Calaveras County, California. Dewatering of the northern section of the mine is in progress, which will be followed by testing of known ore bodies and prospecting for new. H. E. Bush, consulting mining engineer, is in charge locally. His associates have an option on all of the property with a view to operation if results of the present tests prove satisfactory. The copper mine was worked during the first World War and a 500-foot vertical shaft was sunk.

Following several months' prospecting, mining and milling operations will be started at the **Corn Meal** mine of the Adams and Page property near Westpoint, Calaveras County, California. The operators are purchasing a five-stamp mill and a compressor for immediate installation.

A crew of 40 men is employed at the recently reopened **Kleinsurge** chrome mine 32 miles southwest of Red Bluff, California. A road has been completed to the mine, which had not been worked since the last World War. At that time it is said that daily shipments of 500 tons were made. William Recknagel, Red Bluff, has been looking after the property.

Pacific Sulphur Company, 433 South Spring Street, Los Angeles, California, will construct a dragline dredge on holdings comprising approximately 1,005 acres on the Trinity River. The company formerly operated on the Trinity River at Del Loma, California, below the present site. Sufficient commercial gravel for several years' work is said to be available at the new location. Malcolm L. Benoist, Big Bar, California, is superintendent in charge of operations for Pacific Sulphur.

Peckham Hill Gold Mines, Inc., G. B. Burnham, president, 214 Lyon Building, Reno, Nevada, is developing a drift mine in a lava-covered river channel near McKeon, California. The main 3,660-foot drainage tunnel has been completed and will drain water from the channel which is buried under 200 to 300 feet of lava. It is planned to install a washing plant to recover the gold from the river gravels. A crew of five men is employed at the mine

which is under lease from the **Mayflower Gravel Mining Company**. Quenton Brewer of Auburn, California, acts as consulting engineer for the Peckham Hill company.

Ruby Mines is employing 22 men at its drift mine at Goodyears Bar, California, and producing 90 tons daily of gold ore. Gold is recovered by gravity concentration in a Huelsdonk washer of 600 tons capacity. The second exit from the Lowry shaft was completed November 6. This shaft is three miles from the main Ruby plant and is 500 feet higher in elevation. All ventilation blowers have been shut down and natural draft is being used. L. L. Huelsdonk, Goodyears Bar, is general superintendent. A. R. Hinton, Goodyears Bar, is master mechanic and William Reed, Jr., Downieville, is mine foreman. Bert C. Austin, 410 Balfour Building, San Francisco, is consulting engineer.

Wyandotte Gold Dredging Company, N. M. Gibson, general manager, Box 907, Grass Valley, California, suspended active mining operations in June at the Perrin & Pingree placers, and since then has been exploring and testing for additional properties. The company's equipment includes a dragline dredge with trommel, Pan-American jigs, and Titan amalgamator, which has been handling 3,000 cubic yards of gravel daily. A crew of 14 men is employed. O. M. Warren is general superintendent; R. H. Schultz, chief field engineer; Beldon Smith, master mechanic; and Les Caughey, chief electrician. All are addressed at Box 228, Nevada City, California.

The **Lind Mining Company**, P. R. Bradley, Jr., president and general manager, Bear Valley, California, is reopening the old Eureka or Quartz Mountain mine which belongs to its Washington group and adjoins the Doss mine five miles from the Jenny Lind shaft. Ore from the Eureka will be hauled to the Jenny Lind mill. The company is mining 90 tons of gold ore daily from the Jenny Lind property, and this material is treated in the 150-ton flotation mill. The Washington property was taken over in March of 1940 and the Jenny Lind shaft rehabilitated and unwatered by January of this year. The mill was built this spring and started in July. Fifteen men are employed in the mine and seven in the mill. The property is located near Hornitos in Mariposa County, California, and local officials include Joel Kiviaho, mine superintendent; Barney Lee, mill superintendent; and Man-oah Pate, chief mine engineer. Francis Frederick, 926 Crocker Building, San Francisco, is consulting geologist; F. A. Hammersmith, 920 Crocker Building, purchasing agent; and R. V. Joste, 1022 Crocker Building, chief clerk.

Burton Brothers have sunk an inclined shaft to 400 feet where a level is being driven at the Davenport claim of the Ruth mine near Trona, California. A vertical shaft being sunk on the Mohawk claim is down 150 feet, and preparations are being made to sink a winze from the fourth level of the Ruth mine. A 150-foot headframe and 100-ton ore bin have been constructed and the new 150-ton mill is in operation handling 100 tons of ore from the Ruth

and Davenport mines and the Ruth glory hole. A crew of 45 men is employed in the mine and four in the mill. The company is comprised of H. Clifford Burton and Cecil F. Burton, Rosamond, California. A. H. Johnson is general superintendent; Herb Shumake is mine superintendent; and C. D. Bobbitt, chief chemist. All are addressed at Trona. George McNamee, Rosamond, is purchasing agent.

The **Newmont Mining Company** is employing a small crew of men in developing the **Sheba** mine near Happy Camp, Siskiyou County, California. The Sheba, an extension of the Buzzard Hill mine, contains gossan overlying copper ore. Hans E. Bokkin is in charge of the work. Peter Grant and Alfred Effman of Happy Camp are owners of the Sheba.

Hall Livingston of Auburn, California, has leased the **Julian** mine about one-half mile west of Newcastle, California. He plans to begin work on an outcrop at first instead of reopening old workings. Livingston operates the **TWA** mine one mile from Auburn and will mill ore from the Julian in the TWA plant, consisting of a 50-ton rod mill and four-cell flotation unit. He recently purchased equipment at the Pyramid mine in El Dorado County. Paul Claiborne of Auburn owns the Julian.

The **Crow Creek Dredging Company** is operating a dragline dredge near Redding, California, and employing eight men. Hungarian riffles and mercury are used in recovery of the gold values. The company is a partnership consisting of Cyril Thomas, Box 46, Natoma, California; Clair Hill, Box 558, Redding; and Fred Anderson, Box 161, Cottonwood, California. Anderson acts as general superintendent.

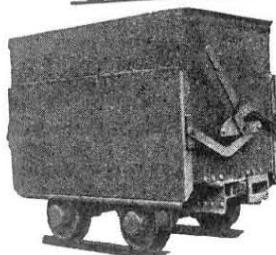
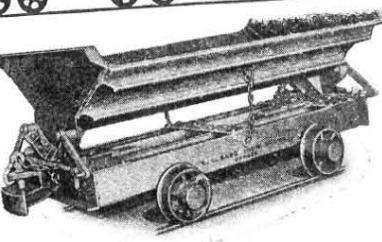
Twenty men are employed at the **Morning Star** mine north of Cima, California, in blocking out gold ore. The mine is under lease to Erle P. Halliburton, Inc., 1709 West Eighth Street, Los Angeles, California, from John B. Mighton, Cima, and Howard E. Brown, owners. Officials at Cima include H. V. Hughes, general manager and purchasing agent; J. L. Strawn, mine superintendent; and D. Kemple, master mechanic.

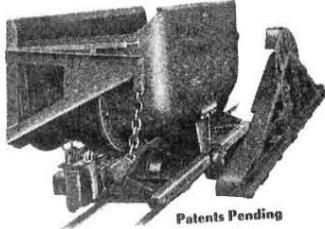
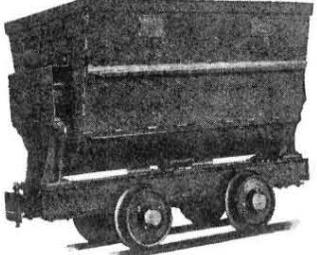
Gold ore is being mined and trucked to the **American Smelting and Refining Company** smelter at Selby, California, from the **Sur-Nuf** mine near Dobbins, California. Four men are employed under the direction of A. D. Hinton. The mine is owned and operated by the Hinton brothers, A. D. and H. P., of Dobbins, California.

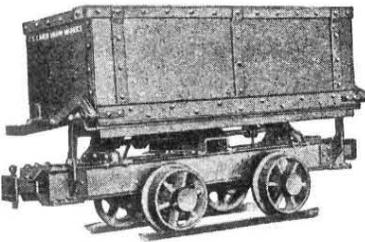
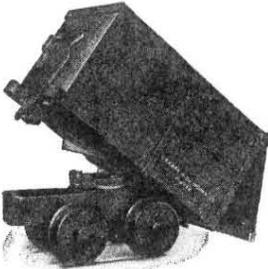
K. R. Nutting Dredging Company, headed by K. R. Nutting, Box 728, Salinas, California, has obtained leases on property along Silver Creek below the New Idria quicksilver mine, where it will work on mine tailings and native quicksilver. The company also is active in dredging in Oregon.

The **Indian Hill** gravel mine near Camp-tonville, California, will be worked this winter by J. M. Harper, Jr. Mining will be conducted as a hydraulic operation, and debris is stored behind Bullards Bar Dam. Harper has installed three jigs and a plant for treating black sand. A gold titanium concentrate will be produced.

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Publications covering additional minerals are being released at from one to four a month, and copies may be obtained at the offices of the Division of Mines, Ferry Building, San Francisco; State Building, Los Angeles; State Office Building, Sacramento; at the Chamber of Commerce, Redding; or will be mailed from the San Francisco office on receipt of postage in the amount of 3 cents a copy.

PLANS TO BUILD THREE NEW PERLITE PLANTS ANNOUNCED

LEE BOYER of Superior, Arizona, has announced that arrangements have been made for construction of a 100-ton perlite plant at Los Angeles, a 100-ton plant near Phoenix, and a 50-ton plant at Las Vegas. All three plants are to be supplied with Arizona ore, he states.

Plans for the erection of the plants were made after extensive experiments were conducted relative to the insulating qualities of perlite, a volcanic glass, which occurs abundantly in Arizona. The tests that have been made indicate that loosely compacted and expanded perlite has insulating qualities superior to many products now on the market; vermine and termites cannot exist in it, because it is free from inorganic impurities; various binders can be used to make it adhere to wood, paper, or metal; it can be used also as a water filter.

Boyer reports that further research with perlite has developed an improved product which weighs 4 pounds 12 ounces per cubic foot and is 11¹/₂ per cent lighter than an equal volume of fully expanded vermiculite. Although experiments on the new product have not been completed it is expected that they will show that heat conductivity has been greatly lowered.

Another recent test indicates that when "popped" and then ground to about 40 mesh perlite should be useful in the insecticide field. Its buoyancy and porosity permit it to act as the vehicle for carrying the poisons necessary for destruction of insects.

ALL CLAIM OWNERS IN SERVICE EXEMPTED FROM ANNUAL LABOR

IT IS noteworthy at this time to review the Soldiers and Sailors Civil Act, passed in October of 1940, which exempts men in uniform from annual labor assessment on mining claims. The law provides that any man in service who owns a whole or part of a mineral claim is not subject to the annual labor requirements on that claim during his period of service, or until six months after the termination of such service, or during any period of hospitalization because of wounds or disability incurred in line of duty.

In order to obtain the benefit the claimant of any mining location shall, before the expiration of the assessment year during which he enters military service, file or cause to be filed in the office where the location notice or certificate is recorded a notice that he has entered such service and desires to hold his mining claim.

VENTILATION SYSTEM SPEEDS CONTINENTAL DIVIDE TUNNEL

By H. R. Wallrath*

SIX FEET per day have been added to the push in the east portal of the 13-mile Continental Divide tunnel, being driven by the S. S. Magoffin Company at Estes Park, Colorado, since the installation of what is believed to be the most efficient and effective method of tunnel ventilation ever devised.

The ventilating system consists of heavy-duty blowers powered by General Electric 2200-volt, 100-horsepower motors, connected to the blowers by means of V belts. The motors are handled by G-E full-voltage, automatic, reversing control. As the work progresses, the blowers are being installed every 9,000 feet along the tunnel.

The installation of this ventilating system has cut 20 minutes from the time needed for each drilling cycle. So effective is the system that the men working in the heading can now return to their posts immediately after shots are fired, instead of waiting for the smoke to clear.

In addition to removing smoke from the bore, the ventilating system can be regulated to overcome the fog usually prevalent in a tunnel because of the difference in the temperature of the air at the portal of the tunnel and at the heading.

After holes have been drilled by the crew in preparation for blasting, the fans are shut down while powder is placed in the holes. The charge is then fired electrically. Immediately after the shot is fired, the operator in the compressor house at the portal of the tunnel—from where the blowers are controlled—is notified by telephone and the fans are started to exhaust the bad air from the tunnel.

Twenty seconds after the blower in the heading of the tunnel starts, the next blower starts, and so on down the tunnel. This allows sufficient time for the air to reach each blower, thereby eliminating the possibility of a vacuum being created in the duct with a resulting inrush of air which might damage the blower or duct.

The fans exhaust for approximately 20 minutes, sucking all the powder smoke from the heading, and then are reversed to blow fresh air into the tunnel. After the "reverse" push-button is pressed, the motor in the portal of the tunnel delays one minute and then starts up in the opposite direction. This allows sufficient time for the motor to come to a rest before changing direction; plugging is thus prevented.

Twenty seconds later, the second blower picks up; the remaining motors start at 20-second intervals. The fans blow fresh air into the tunnel for about 30 minutes and then are again reversed. Exhausting is continued until the heading crew is ready to shoot, when the fans are shut off and the procedure repeated. This system requires only one pipe to supply fresh air and to exhaust bad air, and is more economical than a double-blower system.

*Industrial Department, General Electric Company, Schenectady, New York.

by the Inspiration, Copper Queen, Nevada Consolidated (Ray mine), United Verde, Miami, Magma, Morenci, and Denn properties; these nine mines accounted for about 657,000,000 pounds compared with 555,242,552 pounds in 1940, or 99 per cent of the state total.

The Globe (Inspiration-Miami) district remained the chief copper-producing district in Arizona, its output increasing from 140,811,637 pounds in 1940 to about 180,800,000 pounds in 1941; the Ajo district was second with an increase from 103,131,115 to 133,100,000 pounds; the Warren district ranked third with a decrease from 110,508,735 to about 108,500,000 pounds; and the Mineral Creek (Ray) district ranked fourth with an increase from 63,458,637 to about 84,000,000 pounds. The output from the Verde district increased from 74,459,646 to 80,500,000 pounds, that from the Pioneer (Superior) district from 36,894,381 to about 38,400,000 pounds, and that from the Copper Mountain (Morenci) district from 27,005,681 to about 31,500,000 pounds.

There were five copper smelters active in Arizona in 1941—at Hayden, Clarkdale, Douglas, Superior, and Miami; the total rated capacity of these is 3,930,000 tons of charge per year. At the close of the year the new 1,200-ton daily capacity smelter at Morenci had not been completed, but completion was expected the early part of 1942. The only active lead smelter in Arizona in 1941 was the 20-ton plant of Mammoth-St. Anthony, Ltd., at Tiger.

THE output (32,550,000 pounds) of lead in Arizona in 1941 was the largest in the history of the state and an increase of 23 per cent over 1940. This increase was due chiefly to steady operations at the Trench-Flux, Tennessee-Schuylkill, and Mammoth-St. Anthony mines and to the large output of zinc-lead ore from the Iron King, Denn, and Duquesne properties. The American Smelting and Refining Company operated the Trench-Flux group and its 200-ton concentration mill near Patagonia throughout the year and the property was the largest producer of lead in Arizona. It was followed by the Tennessee-Schuylkill, Mammoth-St. Anthony, Denn, Iron King, and Hillside properties. About 77 per cent of the lead output in 1941 was recovered from zinc-lead ore and the rest largely from gold ore and lead ore. The 20-ton lead smelter at Tiger (formerly Mammoth), owned by Mammoth-St. Anthony, Ltd., was operated continuously in 1941 on concentrates (containing gold, silver, lead, molybdenum, and vanadium) produced from Mammoth-St. Anthony and New Year-Mohawk ores.

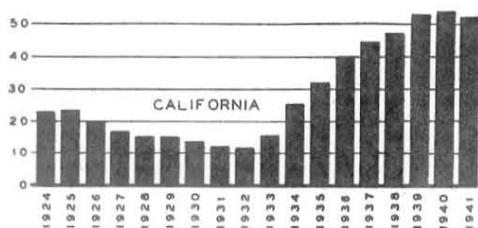
The output (32,000,000 pounds) of zinc in Arizona in 1941 was the largest in the history of the state and resulted from increased activity at mines producing zinc-lead ore. Nearly all the zinc produced in 1941 came from seven properties—the Magma at Superior, Trench-Flux near Patagonia, Tennessee-Schuylkill at Chloride, Denn near Bisbee, Iron King at Humboldt, Duquesne near Patagonia, and Hillside near

Hillside. All the zinc concentrate produced from zinc-lead ore and zinc-copper ore was shipped to Amarillo, Texas.

The output of ore and old tailings in Arizona in 1941 was about 25,050,000 tons, an increase of 3,477,800 tons from 1940. Most of the gain was in copper ore from the Ajo, Globe-Miami, Copper Mountain (Morenci), Ray, Verde, and Warren districts; the total output of copper ore increased from 20,284,826 to about 23,700,000 tons. There was also an increase in output of zinc-lead ore and zinc-copper ore, but a decrease in siliceous gold ore and gold-silver ore.

CALIFORNIA

MINE PRODUCTION OF GOLD, SILVER, COPPER, LEAD, AND ZINC IN CALIFORNIA, 1924-1941, IN MILLIONS OF DOLLARS



THE quantity and value of gold recovered from California ores, old tailings, and gravels decreased in 1941 after an uninterrupted rise begun in 1930. Outputs of silver and copper also declined in both quantity and value, but those of lead and zinc, though small, were both above the 1940 levels.

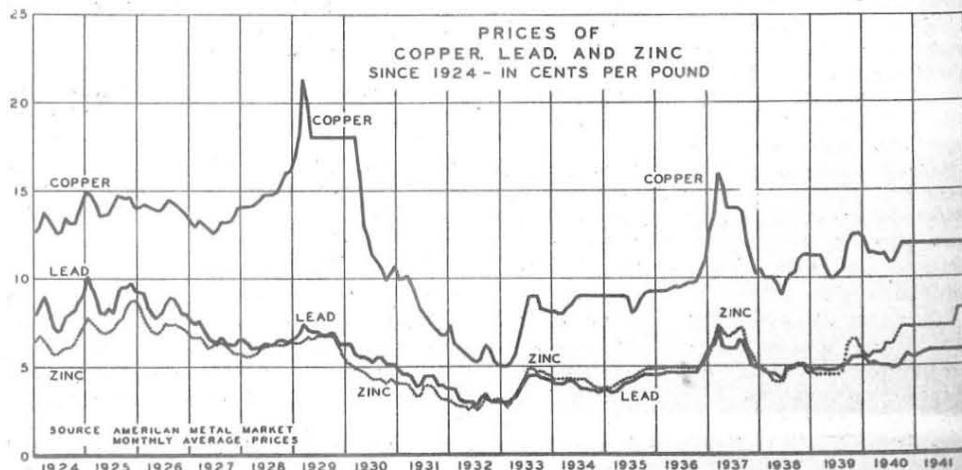
Preliminary figures show gold production in 1941 as 1,411,800 fine ounces, silver 2,147,000 fine ounces, copper, 7,810,000 pounds, lead 6,610,000 pounds, and zinc 780,000 pounds—valued in all at \$52,282,966. These figures compare with a production in 1940 of 1,455,671 ounces of gold, 2,359,776 ounces of silver, 12,876,000 pounds of copper, 3,544,000 pounds of lead, and 158,000 pounds of zinc—valued in all at \$54,268,690.

Despite a 3-per cent decrease in gold output in 1941, compared with 1940, California continued to be the leading gold-producing state. Comparison of the total production of the 25 leading gold producers in California in 1940 with prelim-

inary figures for the same companies for 1941 shows an aggregate change of less than one-tenth of 1 per cent. It is clear, therefore, that the decline in California gold production was borne by the smaller producers. Evidence substantiating this deduction is furnished by custom mill operators, who report that total monthly receipts from small operators late in 1941 were, in most instances, far below 1940 averages. Rising wages, the migration of miners to defense jobs, rising costs of supplies and materials and difficulties in obtaining them, higher taxes, and a fixed price for gold (principal metal produced in California) were all factors likely to continue their adverse effect on California gold mining.

The Grass Valley-Nevada City district in Nevada County continued in 1941 to be the center of the gold-mining industry in California. The Idaho Maryland Mines Corporation, working the Idaho Maryland-Brunswick group in the Grass Valley-Nevada City district, ranked first among California gold producers for the third successive year. Its neighbor the Empire Star Mines Company, Ltd., (Newmont affiliate), operator of the Empire, Pennsylvania, North Star, and Murchie mines in the Grass Valley-Nevada City district, the Zeibrigh in Bear Valley near Emigrant Gap, and the Pennsylvania mine at Browns Valley in Yuba County, remained in second place. Large output also was recorded by the Lava Cap Gold Mining Corporation and by Cooley Butler from the Golden Center mine.

In Eldorado, Amador, Calaveras, Tuolumne, and Mariposa counties the deep mines of the Mother Lode included several outstanding gold producers. Production of the Middle Fork Gold Mining Company at the Sliger mine near the north end of the Mother Lode had the largest proportionate increase among the leading 25 mines in the state in 1941 compared with 1940; this mine was the outstanding lode property in Eldorado County. In Amador County the Central Eureka Mining Company increased its production compared with 1940 and was the largest gold producer in the county. The Argonaut Mining Company, Ltd., operated the Argonaut mine at Jackson and treated old tailings at the Plymouth mine at Plymouth; income from the tailings operation was used to



HOLE
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IN PAGE

reopen the Empire shaft and other old workings at the Plymouth mine. Among the deep mines on the Mother Lode in Calaveras County the Carson Hill Gold Mining Corporation at Melones was the outstanding gold producer. In the East Belt district of Calaveras County the Sheepranch mine, operated by the St. Joseph Lead Company, was the largest gold producer although its production declined substantially in 1941 compared with 1940. Farther south on the Mother Lode in Tuolumne and Mariposa counties a number of small gold producers were active; chief among them was the Pacific Mining Company at Bear Valley in Mariposa County.

In southern California the Mojave and Randsburg districts, in Kern County, continued in 1941 to be the leading gold producers. In the Mojave district the chief producers were the Golden Queen Mining Company, the Cactus Mines Company, and Burton Bros., Inc. Burton Bros., Inc., and the Golden Queen Mining Company each conducted a large custom mill business. In the Randsburg district the Anglo American Mining Corporation confined its activities to the treatment of old tailings.

During 1941 the Mineral Reduction Company in the Blind Springs district, Mono County, continued its custom-mill business, started in 1939. In the Alleghany district, Sierra County, Original Sixteen to One Mine, Inc., was the leading producer.

In 1940, 48 per cent of the gold produced in California came from placer mines and the larger part of the placer output was recovered by connected-bucket dredges. A survey of the situation in 1941 indicates that placer mining continued in importance. In Sacramento County the Natomas Company, Capital Dredging Company, General Dredging Corporation, Hoosier Gulch Placers, Humphreys Gold Corporation, and Cosumnes Gold Dredging Company were the leading producers. Connected-bucket dredging, by Yuba Consolidated Gold Fields in Yuba County made this company one of the state's leading gold producers; the company also operated dredges in Butte, Merced, and Siskiyou counties. In the Snelling dredging area in Merced County, in addition to Yuba Consolidated Gold Fields, the Merced Dredging Company, Snelling Gold Dredging Com-

pany, and San Joaquin Mining Company were the leading producers. The La Grange Gold Dredging Company was the principal gold producer in Stanislaus County.

During 1940 in California, 198 properties were worked by 106 dragline dredges. A preliminary survey of the dragline-dredge industry in 1941 indicates that the rapid expansion period for the industry is coming to a close; the trend, however, continued to be toward larger units and more frequent moves.

Despite a 9-per cent decline in output of silver in California in 1941 compared with 1940, this metal continued to maintain its place as second to gold in value among the five metals. The principal center of silver production was the Mojave district in Kern County, where the Cactus Mines Company and the Golden Queen Mining Company were the leading producers. In the Grass Valley-Nevada City district, the Lava Cap Gold Mining Corporation, Empire Star Mines Company, Ltd., and Idaho Maryland Mines Corporation produced substantial quantities of by-product silver from gold-mining operations. The only important mine where silver was the principal product—the Grigsby (Palisade) mine in the Calistoga district, Napa County, operated by the Graham Loftus Oil Corporation — suspended operations during 1941.

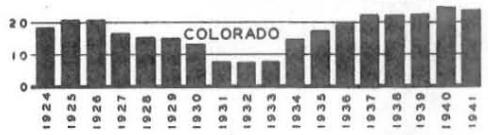
In recent years production of copper in California has come very largely from the Walker mine in the Genesee district, Plumas County; this property, operated by the Walker Mining Company (affiliate of the Anaconda Copper Mining Company), suspended operations in November. As a result, California was left without copper output except as a by-product of operations for other metals.

The output of lead in California has been very small in recent years, but developments at the properties of Shoshone Mines, Inc., in the Resting Springs district, Inyo County, not only increases California's production substantially over 1940 but gave promise of continued expansion.

Zinc production in California, which has been negligible in recent years, expanded in 1941. Most of the output was carbonate ore, much of which was shipped to the Pacific Zinc Oxide Company for the manufacture of zinc oxide.

COLORADO

MINE PRODUCTION OF GOLD, SILVER, COPPER, LEAD, AND ZINC IN COLORADO, 1924-1941, IN MILLIONS OF DOLLARS



COLORADO mines in 1941 yielded gold, silver, copper, lead and zinc valued at \$23,716,115, a decrease of 2 per cent from 1940. Lower output of silver and copper was responsible for this decrease; gold, lead, and zinc output increased. Production in 1941 (in terms of recoverable metals) was 377,503 fine ounces of gold, 7,234,487 fine ounces of silver, 13,002,000 pounds of copper, 25,214,000 pounds of lead, and 31,918,000 pounds of zinc.

These figures compare with an output in 1940 of 367,336 ounces of gold, 9,710,709 ounces of silver, 24,304,000 pounds of copper, 22,952,000 pounds of lead, and 10,120,000 pounds of zinc, with a total value of \$24,293,665.

The general increase in 1941 in gold, lead, and zinc production can be attributed to the increased placer operations in Park County for gold and the bringing into production of the zinc-lead ore bodies of the Eagle mine at Gilman for zinc and lead.

The gross value of production in Boulder County was slightly lower in 1941 than in 1940, and the number of producing mines was less. The Boulder Ore Sampler was idle, and no custom mills were operated in the county in 1941. Ores and concentrates were sent either to the Golden Cycle mill at Colorado Springs or to the American Smelting and Refining Company plants at Leadville (Colorado) and Garfield (Utah), with a few shipments to custom mills in Clear Creek and Gilpin counties. Bullion was sent either to the Denver Mint or to Denver bullion buyers. The three largest producers were Slide Mines, Inc., which operated continuously its Slide-Klondike group of mines and flotation-gravity concentration mill near Gold Hill; H. M. Williamson, who shipped crude ore direct to the Golden Cycle mill throughout the year from the Wano group at Jamestown; and the Poorman-Relief group of mines in the Sugar Loaf district operated by several lessees, all shipping their ore to the Golden Cycle mill.

Clear Creek County showed decreases in production of gold, silver, and lead, but a small increase in copper; zinc was recovered for the first time in several years. The county ranked third in production of gold. Minnesota Mines, Inc., operating the Crown Prince group of mines and a 250-ton amalgamation-flotation-cyanidation mill, was the largest producer of gold in the county.

Custom mills operated in Clear Creek County during the year included: The Clear Creek-Gilpin sampler, Ruth mill, and Black Eagle mill, which ran the entire year; and the Gustafson mill, Hoosac or Furstenberg mill, and Commonwealth mill, which ran part time. The Banner Mining Company operated the Clear Creek Placers,



crease resulted from suspension of operations in April 1941 at the Comet-Gray Eagle group near Basin by the Basin Montana Tunnel Company and to a substantial decrease in shipments of old tailings from the Hecla dump near Melrose. Nearly 79 per cent of the output of silver was produced from mines at Butte; the output of the district was about 8,900,000 ounces compared with 8,752,708 ounces in 1940.

About 53 per cent of Montana's silver output was recovered from copper ore concentrated and nearly 24 per cent from zinc-lead ore concentrated; the remainder was recovered largely from crude smelting dry and siliceous ores.

THE output of recoverable copper in Montana in 1941 was 1 per cent greater than that in 1940 but 12 per cent less than that (289,056,000 pounds) in 1937. Montana produced a yearly average of 290,205,290 pounds of copper during the war period (1914-18). The mines at Butte and the reduction plant at Anaconda were operated continuously in 1941 but not at capacity. About 98 per cent of the state's output of copper in 1941 was recovered from copper ore and mine-water precipitates from properties of the Anaconda Copper Mining Company at Butte; the remainder was recovered mostly from zinc-lead ore mined at Butte. The increase in copper ore and zinc-lead ore from Butte resulted in proportionate gains in by-product gold and silver. Copper ore and mine-water precipitates and zinc-lead ore from Butte yielded recoverable gold, silver, copper, lead, and zinc valued in all at about \$43,000,000 in 1941, or 75 per cent of the state's value of the five metals.

The output (43,500,000 pounds) of recoverable lead in Montana in 1941 was about 6 per cent less than the record output (46,072,000 pounds) in 1940. The loss resulted chiefly from the closing in April of the Comet-Gray Eagle group at Basin in Jefferson County. Marked increases in lead output were reported at the Mike Horse mine near Flesher in Lewis and Clark County and at the Broadwater-Moulton group at Neihart in Cascade County. About 40 per cent of the state's lead output was recovered from zinc-lead ore from mines operated by the Anaconda Copper Mining Company at Butte. Other large producers of lead were the Flathead

(Anaconda Copper), Jack Waite, slag-fuming plant at East Helena, Mike Horse, and Broadwater-Moulton (Klies Mining Company) properties.

THE output of recoverable zinc in Montana in 1941 was 111,800,000 pounds, the largest output since 1929 and an increase of 6 per cent over 1940. Montana produced a yearly average of 194,170,843 pounds of zinc during the period 1915-1920, inclusive, and a yearly average of 139,274,698 pounds from 1922 to 1929, inclusive; the highest production was 229,259,075 pounds in 1916. The output of zinc from the Butte district increased from 71,798,000 pounds in 1940 to about 72,500,000 pounds in 1941, and accounted for 65 per cent of the state output of zinc. The rest of the zinc was recovered mostly from current slag treated at the slag-fuming plant at East Helena by the Anaconda Copper and from zinc-lead ore from mines at Neihart, near Duthie (Idaho), Flesher, Jens, Victor, and Philipsburg.

The Anaconda Copper Mining Company property at Butte was by far the largest producer of zinc in Montana in 1941; it was followed by the slag-fuming plant, Emma mine at Butte, Klies Mining Company at Neihart, Jack Waite mine in Sanders County, Mike Horse mine at Flesher, and Forest Rose mine near Jens. The output of zinc from mines at Butte operated by the Anaconda Copper Mining Company decreased from 68,662,044 pounds in 1940 to about 66,700,000 pounds in 1941; the output of zinc from the slag-fuming plant increased, but there was a substantial decrease from mines at Philipsburg.

The Anaconda Copper Mining Company operated its copper smelter, zinc smelters, and concentration mills continuously in 1941. The copper smelter is equipped with six reverberatory furnaces and has a total rated capacity of 1,300,000 tons of feed per year. The capacity of the electrolytic zinc smelters (4 units at Anaconda and 8 units at Great Falls) was increased from 2,300,000 to 2,500,000 pounds of slab zinc per unit per month, and the output of zinc in 1941 reached an all-time peak. During 1940 the plants treated zinc concentrates shipped from mills in Idaho, Montana, Utah, and Washington; zinc fume from

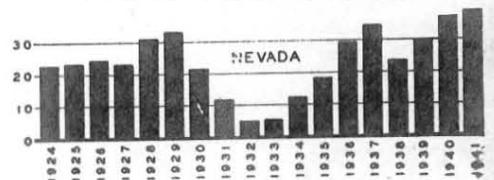
the slag-fuming plant at East Helena; and zinc concentrates from mills in British Columbia, Mexico, and Australia. The copper concentrator has a rated daily capacity of about 16,200 tons and the zinc concentrator about 1,650 tons of ore.

The lead smelter at East Helena was operated throughout the year by the American Smelting & Refining Company, chiefly on lead-silver concentrates from the Coeur d'Alene region in Idaho, lead-silver concentrates from the Butte district in Montana, and siliceous gold ores and concentrates from various districts in Montana.

The fuming plant at East Helena was operated continuously in 1941 by the Anaconda Copper Mining Company on hot slag shipped from the East Helena lead furnaces; the output of zinc from the plant was about 10 per cent greater than in 1940.

NEVADA

MINE PRODUCTION OF GOLD, SILVER, COPPER, LEAD, AND ZINC IN NEVADA, 1924-1941, IN MILLIONS OF DOLLARS



TOTAL value of the gold, silver, copper, lead, and zinc recovered from ores, old tailings, and gravels in Nevada exceeded in 1941 any year since 1918. Gold production declined 3 per cent, but increases over 1940 were recorded in both quantity and value of each of the other four metals. Preliminary figures show gold production in Nevada in 1941 as 372,300 fine ounces; silver, 5,786,000 fine ounces; copper, 157,620,000 pounds; lead, 18,980,000 pounds; and zinc, 29,260,000 pounds—valued in all at \$38,873,169. These figures compare with a production in 1940 of 383,933 ounces of gold, 5,175,928 ounces of silver, 156,908,000 pounds of copper, 14,998,000 pounds of lead, and 23,666,000 pounds of zinc—valued in all at \$37,089,777.

A small decline in gold production in Nevada in 1941 reversed a trend that had

SOME STATISTICS ON 1939, 1940, AND 1941 PRODUCTION OF GOLD, SILVER, COPPER, LEAD, AND ZINC IN THE WESTERN UNITED STATES

State	Gold—Fine Ounces			Silver—Fine Ounces			Copper—Pounds		
	1939	1940	1941	1939	1940	1941	1939	1940	1941
Alaska	676,737	755,970	687,657	201,054	191,679	191,000	256,000	110,000	20,000
Arizona	316,453	294,807	315,000	7,824,004	7,075,215	7,551,000	524,224,000	562,338,000	665,500,000
California	1,435,264	1,455,671	1,411,800	2,599,139	2,359,776	2,147,000	8,360,000	12,876,000	7,810,000
Colorado	366,852	367,336	377,503	8,496,488	9,710,709	7,234,487	26,430,000	24,304,000	13,002,000
Idaho	116,662	146,480	150,000	17,222,370	17,552,240	16,605,000	5,032,000	6,698,000	7,800,000
Montana	264,173	272,602	246,500	9,087,571	12,361,050	11,304,000	195,654,000	252,782,000	255,000,000
Nevada	361,518	383,933	372,300	4,316,029	5,175,928	5,786,000	133,194,000	156,908,000	157,620,000
New Mexico	36,979	35,943	28,469	1,400,878	1,407,839	1,359,308	92,284,000	139,696,000	143,124,000
Oregon	93,372	113,402	94,600	105,388	219,112	276,000	96,000	176,000	198,000
South Dakota	618,536	586,662	610,223	167,584	175,514	166,202	.....	12,000	.....
Texas	324	312	325	1,341,945	1,326,150	1,105,913	68,000	60,000	10,000
Utah	277,751	355,494	347,784	10,758,657	12,172,299	11,203,733	343,780,000	463,728,000	525,154,000
Washington	90,420	82,136	81,569	442,063	365,175	385,290	17,996,000	19,224,000	17,284,000
Wyoming	583	740	482	75	114	80	.....	4,000	6,000

HOLE
TORN
IN PAGE

continued since 1938. The Getchell mine in the Potosi district of Humboldt County, operated by Getchell Mine, Inc., continued to be the leading gold mine in the state by a wide margin. The Nevada Consolidated Copper Corporation (operating subsidiary of the Kennecott Copper Corporation) and the Consolidated Coppermines Corporation, both operating in the Robinson district of White Pine County, were very large producers of gold derived as by-product from copper ores. Fourth-largest gold production in the state was made by the connected-bucket dredge operation of the Manhattan Gold Dredging Company in the Manhattan district of Nye County; this was the only connected-bucket dredge operating in Nevada in 1941. E. L. Cord, who became the sole operator of the Mary mine in the Silver Peak district of Esmeralda County during 1940, was the fifth-largest producer of gold in 1941.

On the Comstock Lode the largest gold producer was the Dayton Consolidated Mines Company, but much of the ore treated in the company cyanide plant was trucked from other districts and treated on a custom basis. The Consolidated Chollar Gould & Savage Mining Company, after extensive stripping operations, established a large open pit at its property in the Gold Hill section of the Lode; this company's output expanded substantially during the year.

The Standard Cyaniding Company, which operated a 600-ton cyanide plant at the Gold Standard mine in the Imlay district of Pershing County, enjoyed a larger production in 1941 than in 1940. The Northumberland Mining Company in the Northumberland district, Nye County, maintained its 1940 production record during 1941. The Dayton Dredging Company, first dragline dredge to use a dragline-excavator bucket in excess of 8 cubic yards, continued operations throughout the year; 12 and 14-yard buckets were used. The substantial gold output of this company in its first full year of operation indicates that at least part of the problem of effecting large capacity from very deep dragline dredging was being solved.

THE quantity of silver produced in Nevada in 1941 was the greatest since 1926 and its value since 1925. Desert Silver, Inc., which treated ore from the Nivloc mine in the Silver Peak district of Esmeralda County, was Nevada's outstanding silver producer for the fourth successive year. The silver derived from zinc-lead ores produced by the Combined Metals Reduction Company in the Pioche district, Lincoln County, made this company one of the leading silver producers in the state. Capacity copper production in the Robinson district, White Pine County, in 1941 resulted in large silver outputs by the Nevada Consolidated Copper Corporation, the Consolidated Coppermines Corporation (and its lessees), and by shippers of argenteriferous ore to the McGill smelter.

Nevada copper output in 1941 increased slightly in both quantity and value over 1940 and was greater in quantity than any year since 1928 and in value since 1929. In the Robinson district, White Pine County, the Nevada Consolidated Copper Corporation (largest industrial enterprise in the state) continued to hold its position as the state's leading copper producer; this company also operated the McGill copper smelter, only smelter in Nevada. Its neighbor, the Consolidated Coppermines Corporation, operated the copper and precious metals sections of its property throughout 1941 and was again the second-largest copper producer in the state.

The only other important copper output in Nevada resulted from the operations of the Mountain City Copper Company in the Cope district of Elko County; this company is a subsidiary of the International Smelting and Refining Company and thus a member of the Anaconda Copper Mining Company group. During the year the International Smelting and Refining Company concluded a lease and operating agreement with the Copper Canyon Mining Company, with properties in the Battle Mountain district of Lander County; extensive development work was carried on and production of concentrates at a new 350-ton flotation mill was planned for early 1942.

NEW MEXICO

MINE PRODUCTION OF GOLD, SILVER, COPPER, LEAD, AND ZINC IN NEW MEXICO, 1924-1941, IN MILLIONS OF DOLLARS



METAL mines in New Mexico in 1941 recorded an increase in the value of output of about \$2,726,000 over that of 1940. In 1941 the production of gold, silver, copper, lead and zinc had a value of \$24,972,338 while in 1940 it was \$22,246,421.

The New Mexico mines yielded in 1941 (in terms of recoverable metals) 28,469 fine ounces of gold, valued at \$996,415; 1,359,308 fine ounces of silver, \$996,619; 143,124,000 pounds of copper, \$16,745,508; 9,130,000 pounds of lead, \$511,280; and 75,691,000 pounds of zinc valued at \$5,752,516. Comparable figures for 1940 are gold, 35,943 fine ounces, valued at \$1,258,005; silver, 1,407,839 ounces, \$1,001,130; copper, 139,696,000 pounds, \$15,785,648; lead, 7,644,000 pounds, \$382,200; and zinc, 60,626,000 pounds, valued at \$3,819,438.

These figures show that there were increases in 1941 of 3,428,000 pounds in copper, 1,486,000 pounds in lead, and 15,065,000 pounds in zinc and decreases of 7,474 ounces in gold and 48,531 ounces in silver.

IN THE Central district the Nevada Consolidated Copper Corporation, operating the open-pit Chino mines at Santa Rita and its 17,500-ton (daily) concentration mill and a 288,000-ton (annual) reverberatory copper smelter (first blown in early in May 1939) at Hurley, ran the mill throughout 1941, part of the year above rated capacity. Considerable copper also was recovered by leaching and from carbonate copper ore which was used by the smelter as a flux. Molybdenum, gold, and silver are recovered as by-products.

(Continued on Page 36)

SOME STATISTICS ON 1939, 1940, AND 1941 PRODUCTION OF GOLD, SILVER, COPPER, LEAD, AND ZINC IN THE WESTERN UNITED STATES

State	Lead—Pounds			Zinc—Pounds			Total Value in Dollars		
	1939	1940	1941	1939	1940	1941	1939	1940	1941
Alaska	1,874,000	1,558,000	1,780,000	.....	.....	.....	23,936,970	26,685,585	24,309,300
Arizona	21,542,000	26,532,000	32,550,000	13,422,000	30,912,000	32,000,000	72,616,408	82,167,759	98,512,900
California	1,052,000	3,544,000	6,610,000	12,000	158,000	780,000	52,918,012	54,268,690	52,282,966
Colorado	16,444,000	22,952,000	25,214,000	3,660,000	10,120,000	31,918,000	22,319,041	24,293,665	23,716,115
Idaho	181,962,000	209,668,000	207,000,000	95,098,000	141,202,000	155,200,000	29,794,144	37,744,393	41,357,800
Montana	33,110,000	46,072,000	43,500,000	69,598,000	105,174,000	111,800,000	40,937,870	55,825,078	57,433,700
Nevada	8,472,000	14,998,000	18,980,000	12,456,000	23,666,000	29,260,000	30,480,870	37,089,777	38,873,169
New Mexico	10,784,000	7,644,000	9,130,000	58,712,000	60,626,000	75,691,000	15,402,572	22,246,421	24,972,338
Oregon	30,000	70,000	136,000	.....	.....	.....	3,350,950	4,148,271	3,538,049
South Dakota	.....	14,000	.....	.....	.....	.....	21,762,514	20,660,036	21,475,993
Texas	454,000	410,000	350,000	.....	.....	.....	950,646	981,240	813,572
Utah	135,268,000	151,376,000	138,870,000	69,052,000	87,576,000	79,260,000	62,725,551	86,585,499	95,383,037
Washington	7,436,000	5,110,000	7,320,000	20,262,000	23,120,000	27,974,000	6,739,467	7,018,812	7,687,071
Wyoming	.....	.....	.....	.....	.....	.....	20,456	26,433	17,629
1939—Average Metal Values			1940—Average Metal Values			1941—Average Metal Values			
Gold (per ounce).....	\$ 35.00		Gold (per ounce).....	\$ 35.00		Gold (per ounce).....	\$ 35.00		
Silver (per ounce).....	0.678		Silver (per ounce).....	0.711		Silver (per ounce).....	0.711		
Copper (per pound).....	0.104		Copper (per pound).....	0.113		Copper (per pound).....	0.117		
Lead (per pound).....	0.047		Lead (per pound).....	0.050		Lead (per pound).....	0.056		
Zinc (per pound).....	0.052		Zinc (per pound).....	0.063		Zinc (per pound).....	0.076		

crosscut tunnel to cut the vein at depth. The tunnel is in approximately 70 feet. Values are in copper and gold, and high-grade ore has been shipped from shallow surface workings at the property.

Paul Dueker, Bouse, Arizona, is employing five men in developing his lease in the Eva May shaft of the Little Butte mine five miles west of Bouse, Arizona. He is shipping 200 tons of gold ore monthly and expects to step up activity shortly. It is planned to open up the Little Butte shaft and to ship copper and gold ore. Victor Smith and associates of Los Angeles have located six claims on an extension of the Little Butte gold vein, have erected a headframe, and are engaged in sinking a new shaft. Three men are working on the Smith project.

The Big Bug Dredging Company, C. S. Barnes, general manager, Box 131, Prescott, Arizona, has cleaned up its ground on Lynx Creek and has moved its equipment to the Hobbs ground on the Hassampampa River. The company's equipment includes a Bodinson floating dredge fed by an 801 Lima dragline. Stripping and leveling are done with a D8 Caterpillar tractor. Power is supplied to the all-electric dredge by means of a Caterpillar D13000 diesel generator.

Development is proceeding at the Clyde Redemption mine two miles east of Chlovide, Arizona, but no shipments are being made at this time. Work is being carried on through a 275-foot drift tunnel. A crosscut tunnel, 100 feet long and 85 feet below the 275-foot drift tunnel, needs 200 feet of advance to cut the same oreshoot. Values are in copper. W. B. Winsett, Chlovide, is owner and operator.

A crew of about 36 men is engaged in trenching, sampling, and road construction at the Canyon Creek iron deposit 22 miles east of Cibique in Gila County, Arizona, preparatory to a diamond drilling program scheduled for the property. The work is being done by the U. S. Bureau of Mines and is directed by Walter F. Storms, Box 1097, University Station, Tucson, Arizona. The ore is a blanket deposit of hematite on limestone and, where it is exposed by Canyon Creek, shows a width of from six to 10 feet along 9,000 feet of outcrop. Iron deposits in the west are being examined by the Bureau of Mines to determine the feasibility of constructing iron and steel furnaces in the Pacific Coast area.

Charles Duncan, Kingman, Arizona, is reported to have completed repairs to his equipment and is again treating gravel at his Lost Basin placer holdings located near the old King Tut placers.

The Rattlesnake quicksilver mine on Late Creek, owned by Packard Brothers, Payson, Arizona, has been leased to McVaters and Long of Globe, Arizona, and further development is planned. The property was formerly worked by the E. L. Ord interests in connection with the Ord mercury mine, and the Rattlesnake is said to have furnished the higher grade ore to the Ord mill.

The Santa Maria Mining Corporation, J. Ross, president, 404 Heard Building,

Phoenix, Arizona, is employing 30 men at the property formerly operated by the Consolidated Gold Mines Company near Dos Cabezas, Arizona. The mine is being opened up and the mill revamped. It is planned to have the plant ready for operation during January.

Mark Gemmill and associates of Yarnell, Arizona, have acquired a lease on the Dundee-Arizona mine of the Dundee-Arizona Copper Company at Jerome. A road has been completed to the mine, new equipment is being hauled in, and a camp is being built. It is planned to ship 50 tons of ore daily to the smelter at Clarkdale, Arizona. The property is opened by approximately 5,000 feet of tunnels and drifts in an oxidized copper zone.

Milling operations are reported under way at the Bi-Metal mine three miles southwest of Kingman, Arizona, under the direction of Charles D. Wilkinson, superintendent of Geronimo Gold Mines, Inc. The Bi-Metal was acquired by the Geronimo company early in 1940 and since that time the mill has been thoroughly overhauled. All mining at the property has been by power shovel along a shear zone. Many hundreds of tons of ore were shipped to the Tom Reed mill at Oatman, Arizona, two or three years ago. Leslie Saunders, 414 James Street, Los Angeles, California, is manager of the Geronimo company.



The Laco Mining Company, Inc., H. N. Mason, president, Route 3, Box 412, Los Gatos, California, is producing an average of one flask of quicksilver daily at its property near Los Gatos. A crew of 18 men is employed. The shaft is being unwatered to the next level and plans for future work include the extension of the prospect tunnel which is being run in unexplored territory. The tunnel is in approximately 500 feet at present. Howard E. Meade is general superintendent.

The 125-ton milling plant of the Surcease mine at Oroville, California, is operating at capacity, treating gold-silver ore. The mill capacity was increased and the plant modernized early in 1941 and now includes facilities for reduction of the flotation concentrates by cyanidation. The property is operated by Hoefling Brothers, J. W. Hoefling, managing partner, Box 786, Sacramento, California. Allan E. Jones, Box 991, Oroville, is general manager at the property, assisted by K. Malone, mine superintendent; W. B. Messner, mill superintendent; M. W. Horner, master mechanic; J. P. Warren, purchasing and employment agent. The operating crew totals 103 men.

Production is scheduled to start about the middle of February at the Grey Eagle chrome mine west of Orland, California, with the initial output set at 200 tons of ore and 50 tons of concentrates daily. The property is being prepared for operation by the Rustless Mining Corporation and the

mine is equipped with a 200-ton gravity concentration plant. A crew of 75 men is employed at the property under the direction of C. E. Osborn, general superintendent, Star Route, Orland. Operating personnel includes B. H. Sharp, mine superintendent; Frank Erno, mill superintendent; C. M. Marquardt, chief mine engineer; Roy Caldwell, chief field engineer; Ray Ferguson, master mechanic; and Harry Putsche, chief chemist, all of Orland. Robert H. Sayre, vice-president and general manager; C. J. Hendrickson, purchasing agent; and C. V. Welch, chief clerk and auditor, are located at 504 F and M Building, Sacramento, California. C. E. Tuttle, 3400 East Chase Street, Baltimore, Maryland, is president of the Rustless corporation.

The Shasta Dredging Company, a partnership composed of E. A. Kinkle and Mrs. W. C. Thompson, 400 Fourth Street, Yreka, California, is now operating the Thompson dredge located 15 miles north of Yreka. A crew of 16 men is employed and the dredge is handling from 1,500 to 2,000 yards of gold-bearing gravel daily.

Approximately 25 pounds of quicksilver are being produced daily at the Archer mine, Coalinga, California, under the direction of Ben J. Byles, part-owner and operator. Six men are working at the property. About 3,200 pounds of high-grade ore are treated daily in the Ross-type retort with which the mine is equipped.

Twelve men are employed in hydraulic mining operations at the property of La Grange Placer Mines, Ltd., Weaverville, California, under the direction of Vincent W. Ryan, general manager. Fred A. Schaffer is foreman at the property. The company is headed by Mrs. Margaret Powell Stookey of Weaverville.

Dredging operations are proceeding at the property of the R. and M. Mining Company, La Porte, California, with from seven to nine men employed. A. T. Merian, La Porte, is general manager, and Bob Merian, Oroville, California, is chief mechanical engineer.

An extensive development program is to be undertaken by June of 1942 at the McBride-Caledonia mine, La Porte, California, if war conditions will permit. The mine, a hydraulic project, is being developed under the direction of Lewis F. Johnson, superintendent, Box 491, Auburn, California.

An average recovery of 15 fine ounces of gold per day is reported by the Sunmar Dredging Company, Oroville, California. A crew of 14 men is employed at the property under the direction of William F. Baxter, general manager, Box 228, Oroville, California. J. H. Frasher, Box G, Palermo, California, is general superintendent.

A new mill building and a blacksmith shop have been added to the surface equipment at the St. John mine about a mile north of Grass Valley, California. The old shaft has been unwatered and a crosscut is being run from the 500-foot level. It is planned to extend the shaft an additional 500 feet this spring. The mine was

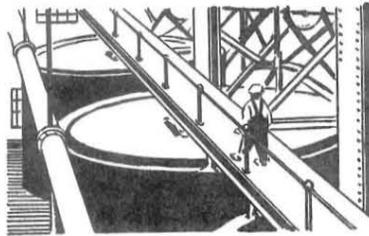
reopened early last year by Ed C. Jacobs of Nevada City, California, and associates.

Work is under way on construction of a 50-ton milling plant for the **Buckeye Mining Company**, Lone Pine, California, and it is understood that installation of a concentrator is planned at a later date.

The **Orolomo Company**, operating in the Missouri Flat district about four miles west of Placerville, California, is handling approximately 2,000 cubic yards of gold-bearing gravel daily. Equipment includes a Northwest dragline with 1 1/2-yard bucket, and a Bodinson dry-land dredge. A crew of 25 men is employed under the direction of Jerry Bickel, general manager.

Approximately 175 tons of diatomaceous earth are being mined daily by the **Dicalite Company**, 756 South Broadway, Los Angeles, California. The company's operations are located near WALTERIA, California, and are under the direction of M. Stockton, general superintendent. Eighty-five men are employed, and operating personnel includes C. W. Hooper, mill superintendent; Hunter Nicholson, assistant mill superintendent; D. F. Dyrsmid, chief mechanical engineer; E. M. Carnrick, master mechanic; and R. W. Schmidt, chief chemist, all of Box 107, WALTERIA. C. A. Frankenhoff, 120 Wall Street, New York City, is president of the company, and A. L. Gossman, 756 South Broadway, Los Angeles, is executive vice-president.

The **Indian Hill** gravel mine near Camptonville, California, is scheduled to go on



a production basis during January. Values are in titanium and gold, and the hydraulic method of mining will be used. The property is equipped with two No. 6 giants, and recovery equipment includes two 36-inch jigs, one 14-inch cleaner jig, plates, and a rod mill. From six to 12 men will be employed. Cole S. Nawman of Nevada City, California, has installed jigs and other equipment and will remain at the property to operate the equipment. J. M. Harper, Jr., Fort Lauderdale, Florida, or Camptonville, California, is general manager.

A crew of 21 men is employed at the Mountain King mine of **El Gabilan Corporation** near Hodson, via Copperopolis, California. The mine is producing between 225 and 300 tons of gold ore daily, which is treated in the company's 300-ton flotation plant. Maurice Calzasia, Angels Camp, California, is general superintendent, and Dwight Meteer, Box 56, Copperopolis, is chief clerk. Lester L. Robinson, 315 West Fifth Street, Los Angeles, is president of the company.

The **New Idria Quicksilver Mining Company**, Idria, San Benito County, California, is producing an average of 20 flasks of quicksilver daily. The mine and mill crews, totaling approximately 250 men, are under the direction of C. Hyde Lewis, general superintendent, Idria, and the operating personnel includes Wesley Shaddock, general foreman; James Smith, mine foreman; W. O. Wagstaff, shop foreman; G. Harvey, truck shop foreman; D. Jones, furnace foreman; J. McLaren Forbes, chief geologist; P. Kolendra, chief electrician; and E. A. Green, purchasing agent, all of Idria. An extensive expansion program has been under way at the property for several months and all divisions of the mine are now in operation. The two-mile San Carlos tramway has been reconditioned, and a power line to San Carlos Peak has been installed to operate the new vibrating grizzly plant which has been built there. New living quarters and a boarding house were built at San Carlos and a new bunk house is being constructed at the main camp. The furnace plant is operating at its peak capacity of approximately 12,000 tons monthly. New equipment includes trucks, a power shovel, another mucking machine, and various blowers and hoists.

A daily production of 25 tons is reported at the property of the **Newman Mining Company**, Pine Grove, California, with principal values in gold and galena. The mine is equipped with a 30-ton plant, which includes a 10-stamp mill, jig, flota-

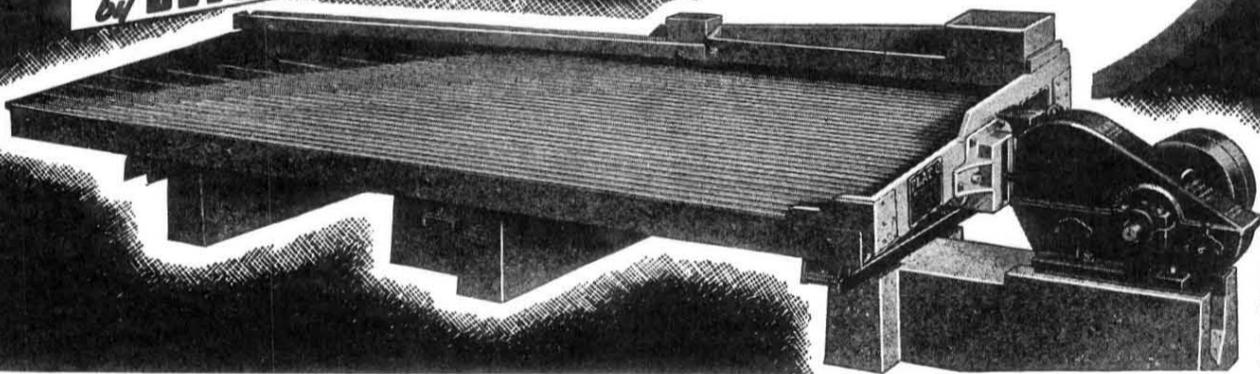
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tion cells, and concentrating tables. Mining activities include the reopening of old workings and the development of a newly located ore body. Eight men are employed and work is directed by James E. Mills, general superintendent, Pine Grove. C. W. Hurst is master mechanic, and John Mouriski, chief electrician, both of Pine Grove. S. T. Hilberg, Kelsey, California, is general manager.

The Sierra-Kern Syndicate, gold placer firm, is operating on a small scale on property along the Kern River. A. J. Clapham, Box 565, Bakersfield, California, trustee and engineer for the syndicate, is directing work.

The Placer Exploration Company, a partnership composed of J. T. Alm, Lionel T. Barneson, C. Fred Holmes, and J. Craig Hamilton, is employing approximately 50 men in gold dredging operations. Offices of the company are at 409 First National Bank Building, Chico, California. Hamilton is general manager, and Walter Laswell, Box 113, Palermo, California, is general superintendent.

Approximately 130 tons of gold and silver ore are being treated daily in the 150-ton flotation-amalgamation plant of Big Bear, Ltd., Inc., Big Bear Lake, California. A crew of 28 men is employed and work is directed by S. S. Chatfield, general superintendent, Big Bear Lake. A. H. Walker is assistant superintendent. The company is headed by F. M. Watkins, president and general manager, Box 4, Lost Hills, California. The company operates the old Lucky Baldwin mine located near Lake Baldwin in San Bernardino County.

Each of the three dredging plants operated by William Richter and Sons, Oroville, California, is treating approximately 2,000 yards of gravel daily, using floating washing plants and draglines. Thirty-three men are employed under the direction of William Richter, Route 2, Box 400, Oroville. Boat superintendents are Bernard and William C. Richter, and Jack Cameron, all of Oroville.

Work on the Culver Baer quicksilver mine, Cloverdale, California, is being confined principally to development although a small amount of quicksilver is being produced, averaging about 35 pounds daily. The mine is equipped with a 20-ton mill and a retort. It is planned to run a drift under present workings, probably a distance of 600 feet. C. E. Humbert, Cloverdale, is one of the principal owners of the mine. C. A. Baumeister, Cloverdale, is general manager.

Three men are working the Wind Wheel mine five miles from Columbia, California. The principal activity consists of mining ore pockets. The property is owned by R. O. Greeves, Box 151, Columbia.

The Yuba Minerals Development Company, a partnership composed of Edward Morris, 2022 Sixteenth Street, Sacramento, California; W. T. Ellis, 414 Second Street, Marysville, California; and I. L. Davis, Marysville, has equipped its Sanford mine and will begin operations soon. The Hutchinson mine, about one-eighth mile distant, is also being prepared for opera-

tion and a tunnel is being driven there. Davis is general superintendent at the properties.

Four men are employed at the Charles Kuppinger Dredge operating near Chico, California, under the direction of Jack Warner, general manager. The property has been idle during the past 12 months due to heavy highway work.

Anglo American Mining Corporation, Ltd., Walter Lyman Brown, president, 206 Sansome Street, San Francisco, is employing a crew of 28 men and is treating approximately 1,200 tons of tailings daily at the Yellow Aster property near Randsburg, California. The Yellow Aster mine, formerly leased by Anglo American, was returned to the owner, Yellow Aster Mining and Milling Company, in 1940, but the plant and equipment were retained by the lessees and treatment of the accumulated tailings has continued. A. W. Frolii, Randsburg, is general manager, and L. S. Allsman is general superintendent.

Development work is proceeding at the Billie Martin property, totaling approximately 200 acres, 2½ miles below Happy Camp, California. The ancient channel is being tested and a supply of pipe is to be accumulated to permit hydraulic mining. C. J. Phillips, 1016 San Antonio Avenue, Alameda, California, is owner of the property.

A 1,000-foot drift is being run on the 350-foot level of the Cherokee mine near Greenville, California, under the direction of William Spencer Hutchinson, Jr., general superintendent. A 7½-foot vein of commercial ore was uncovered recently in an undeveloped section of the property, and two profitable ledges are also under development in the main workings. The flotation plant is treating approximately 75 tons of gold ore daily. George Randall is master mechanic, and A. C. Johnson is foreman at the Cherokee. A crew of 33 men is employed. The property is owned and operated by Alfred L. Merritt, 200 Bush Street, San Francisco, California.

The Colorado group at Panamint Springs, California, which is being operated by the Combined Metals Reduction Company, is producing approximately 15 tons of ore daily, under the direction of Guy H. Herbert, Jr. A crew of nine is employed. Principal operations of Combined Metals are in Utah and Nevada. The company is headed by Fletcher W. Rockwell, New York City, and E. H. Snyder, Stockton, Utah, is vice-president and general manager.

The Salmon River Mines Company, E. C. Latchem, president and general manager, Callahan, Siskiyou County, California, has purchased a 50-ton Marcy ball mill, six flotation cells, electric motors, and other equipment for the new mill under construction at the property.

Ganim Gold Mines Company, Schilling, California, is working a talc deposit, and handling over 200 tons a month. Officials of the company include Joe S. Ganim, president, Schilling; George Gorham, vice-president, 2163 El Camino Real, San Mateo, California; and James G. Karris, secretary, 1433 California Street, Redding,

California. The company's placer holdings are being worked under lease by Lee Jamison and Paul Sintay.

Development work is continuing at the Gearhart mine on Indian Creek about 10 miles north of Happy Camp, California. The property was purchased in 1940 by James Fitzhugh of Alturas, California, and he has been carrying on development since that time. A road has been built and 3½ miles of ditch completed to the mine. Equipment includes an 0-size giant and some hydraulic pipe.

A crew of seven men is engaged in development work at the property of Hite Mines, Inc., located on the south fork of the Merced River, 25 miles northeast of Mariposa, California. William Ligon is mine superintendent. The mine is opened by a 2,600-foot tunnel, and principal values are in gold. Norman Whitmore, 417 South Hill Street, Los Angeles, California, is president of the company.

The Roliff property in the Brown's Hill district of Plumas County, is producing approximately 15 tons of gold ore daily under the direction of Charles P. Croft, lessee, Placerville, California. A hoist has been installed, a new headframe constructed, and the No. 2 shaft has been sunk to a depth of 50 feet on a six-foot vein of ore. Plans for the property include the running of a lower tunnel to drain present workings.

The 100-ton Gould rotary furnace of Magee Mercury, Inc., near Guerneville, Sonoma County, California, is operating at capacity and is producing between three and five flasks of quicksilver daily. Operations are directed by Thomas A. Monahan, general manager, Box 326, Guerneville, and a crew of 45 men is employed. The company is headed by Harry H. Magee, 69 Sutter Street, San Francisco, California.

The William von der Hellen Mining Company, operating on the Klamath River 15 miles northwest of Yreka, California, is handling approximately 2,500 yards of gold-bearing gravel daily, using a dragline dredge. A crew of 15 men is employed and work is directed by Hugo von der Hellen, mine superintendent, Yreka, California. William von der Hellen, general manager, is located at Medford, Oregon.

Twelve men are employed at the property of the Maule Mining Company near Frazier Park, California, under the direction of Milton Marcot, general manager. The company is headed by E. R. and Hap Maule, 236 - 21 Place, Santa Monica, California.

William R. Biaggi, 17 Grant Building, San Jose, California, and associates are continuing development of their property, the New North Almaden mine located in Santa Clara County 2½ miles east of Edenvale. C. A. Balden is mine superintendent and two men are employed. The property is equipped with retorts and a gravity concentration plant. Values are quicksilver and manganese, and while principal activity is confined to development, a small amount of ore is being produced.

A crew of 20 men is employed at the Cloverdale quicksilver mine, Cloverdale, Sonoma County, California, under the direction of Andrew Rocca, general manager, Cloverdale. The mine is equipped with a 70-ton rotary furnace and is producing one to two flasks of quicksilver daily. The property is operated as a partnership by Rocca; Joseph Schor, 1 Geary Street, San Francisco; and Joseph Garcia, Cloverdale. Schor is assistant general manager and Garcia is general superintendent. The Livermore mine in Sonoma County is also being placed on production by the same group of men.

The Argonaut Mining Company, Ltd., Alex F. Ross, general superintendent, Jack-

son, California, is producing approximately 280 tons of gold ore daily, which is treated in the company's 350-ton flotation-amalgamation-cyanidation plant. Operating officials at the mine include Robert Shea, mine foreman; Earl M. Smith, mill foreman; William F. Peters, master mechanic; T. J. Burrow, chief electrician; J. L. Fontenrose, employment agent; and Walter D. Manning, purchasing agent, all of Jackson. A crew of 240 men is employed. John T. Smith, president, makes his headquarters at 1775 Broadway, New York City, while Joseph B. Smith, secretary, is addressed at 1404 Humboldt Bank Building, San Francisco.

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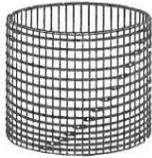
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by Okoro Mines, Inc., Callahan, California, and a crew of 15 men is working under the direction of L. C. Rood, general manager. The dragline dredge, equipped with riffles, tables, and amalgamation units, is handling approximately 2,000 cubic yards daily. B. F. Lowden, Callahan, is dredge-master, and W. V. Cantrall is master mechanic.

Roseclip Mines Company, F. J. Hartnett, general manager, Bodie, California, is treating 450 tons of gold-silver ore daily in its 500-ton cyanide plant. Thirty-five men are employed. The operating crew is headed by H. S. Ward, master mechanic; C. A. Gunderson, chief electrician; and G. A. Peterson, chief chemist, all of Bodie. J. W. Bacon, Bodie, is chief clerk.

W. C. Dorris and associates, 117 Morgan Building, Bakersfield, California, are employing a crew of seven men at the Stardust tungsten mine near Weldon, California. Ore is being treated at a custom mill owned by Dan Cronen. Jess Cuddyback, Weldon, is general superintendent at the mine.

Sixteen men are engaged in construction work under way at the property of Rand Gold Dredging Associates, M. E. Howard, mine superintendent, Box D, Randsburg, California. Wells are being drilled at the site and a dredge is being moved from Cottonwood, California, to the new location. Values are in gold and scheelite. Newton Cleaveland, 351 California Street, San Francisco, is consulting engineer for the organization.

The Big Canyon Dredge, George F. King, manager, 1501 Fifteenth Street, Sacramento, California, is handling approximately 3,000 cubic yards of gravel daily, recovering values in gold, platinum and iridium. Fifteen men are employed under the direction of Lester Vaughn, field foreman, Shingle Springs, California.

COLORADO

The Golden Cycle Corporation reports that it bought \$5,355,176 in gold in 1941, 87 per cent of which, or \$4,658,107, came from the Cripple Creek, Colorado, mines. These figures are actual for 11 months and estimated for the final month. In 1940 the mill bought \$4,394,533 from the Cripple Creek district. The largest shipper was the United Gold Mining Company, with 148,100 tons of ore gross valued at \$1,418,900. The Cresson gold mine retained its rank of largest single mine producer, shipping about 131,822 tons with a gross value of \$1,329,000. Merrill E. Shoup, Box 86, Colorado Springs, is president of the Cycle company and the UGM and Cresson concerns. Max Bowen of Colorado Springs is vice-president in charge of the Golden Cycle plant.

December ore shipments by the New Cashin Mines, Inc., are reported to have brought net smelter returns of \$44 a ton, with smelter sheets showing 51 ounces of silver to the ton and 6 per cent copper. The high-grade is being mined and shipped

to the smelter while the company's 100-ton flotation mill is being put in order to handle mill-grade ore previously developed on the main tunnel level. Ore is trucked 87 miles to the railroad at Thompsons, Utah, for shipment to Salt Lake City for smelting. Holdings are on LaSal Creek in Montrose County, Colorado, near the Utah line. J. W. Bleazard of Mountain Home, Utah, is president and George H. Ryan, 631 Dooly Building, Salt Lake City, is consulting engineer. R. A. Collett, vice-president of the company, is in local charge.

A winze is being sunk from the tunnel level of the Big Horn mine two miles southeast of Gold Hill in Boulder County, Colorado, by Karl Egle of Boulder and Jim Pastore. The winze is going down in ore, the ore body having been mined from the tunnel level to the surface. This property has been idle until recently because of litigation, but title is understood to have been vested in Karl Egle by court action.

Elmer Hetzer of Boulder, Colorado, is reported to have leased the Forest Home tungsten mine from Gold, Silver and Tungsten, Inc., which recently unwatered the property. Operations have been started by the lessee. J. G. Clark of Boulder is president of the owning company, and as agent for the Molybdenum Corporation of America is again in the market to purchase tungsten ore after a suspension of several weeks, pending determination of the government's policy in the matter.

Mining operations have been started from the tunnel level of the India mine in the Magnolia district of Boulder County, Colorado. The property is being operated by Harrison S. Cobb, Salina Route, Boulder; Edward F. Yates, also of Boulder; and H. Bascom.

According to reports, D. E. Krehbeil of Pretty Prairie, Kansas, bought out the J. N. Free interest in the Logan Mining and Milling Company and will start work immediately on the property under the name of Victory Metals Company. Krehbeil was president of the Logan company which has been inactive during the past year. The new company's first move will be to mine tungsten ore from the Logan No. 4 level. The drift on the Logan No. 3 vein will be retimbered and stope fill will be put through the 80-ton amalgamation and flotation mill on the ground. K. F. Fulton, 835 Pearl Street, Boulder, general manager for the Logan company, will continue in that capacity under the new ownership. The Logan mine and mill are located at Crisman in Boulder County.

The Wolf Tongue Mining Company is reported to be core drilling its property at Nederland, Colorado, in hopes of finding additional tungsten deposits. The company is stated to have laid off about 20 miners in December, retaining around 60 men on its payroll. Twelve sets of lessees have about 40 men employed on the property. William Loach, Box 25, Boulder, is general manager and C. G. Todd of Nederland is mine superintendent.

Regular shipments are being made from the King and Queen property in Clear Creek County, Colorado, to the nearby Red Elephant mill at Lawson for treatment.

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and C. H. Douglass is president of the company. Development of the property is stated to have begun two years ago, although the graphite ground was discovered in 1911.

According to reports, the Harts Pass Mining Company plans to continue operations throughout the winter on its mining claims in the Harts Pass district in eastern Whatcom County, Washington. Gold ore was recently encountered on a 250-foot lower level, and drifting is being done on the vein. The company was organized in September 1940 and work was started at the property in the spring of 1941. R. E. Pierson, 911 American Bank Building, Seattle, is president of the company.

The Kromona Mines Corporation, Joe F. Krom, Lloyd Building, Seattle, Washington, president, is planning exploration of a vein of copper-silver ore about 600 feet above the base of the Sultan Basin in Snohomish County. The outcropping ranges from 10 to 12 feet in width, and the strike of the vein is reported to be in the direction of the Copper Knob and Tunnel veins, work on which has been suspended temporarily because of inclement weather. Frederic Keffer, 222 Peyton Building, Seattle, is consulting engineer in charge of operations for the company.

RUSTLESS HALTS CHROME BUYING AND NEW MINING

RUSTLESS MINING CORPORATION, subsidiary of Rustless Iron and Steel Corporation of America, one of the largest consumers of chromite in the United States, has announced the discontinuance of ore purchases and of new mining projects for the present. The company has been a pioneer in the development of domestic supplies.

H. F. Byram, vice-president of Rustless Mining Corporation, made the announcement following a conference with C. E. Tuttle of Baltimore, president of both organizations. He pointed out that the government has established controls over the use of chrome, that supplies are available only through government allotment, and that the purchase and allotment of domestic production is expected to be handled by a government agency.

The announcement highlighted the complaint of Oregon and California chromite producers that there are insufficient miners and dealers in the region to finance development of this material in the quantities and quality asked by the Metals Reserve Company.

The mine and mill near Orland, California, scheduled to go on a production basis during February, will continue in operation, but there are no plans for further development other than this for the present, according to Byram.

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**METAL PRODUCTION
FIGURES FOR YEAR 1941**

(Continued from Page 11)

The increased production of Chino mines accounts for the increase in total recovered copper for the state.

The Empire Zinc Company, operating its Hanover mine and 300-ton mill, was again the largest producer of zinc concentrates; by-product metals were gold, silver, copper, and lead. The American Smelting & Refining Company operating under lease the Combination mill of the Black Hawk Consolidated Mines Company at Hanover, treated mostly company zinc-lead ores from the Ground Hog group. The Peru Mining Company, operating the Pewabic and other mines at Hanover, shipped zinc ore to the Peru 500-ton flotation mill at Deming and increased its output over 1940.

Other important producing mines in Grant County were as follows: In the Steeple Rock district The Exploration Syndicate, Inc., operated its East Camp group of mines and 50-ton cyanide plant; in the Pinos Altos district D. B. White operated several mines (chiefly the Ohio); and in the Burro Mountain district the Phelps Dodge Corporation started copper leaching operations on the upper levels of its Burro Mountain property.

The Black Hawk Consolidated Mines Company operated continuously the Consolidated group of mines and the Little Fanny cyanide mill at Mogollon; custom ore from other mines at Mogollon also was treated at the mill. The company was again the largest single producer of gold and silver in the state.

Placer operations included the John I. Hallett Construction Company, largest producer of placer gold in New Mexico, and the Crystal Gold Mining Company operating a dry placer plant, in the Las Animas district; and the Pittsburg Placer Mining Company in the Caballos Mountains district. Fullroe, Inc., operating the Lynch Homestead placer with a dry-land dredge, shipped bullion to the Denver Mint. The Peerless Mining Company operated a dry-land dredge on the Ute Creek placer of the Maxwell Land Grant Company.

In the Lordsburg district the Banner Mining Company operated the Bonney mine and 350-ton flotation mill, producing copper-gold-silver-iron concentrates which were sent to the El Paso smelter. Small quantities of smelting ores from various other mines in the county were shipped to smelters.

From the Waldo mine of the Ozark Smelting and Mining Company, operated by Raskob Mining Interests, Inc., which started production September 1, 1941, and the Kelly mine of the Empire Zinc Company operated by J. D. Torres, zinc-lead ore was shipped to the Ozark leaded-zinc pigment plant at Coffeyville, Kansas. Another property operating continuously was the Papa gold-silver mine in the Silver Mountain district.

The Molybdenum Corporation continued to produce molybdenum concentrates at its property between Red River and Questa.

OREGON

AFTER setting an all-time record in 1940 the total value of the gold, silver, copper, and lead recovered from ores, old tailings, and gravels in Oregon declined 15 per cent in 1941. Rising wages, the migration of miners to defense jobs, rising costs of supplies and materials and difficulties in obtaining them, higher taxes, and a fixed price for gold (principal metal produced in Oregon) were factors in arresting the trend which had more than doubled the total value of the four metals since 1937. Moreover, the abandonment in November of all operations at the Cornucopia mine by Cornucopia Gold Mines (largest gold and second-largest silver operation in the state), combined with other shutdowns, brought production in December to the lowest level in many months.

Preliminary figures credit Oregon with a production in 1941 of 94,600 fine ounces of gold, 276,000 fine ounces of silver, 198,000 pounds of copper, and 136,000 pounds of lead—valued in all at \$3,538,049—compared with a production in 1940 of 113,402 ounces of gold, 219,112 ounces of silver, 176,000 pounds of copper, and 70,000 pounds of lead—valued in all at \$4,148,271. No recoverable zinc has been reported since 1937.

In 1940 Baker, Grant, Jackson, and Josephine counties accounted for 96 per cent of the total value of the four metals and in 1941 these counties retained their lead and their order of importance. Cornucopia Gold Mines, operator of the leading lode mine of the state, and the Sumpter Valley Dredging Company, operator of Oregon's leading placer mine, are both in Baker County; in addition, Consuelo Gold Mines and the Ferris Mining Company operated dragline dredges in Baker County. Porter & Company, leading gold producer in Grant County, operated a connected-bucket dredge throughout the year. Cougar-Independence Lessees was by far the largest producer of lode gold in Grant County in 1941. Other important operators included the Western Dredging Company, Timms Gold Dredging Company, and Ralph Davis, Inc., (connected-bucket dredges), Bruce Dennis (Constitution lode-gold mine), and H. F. England Company (dragline dredge).

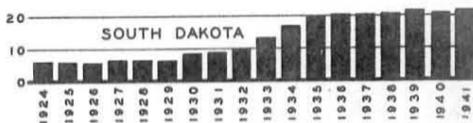
Silver production in Oregon increased 26 per cent in 1941 over the preceding year; the output at the Bellevue mine in Grant County was an important factor in this increase. Other leading silver producers were the Cornucopia mine in Baker County and the Constitution and Cougar-Independence mines, both in Grant County.

The Cornucopia mine continued in 1941 to be the principal source of copper in Oregon. The Bellevue mine in Grant County, operated by R. B. McGinnis, was the principal contributor to Oregon's output of lead in 1941.



SOUTH DAKOTA

MINE PRODUCTION OF GOLD, SILVER, AND LEAD IN SOUTH DAKOTA, 1924-1941, IN MILLIONS OF DOLLARS



MINES in South Dakota in 1941 produced gold and silver valued at \$21,475,993, or an increase in output of more than \$818,000 over the previous year. The yield in 1941 was 610,223 fine ounces of gold and 166,202 ounces of silver, as compared with 586,662 fine ounces of gold and 175,514 ounces of silver. No copper and lead production was reported for 1941, but for 1940 the output was 12,000 pounds of copper valued at \$1,356 and 14,000 pounds of lead valued at \$700.

The Homestake mine in Lawrence County, principal producer of gold in the United States, continued operations in 1941 at virtually the same rate as in 1940. The Yates shaft was completed to the 4,100-foot level at the close of the year, except for some pipelines and power cables in the shaft. Ore hoisting in this shaft began October 1, 1941, from the ore pockets at the 2,750 and 3,550-foot levels; full operation began November 1. The cost of this shaft to date has been over \$3,000,000. Ore from the mine is treated in a 3,900-ton, 24-hour capacity mill using amalgamation and separate sand and slime cyanidation. The gold and silver recovered are refined by the company at Lead, and virtually pure metals are shipped to the Denver Mint.

The Bald Mountain Mining Company, second-largest gold producer in South Dakota, continued operations at its properties near Trojan, Lawrence County, and carried on development work on properties acquired in January 1941 near Hill City. The company milled an average of about 365 tons of oxide and sulphide ores per day in 1941, using an all-slimes cyanide process.

Other lode operations were: The Canyon Corporation, Frerichs Mining Company, Gilt Edge Mines, Inc., Gold Mountain Mining Company, and Holy Terror Mining Company.

TEXAS

TEXAS metal mines in 1941 showed a decrease of about \$163,000 in the valuation of gold, silver, copper, and lead produced as compared with the yield of those metals in 1940. The total value of the output for 1940 was \$981,240 and that for 1941 was \$818,572.

These mines in 1941 yielded 325 fine ounces of gold, valued at \$11,375—a slight increase over the 312 ounces valued at \$10,920 produced in 1940. In 1941 the output of silver was 1,105,913 fine ounces valued at \$786,427 compared with 1,326,150 ounces valued at \$943,040 in 1940. There was a considerable drop in the production of copper in 1941—10,000 pounds valued at \$1,170 compared with 60,000 pounds valued at \$6,780 in 1940,

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JOHN F. DULING* outlines procedure in

Sampling Cat Camp Gold Placers

THE Cat Camp placers comprise a series of mesa or bench gravels, some 350 feet above sea level, lying between the Camanche Creek and the town of Camanche on the north and Valley Springs branch of the Southern Pacific Railway on the south, in Calaveras County, California. Geologically speaking, these are the delta gravels of the Tertiary Calaveras River along the shore of the Ancient Indian Sea.

In the sampling of any gold placer the objective is to obtain the information necessary in making plans for the exploitation of the deposit.

Since this property is a potential dredging operation, the desirable information will include the following:

- (1) Value, character, and distribution of the gold content.
- (2) Depth, character, and quantity of gravel to be worked.
- (3) Character and contour of bedrock.
- (4) Direction, fall, and rims of the river channel.
- (5) Limits of pay channel.

After a preliminary examination of the ground there comes a choice of methods to be employed in sampling.

In cases where the ground is deep and the ground water line stands high, churn drilling is indicated to avoid the cost of timbering and pumping. Again, if the ground is fairly dry with little ground water to be encountered, shaft sinking is desirable, as it provides larger samples, especially if the total shaft contents are worked and gold recovered. In dry ground a much more representative sample can be secured through shaft sinking and a corresponding greater degree of accuracy in determining gold content obtained than by an equal expenditure in drilling.

After choosing the method of testing, it is necessary then to decide how many drill holes or shafts are to be sunk in order to obtain sufficient data to compute with a reasonable degree of accuracy the gold content of the gravels. Unfortunately, the extent of the prospecting is often limited by the amount of capital available for testing the area under consideration. In the past the practice has been one shaft to each 4 to 10 acres. In the case of churn drilling, holes rarely have been spaced as close as one to the acre.

In the prospecting of large areas it is common practice to run first a series of drill holes across the channel at intervals of one-half mile and later drill holes on the quarter and eighth-mile lines. Where the test holes are sparingly located the gold content as recovered by dredging may vary as much as 20 per cent from the prospecting estimates, but where the gold

In a thorough and systematic testing of the Cat Camp placers in Calaveras County, California, 59 samples were taken from 30 different sampling places, or on the equivalent of one sampling place for each 2½ acres. Complete details of the procedure followed are given.

is fairly evenly distributed, and with closer spacing and by making use of shafts, the variation may not exceed 5 per cent of the sampling estimates.

IN THE CASE of the Cat Camp Placers there was reason to anticipate an area of commercial ground because of the presence of rather extensive evidence of early day ground-sluice mining and from the fact that a considerable area had been dredged in the same channel and adjacent to the ground to be tested.

This particular job was limited to the prospecting and sampling of an area of 75 acres located in Sections 12, 13, and 14, Township 4 N., Range 9 E., M. D. M.

In a preliminary examination of the property a portion of the south rim of the main channel was located. A considerable portion of the channel had been eroded away and it was only through shaft sinking that the northern rim was located. The original channel at this point had a width of 2,500 feet between rims and a rather flat bottom width of 1,800 feet. The fall at this point was 16 feet to the mile.

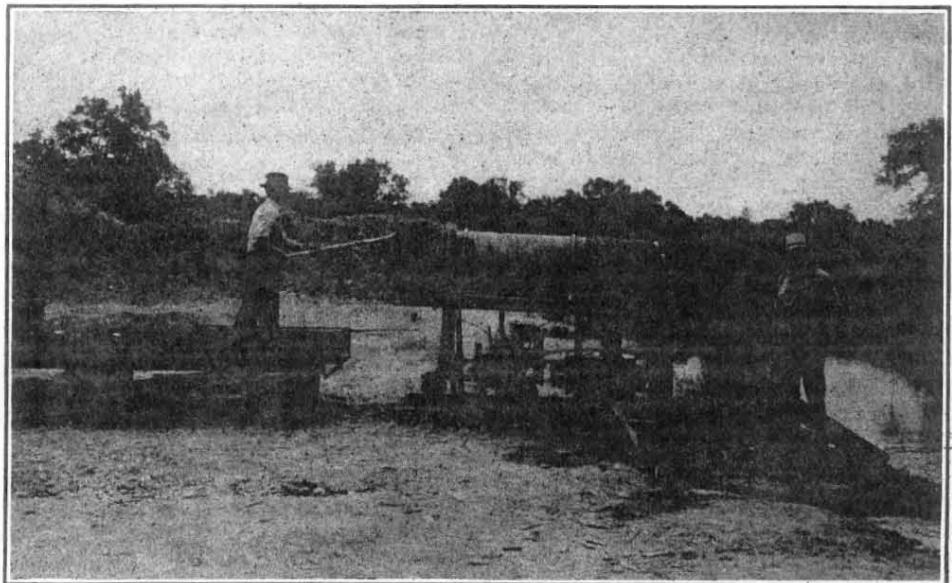
In the channel are two flows or strata of gravel. The first run of gravel on bedrock averaged 8½ feet thick, but in places reached a thickness of 12 feet or more. Then there occurred a stream interruption by volcanic activity in which a layer of volcanic ash some 4 feet in thickness was deposited. In most places this volcanic ash stratum was removed by later stream erosion, but in others it was hardened to a false bedrock.

This lower stratum of gravel designated as "coarse gravel" contained many boulders larger than a man's head, but no extremely large boulders.

Then followed a second flow of gravel averaging 9 feet in thickness, having stones as large as a man's two fists, but none as large as a man's head. Above this there had accumulated in the course of time a layer of top soil averaging about 4 feet in thickness.

Because of the geologic history of this stream, it was decided that the accuracy of sampling would be increased by logging and computing the value of each of these gravel strata separately. In no instance was the stratum of medium gravel found to have intermingled with the bedrock coarse gravel, and each bed is believed to have retained its original gold content.

AN examination of the bedrock rim exposed along bluffs on the northerly side of the property, together with the coarse iron-stained gravel exposed in the canyons along this rim, led to the conclusion that the deeper portions of the channel might lie near this rim. Aneroid



Equipment employed in washing the samples at the Cat Camp placers in Calaveras County, California. This consists of a revolving screen and a centrifugally driven bowl, powered by gasoline engine, and a scavenger sluice.

*Engineer of Mines, Los Angeles, California.

elevations compared with those taken along the dredging pit, south line of property, confirmed this theory which has since been verified by shaft sinking.

There existed on the property at the beginning of this undertaking a number of old shafts, but records of their logs or value of gravel were not available. The early mining activities also left numerous bank exposures favorable for sampling.

In planning exploration of the deposit it was decided to take advantage where possible of these bank exposures and old shafts and to sink a series of new shafts so located as to give out information along definite cross sections of the channel.

In this connection 16 new shafts were sunk to bedrock. Together with old shafts and bank exposures, 30 separate locations were sampled and logged to bedrock. This gave an average of one sampling place for each 2½ acres.

In all cases, the new shafts were sunk exactly 3 by 4 feet in size and the gravel content separated in grades as coarse gravel on bedrock, medium gravel, and top soil. The entire gravel content of the shafts, with the exception of top soil, was put through the washing and gold recovery plant.

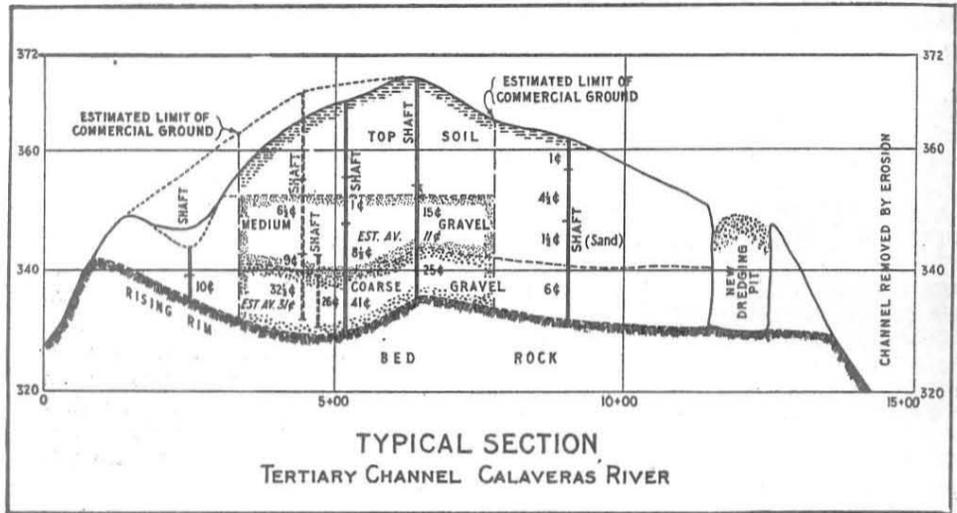
Each 27 inches in depth in a 3 by 4-foot shaft represented a one-cubic yard sample. Thus it was relatively easy to compute volume of each sample washed from the thickness of the gravel stratum.

In the case of old shafts, the sides were stripped down and a cut 8 by 18 inches taken on opposite sides, giving a 2-cubic foot sample for each foot of depth. Bank samples, because of the necessity of sacking and carrying samples out of the pit, were taken as a single cut 8 by 18 inches on a newly faced bank. The log of each shaft and bank sample was recorded.

All samples were trucked to and run through a washing plant consisting of a revolving screen and a centrifugally driven bowl, powered by a gasoline engine. A scavenger sluice completed the cleanup. A small pump supplied water for washing. The plant was set up alongside one of the old dredging ponds which furnished water and permitted dump room for the tailings. In operation, the revolving speed of the bowl was adjusted so as to retain the black-sand concentrates together with their gold content. The inner side of the bowl was corrugated to aid in retaining the concentrates. Tailings overflow into the scavenger sluice where additional concentrates are collected.

No mercury was used in the bowl, these concentrates together with the sluice-box concentrates being panned by hand. For this work an expert panner was employed and all concentrates panned a second time. The final separation of the gold from concentrated minerals was accomplished with magnet and camel's-hair brush. The gold was weighed on portable gold balances sensitive to one milligram.

The volume of the gravel was computed by averaging the end areas of two cross sections and multiplying by the distance between the sections.



TYPICAL SECTION
TERTIARY CHANNEL CALAVERAS RIVER

In the sampling of this area there were no blank runs, the gold being fine and well distributed, especially in the coarse gravel, which is surprisingly even in grade. The medium gravel was more variable in gold distribution.

In estimating the general average value per cubic yard the values from any one point that may appear too high or too low are compared with values in four directions from this point.

The general average values over that portion of the tract indicated as commercial are as follows:

	Per Cubic Yard
Top soil	1c
Medium gravel	12c
Coarse gravel	30½c

The volume of ground blocked out totaled 1,819,422 cubic yards made up of:

	Per Cent
Top soil	21.30
Medium gravel	31.13
Coarse gravel	47.57

THE conditions for a dragline or similar type of light-dredge operation on this property are very favorable.

1. The bedrock is a soft volcanic ash and can easily be cleaned by digging up a few inches of it and putting it through the recovery plant.
2. There are no large boulders to interfere with operations.
3. The gravel is not cemented. It breaks up and washes well.
4. The gold, while fine, is clean and should amalgamate well. It will require a careful regulation and distribution of wash water in order to avoid packing of the sluice boxes and washing over of the fine gold.
5. The gravel is sufficiently tight to hold the dredge pond.
6. Bedrock is relatively flat.
7. Stripping of top soil is recommended.

Electric power is available from the power line of the Pacific Gas and Electric Corporation, located 500 feet east of the east boundary of the property.

Water is available from the Mokelumne River, 5,000 feet north of the property, with a pumping lift of approximately 175 feet.

THIS job took approximately three months to complete. Shaft sinking took about double the time the washing of the samples required. All work was handled by contract. Shaft sinking cost as follows:

- One to 14 feet at \$2.00 per foot.
- Below 14 feet at \$2.50 per foot.

The shafts were sunk by windlass, no timbering being required. In three shafts water was encountered in quantities requiring the installation of a small pump. In these cases force-account labor at \$5 per diem, plus pump rental, was allowed.

The washing plant was contracted at a cost of \$11 per diem for plant and one operator, including gasoline and repairs. Additional labor was paid \$5 per diem. Truck and operator were contracted for at \$8 per diem, and driver assisted in loading and unloading samples.

Crews comprised:

Shaft sinking: two to three two-men crews. This work was started first and required about double the time spent in washing the samples.

Trucking crew: Two men.



John McGill, an old-time placer miner, at work at the Cat Camp placers. Duling states that McGill, in spite of his 70-odd years, is one of the most expert panners he has met in his entire practice.

HOLE
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IN PAGE

Washing-plant crew: One mucker, one plant operator, one panner.

The maximum plant capacity was one cubic yard per hour, usually limited by truck delivery of samples and number of clean-ups required.

In starting the operation the engineer spotted the shaft locations and started the contractor to work. When a shaft was started the ground was cleared of grass and excavated material was placed in separate piles—top soil, medium gravel, and coarse or bedrock gravel. A log was kept by the contractor and later checked by the engineer. After three weeks of shaft sinking the washing plant was started and a superintendent added to look after and co-ordinate all work. The total cost ran as follows:

Shaft sinking:		
Contract work	\$1,092.35	
Half superintendent cost	176.70	\$1,269.05
Trucking and washing samples:		
Trucking	\$ 398.00	
Washing	630.00	
Half superintendent cost	176.70	1,204.70
Other expenses:		
Surveying	\$ 225.00	
Weighing and classifying gold from samples	100.00	325.00
Total Cost		\$2,798.75

This gives a cost of \$37.50 per acre for 59 samples taken from 30 different sampling places, or on the equivalent of one sampling place for each 2½ acres.

A total of 141.26 cubic yards of samples was run through the washing plant, which represents 0.01 per cent of gravel reserves blocked out.

In addition, a complete geological examination was made and a mining report on the property was prepared, the cost of which is not included.

1. See: "Geology of the Cat Camp Placer District," by John F. Duling, The Mining Journal, October 30, 1941.

GOVERNMENT WILL INCREASE CAPACITY OF TEXAS TIN SMELTER

TIN Processing Corporation is planning to increase the capacity of its tin smelter, now under construction at Texas City, Texas, to produce 52,000 tons of pig tin annually. This product would be obtained from treatment of approximately 105,000 tons of ore. The project is financed by Reconstruction Finance Corporation, which has contracted for large quantities of concentrates from Bolivia and the Dutch East Indies. For the last several months, shiploads of the material have been brought in and stored at points in Texas, pending completion of the melter.

Tin Processing Corporation is a Delaware subsidiary of N. V. Billiton Maatschappij, a Dutch firm. J. van den Berg, Box 1461, Texas City, is vice-president and general manager. A. Russell Merz, Box 1428, Texas City, is works manager.

DREDGING FIRM ON FEATHER RIVER STRENGTHENS LEVEES AS IT WORKS

THE Oroville Gold Dredging Company, handling 250,000 yards of gold bearing gravel a month, is in the midst of an eight-year project in which 30,000,000 yards of river gravel will be mined from the bed and bars of the Feather River starting about nine miles south of Oroville, California, and working south.

W. H. W. Wandesforde, 2052 Bird Street, Oroville, owner and manager of the dredge, has inaugurated a dredging program which is strengthening the levee of the Feather River to such an extent that the levees in that area should never break again, it is claimed.

Government officials in charge of river levees have always required that dredgers work no nearer the levee foot than 50 feet. This requirement meant that the dredging firm always lost about 50 feet of gold-bearing ground. Also a V-shaped area was left open between the levee and the rock piled up by the dredge. Water would rush into this machine-made channel and often cause washouts.

Wandesforde conceived the idea that the levees would be strengthened if the rock could be piled against them. At the same time he could mine the 50 feet of valuable ground he had been losing. He took his plan to the authorities and they gave him permission to dredge nearer the levee base if he would follow his plan of reinforcing the levee.

About 3,000 feet of the levee have been strengthened in this manner, and additional footage will be taken care of as the work progresses down the river. This work is said to have sealed old breaks where levees were washed out during high water several times in the last few years and thousands of acres of farm lands flooded.

The rock is piled against the levee to raise it from the old 27-foot height to 31 feet. The sealing is accomplished both on top and along the sides. The dredger also has piled its debris in such a manner that for a distance of five miles the river channel has been widened to between 650 feet and 800 feet. The old channel was about 200 feet wide with narrow places of only 100 feet.

The dredge is the second one built on the site by the Oroville Gold Dredging Company. The first was destroyed by floodwaters in 1937. The present boat, of all-steel construction, has a hull measuring 55 by 120 feet which is floated on 32 pontoons. Equipped with 100 8½-cubic foot buckets, the dredge digs to a depth of 50 feet. The stacker is 120 feet long. The gold saving tables number 64 against only 16 on the old dredge.

The company employs a crew of 35 men on a 40-hour weekly basis, working three shifts a day. L. H. Cable is assistant engineer and Walter Phillips is dredge-master.

NEW HEAD APPOINTED FOR THE COPPER BRANCH OF WPB

APPOINTMENT of H. W. Dodge of Texas Company as head of the copper branch of the materials division of War Production Board has been announced by W. L. Batt, chief of the materials division. In a minor reorganization which divides the copper-zinc branch, Dodge will head the copper part of the work, temporarily. D. A. Uebellacker, who formerly headed the copper-zinc branch, will now take charge of the zinc work under the division. The appointment of Dodge to the copper branch is not believed to be permanent as his regular job is to assist Batt in the overall materials division work.



The dredge of the Oroville Gold Dredging Company which is recovering gold from the gravels of the Feather River and, at the same time, reinforcing the levees along the river banks. About 3,000 feet of the levee have been strengthened so far.

RICHARD HAMILTON* describes

Tungstar's Recovery of Scheelite

HIGH in the eternal snows of the Sierra Nevadas, swept in winter by awesome storms, lies the Tungstar, brilliant in its tungsten production and a challenge to the efforts of man.

Here upon the great granite batholiths of Bishop, a mine was born. It was discovered by an obscure prospector, conceived by a true mining man, and exploited by a courageous strategist. There are but few men who would have had the courage to brave the virgin granite bulwarks of the Sierras' Tungstar, let alone envision its future as a mine. Today, the Tungstar Corporation is a fine scheelite producer, feeding the hungry maws of countless steel furnaces of the nation.

The deposits of the area were known to exist as far back as the days of the first World War, but they lay dormant for years because the barriers were too formidable and tungsten prices too low to interest the mining men of the day. With the coming of the European War and the stimulus of a new unit price for tungsten, the properties of the World War days and countless new prospects have been subject to rigid investigation.

So it was with Tungstar. Fortunately, the engineering fraternity of our day is not prone to look upon the physical hazards of a mine with misgivings, but even Tungstar's founders, in those first bleak days on the shoulder of Mount Tom, must have looked down that cruel slope with some apprehension.

THE Tungstar is located at an altitude of 11,980 feet, above timberline and just below the crest of Mount Tom, 20 miles west of Bishop, California. The topography is rugged and the terrain strewn with gigantic granite boulders.

The area is composed of a series of granite rocks such as underlie the greater part of the Sierra Nevadas. The ore bodies of the Tungstar are found along contacts of the granite rocks and remnants of the sedimentary rocks that these granites invaded. These remnants are elongated masses that extend downward and could be classified as roof pendants. A belt of these pendants, striking roughly west, occurs over a length of 40 miles in the Bishop area. Many of them are barren, but some contain scheelite mineralization.

In the invaded sedimentary rocks, the limestone beds have been altered to composites of garnet and other silicate minerals at the granite contacts. Scheelite is found in certain areas of these silicate masses. The ore bodies of the Tungstar lie between country rocks classified as diorite on the north and granite on the south.

At the present time, operations are conducted on the Greene ore body, a deposit

The mining of scheelite continues steadily at the Tungstar property despite the fact that snow drifts of 60 to 100 feet are common occurrences in the canyons near the mine. High winds, storms, and snowslides further complicate mining operations at an elevation of 12,000 feet.

of considerable dimension. Adjacent to this deposit, 250 feet to the east, lies the Stevens ore body, a much greater deposit but of considerably lower grade.

The Greene ore body, on the outcrops, is 120 feet long and 30 feet wide and strikes slightly north of west. A 150-foot shaft has been sunk on the footwall.

In the process of sinking, values diminished rapidly at the 60 foot level, the rock finally becoming barren. It was thought that the limits of the deposit had been reached. However, sinking operations were continued and after 25 feet, heavy scheelite mineralization returned. From that point, values have continued undiminished throughout the development.

Crosscuts and drifts have been run to the limits of the ore body and at this writing, 100,000 tons of ore have been blocked out. Planned development consists of a crosscut to the Stevens ore body, 250 feet to the east.

OPERATIONS consist in the main of open-face work and mining is contracted under the supervision of Joe Bee, mine superintendent. This work is accomplished almost entirely by hand operation, a remarkable feat considering the tonnage involved and the unquestioned increased cost of production. However, the Tungstar is essentially a bonanza deposit and to date 25,000 tons of ore have been milled with an average mill head of 2.63 per cent WO_3 .

The ore is trammed to the mill which is located in the timber at an elevation of 7,200 feet. This tram consists of two sections, a 3,200-foot (slope length) jig-back and a 10,500-foot aerial tramway. The former is at the upper end of the tramway system. Rigid steel towers were used throughout and the estimated cost was \$165,000. The unit was engineered by R. N. Riblet Tramways Company of Spokane, Washington, and built by the Western Knapp Engineering Company of San Francisco.

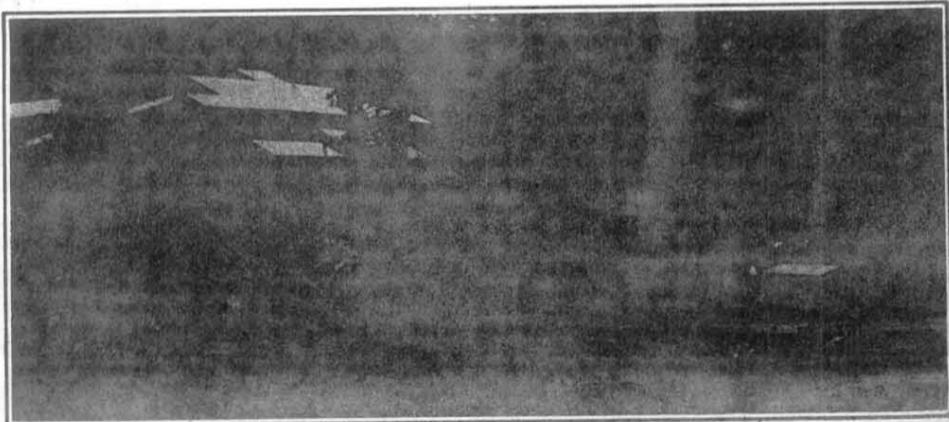
This latter firm also constructed the mill, following metallurgical testing by General Superintendent W. B. Phelps and his staff of technical assistants.

The flowsheet of Tungstar follows in general detail the scheelite reduction plants of the area, the ores of the district being of similar character. The ore is dumped from tram buckets into a 150-ton bin from which it is fed to the primary crusher. The minus $\frac{1}{4}$ -inch material is underpassed and, together with the crusher product, is fed to the rolls unit where a product of minus 16 mesh is made to feed a bank of seven Wilfley tables. Middlings from these tables are pumped to a ball mill grinding to minus 65 mesh, the discharge going to a small battery of flotation cells which produce a concentrate averaging 20 per cent WO_3 .

The table concentrate, averaging 60 per cent WO_3 , and the flotation product are marketed at the properties of the United Vanadium Corporation, an adjacent custom plant purchasing all grades and ores of tungsten.

Tungstar's mill capacity at present is 60 tons during two 8-hour shifts, but additional units are planned for the future.

The Tungstar Corporation is financed by individuals associated with the motion picture industry in California. The project was sponsored and exploited through the tireless efforts of General Manager Peter N. Stevens of Hollywood, California.



Milling plant of the Tungstar Corporation, above Bishop, California.

*Los Angeles, California.

HOLE
TORN
IN PAGE

CALIFORNIA MINERS FORM CHAPTER MINING CONGRESS

CALIFORNIA'S miners put the finishing touches to the formation of a California Chapter of the American Mining Congress in San Francisco on January 17. Brought together under this new organization are the producers of borax, quick-silver, potash, limestone, chrome, and the other metals and minerals, as well as, of course, gold.

Plans for the new association were started at a luncheon held in San Francisco during the October convention of the Western Division of the American Mining Congress. P. R. Bradley, president of the Alaska Juneau Mining Company, presided at that luncheon and subsequently directed the chapter through its organizational steps. Bradley, however, found himself to be ineligible for membership in the group he helped to form as he is not a California operator, but much credit is due him for the work he did in bringing the industry together.

Officials elected to serve for the ensuing year are Worthen Bradlev, president, (Bradley Mining Company); Russell Mumford, vice-president, (American Potash and Chemical Company); Roy E. Tremoureaux, vice-president, (U. S. Lime Products Company); Albert F. Knorp, secretary-treasurer, (Western Mining News); and G. Chester Brown, assistant secretary.

Members of the board of governors follow: P. R. Bradley, Jr., Pacific Mining Company; Wm. C. Browning, Golden Queen Mining Company; B. C. Austin, B. C. Austin Company and Ruby Mines; Roy W. Moore, Pacific Alkali Company and Cactus Queen Mining Company; R. H. Sayre, Rustless Mining Company; D. C. Peacock, Eagle Shawmut Mining Company; F. C. van Deirse, Yuba Consolidated Gold Fields; Alex F. Ross, Argonaut Mining Company; Henry W. Gould, H. W. Gould and Company; F. W. Nobs, Empire-Star Mines Company, Ltd.; Senator Thomas McCormack, Natomas Company; C. C. Prior, Central Eureka Mining Company; A. B. Campbell, Pacific Coast Borax Company; H. Clifford Burton, Burton Brothers; J. H. Bell, El Dorado Limestone Company; E. B. DeGolia, Gold Hill Dredging Company; Fred J. Estep, Snelling Gold Dredging Company; Chas. G. Patmon, Lancha Plana Gold Dredging Company; H. S. Lord, Dragline Gold Producers of California; Chas. H. Thurman, Thurman and Wright and Thurman Dredging Company; Walter D. Manning, Mother Lode Mining Association; James E. Babcock; and Robert Linton.

NEW LOVELAND PASS TUNNEL WILL AID PRODUCING MINES

TRANSPORTATION costs on ore shipments to Leadville from Boulder, Clear Creek, and Gilpin County mining districts in Colorado will be cut by the completion of the Loveland Pass tunnel. The highway tunnel will be 5,418 feet long and will require several years to complete. Its use will eliminate nine switchbacks on the present route over Loveland Pass and will shorten the distance by four miles.

COEUR D'ALENE MINING DISTRICT BREAKS OWN RECORD THIRD TIME

IN SPITE of increasing difficulties, the Coeur d'Alene mining district of Idaho exceeded its previous mine production and dividend record for the third consecutive year. In 1939 total dividends from the district amounted to \$4,110,765; in 1940 to \$4,880,614; and in 1941 to \$6,085,129. The big increase during 1941 is due chiefly to the return of the Tamarack and Custer and the Sherman mines to the ranks of dividend payers and to the Coeur d'Alene Mines Corporation joining the list by paying its initial dividend in December.

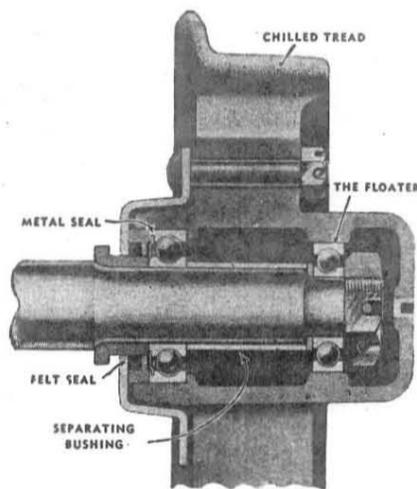
Difficulties surmounted during the year include the lead and zinc price ceilings fixed by the OPA branch of the government. In addition, the companies adopted

the highest wage scale ever paid in the history of the district, miners now receiving \$7 and \$7.25 for an eight-hour shift and time and a half for over-time. Prices of mine supplies were also increasing steadily and equipment and supplies are now hard to obtain.

While it is not considered probable that new mines of major importance will be discovered in the old district, there are many prospects believed to merit further development work. Operations are also pointing toward deeper development work from low levels in the older mines. Four new concentrating mills were erected within the year, increasing the daily output by 1,500 tons. The total production of the entire district is estimated roughly at 10,000 tons a day.

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KNOXVILLE • TENNESSEE

COLORADO MINING ASSOCIATION HOLDS SUCCESSFUL ANNUAL MEET

EDWARD THORNTON, general manager of the Summitville Consolidated Mines, Inc., at Summitville, Colorado, was elected president of the Colorado Mining Association at its forty-fifth annual convention in Denver, Friday and Saturday, January 23 and 24. Business sessions of the meeting were held in the Shirley-Savoy Hotel and the rock drilling, first-aid, and mucking competitions and the mineral and machinery displays were held in the municipal auditorium.

During the discussions, the problem of labor in mines and mills was brought up from many angles. Major A. R. Jones, Colorado adviser for occupational deferments, spoke on deferring miners in order that mining can go all-out for defense. Price ceilings, wage-hours, and priority policies were talked over. Dr. Wilbur A. Nelson, administrator of mine priorities in Washington, who was the principal speaker at the Sowbelly Dinner on Saturday night, is quoted as saying that makers of mining machinery should be placed on a parity with the makers of munitions to successfully meet the war production program. The position of war metals was discussed, and Merrill E. Shoup, president of the Golden Cycle Corporation, spoke of the firm future of gold mining, despite present problems arising from the more urgent need of other metals.

The contests and displays in the civic auditorium were opened to the public. The parade admirably depicted the growth of mining, showing miners dressed in old-fashioned clothes and wearing candles in their felts hats, while beside them stood the modern miners with safety helmets and electric lights. Walter Manning of Cripple Creek, sponsored by James Knight, won the mucking contest, shoveling three tons of mine-run ore in 6 minutes, 44 1/4 seconds. Al Webber, sponsored by J. P. Ruth of Idaho Springs, won second place, with 7 minutes, 4 1/2 seconds; Moody Wilkins, sponsored by the Colorado Trade and Transportation Company of Victor, placed third in 7 minutes and 11 seconds.

The six-man team from the Summitville Consolidated won the first-aid contest against seven other teams. Veta Mines, Inc., came in second and the Resurrection team third. Rock drilling demonstrations, in both single and double drilling, were given by a group from Boulder County.

Winners of the 1941 Joseph A. Holmes safety awards were announced. Cory Johnson received a bronze medal and others were awarded certificates for a rescue in the Conger mine at Nederland; Jacob A. Pike and Joseph Blankenship were given medals for rescue work in the Commonwealth mine at Cripple Creek; and Thomas U. Quinlivan was given a medal for his rescue work in the Creede mill at Creede. The Climax Molybdenum Mining Company at Climax was given a special award for having produced 6,000,000 tons of ore without a fatal accident and for an outstanding record in the reduction of injuries.

Several thousand delegates are said to have attended the convention and many

"outsiders" were made better acquainted with mining at the contests and exhibitions, which heretofore were not open to the public.

Thornton, the new president, succeeded Jesse F. McDonald of Leadville, who was named president emeritus. Vice-presidents are C. T. Van Winkle of Rico, Walter E. Scott of Central City, Leroy Burkett of Colorado Springs, and Jack Byron of Boulder. Charles Bell of Ouray was named treasurer and Robert S. Palmer of Denver was again named secretary.

EXPANSION PROGRAM STARTED AT THE BAGDAD COPPER MINE

ACTUAL work has started on the new development and expansion program at the property of Bagdad Copper Corporation 26 miles northwest of Hillside, Arizona, following the filing of final approval papers for the \$2,500,000 RFC loan at the office of the Yavapai County Recorder. Upon completion of the first bunk house, now under construction, erection of the housing facilities needed for additional employes will be started.

About the middle of February sinking on the new 500-foot three-compartment shaft is scheduled to start. This shaft, 9 by 19 feet, will replace the one of 400-foot depth now in use.

Present plans call for the breaking of ground for the new mill about the middle of March. The plant, which will be constructed under contract by Southwestern Engineering Company of Los Angeles, is designed to treat 2,500 tons of low-grade copper ore daily, with an estimated production of 10,000 tons of copper a year. The present mill is treating 275 tons of ore a day, resulting in about 800 tons of copper a year, and has been in continuous operation for the past two years.

The Bagdad mine is owned by the Bagdad Copper Corporation, 480 Arcade Building, Cleveland, Ohio, and the property, including the townsite, mill site, and damsite, covers an area of approximately 4,500 acres. S. A. Millikin of Cleveland is president of the company, and J. W. Still, Hillside, Arizona, is general manager.



CALIFORNIA MINING JOURNAL ANSWERS NIXON'S STATEMENT

THE California Mining Journal, in its February issue, is pursuing the Oregon tin controversy by replying to a statement made by Earl K. Nixon, director of the Oregon State Department of Geology and Mineral Industries, in the December issue of *The Ore Bin*, and reviewed in the January 15, 1942, issue of *The Mining Journal*.

The statement makes it necessary, the California Mining Journal states, "to again go into the matter of the dispute concerning the presence of tin in the Juniper Ridge deposit, 34 miles west of Burns, Oregon. Nixon's statements also make it necessary to print his letter written our editor January 14, 1941. . . . Nearly everything that Nixon criticizes in *The (California Mining) Journal* appears in his own letter, which definitely commits him to the belief that there is metallic tin in the Burns deposit. It definitely states that he is positive that the Department of Interior, Division of Investigations Engineer, who happens in this case to be Arthur C. Kinsley, . . . 'is definitely convinced that tin is present' in the Burns deposit. So positive is Nixon that Kinsley is right that he was sure 'Kinsley's findings would settle the whole matter'."

The California Mining Journal further declares, "Nixon accuses *The Journal* Editor of maligning the U.S.G.S., the Bureau of Mines, and his own department. . . . In his letter, Nixon shows no confidence in the Bureau of Mines, the highest authority in the nation, when he states that there is no use in bringing them into the controversy as they are prejudiced, having already made up their minds that there is no tin in the deposit."

"And at this point," the California Mining Journal continues, "we might again bring out the fact that the man that Nixon's department will depend upon to make the final decision on the Burns ore admits himself that only once in his life has he ever before assayed for tin. If there is any maligning in this statement, Dr. Harrison, the expert from New York, pins this rose on himself."

The above mentioned Dr. H. C. Harrison, spectroscopist and chief chemist of the Oregon Department of Geology and Mineral Industries, is reported by the department, in a statement issued on December 11, 1941, to have made a total of more than 5,000 individual tests of samples from various parts of the Juniper Ridge deposit. The Oregon department's statement announced that "Dr. Harrison's stated conclusion is: 'No data have been obtained by me to indicate that any of the Juniper Ridge samples, believed by us to be representative, that I have analyzed contain commercial quantities of tin in any form. The tin content of this rock probably varies from 0.001 to 0.05 per cent.'"

The statement by the Oregon department further declares that "some 35 different methods of preparing the sample or getting the tin, if any, into proper form for final analysis were used. . . . These methods failed to show commercial quantities to be present."

Concentrates from Western States

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



War conditions permitting, the **Nabesna Mining Corporation**, Carl F. Whitham of Nabesna, Alaska, president and general manager, expects to resume work around May 1, with the mill going into operation July 1 on a year-round schedule. During 1941 the company developed an ore body about one mile distant from previous workings. A 500-foot tunnel was driven and a truck road was built to the new workings. Ore will be trucked the two miles from the ore bins at the new development to the mill in six-ton International dump trucks. The mill is a 100-ton flotation and gravity concentration plant, which will treat 50 tons daily. On the staff at Nabesna are August Sundstedt, mill superintendent, and C. R. Gammon, master mechanic. Claude Stuart of Chitina, Alaska, is secretary. A crew of 45 men is employed during normal operations.



The **Clemenceau Mining Corporation**, Jerome, Arizona, has made its first distribution of 20 cents a share on its stock. The total amount of the payments, which were authorized by the directors at their meeting on November 25, 1941, was \$210,010 payable on January 14, 1942. The Clemenceau company was organized on November 8, 1939, to take over the property and debts of the old **United Verde Extension Mining Company** when it was liquidated. In a statement issued to stockholders it was announced that "your directors deferred taking action towards any distribution until this time because of litigation, but now deem the present distribution warranted. However, other claims and liabilities require the maintenance of a substantial cash reserve for the time being." R. D. Leisk, Box 1080, Kellogg, Idaho, is president of the corporation, and S. E. Smith, Box C, Jerome, Arizona, is secretary.

A carload of ore has been shipped from the **Flores** mine in the Cerbat district 12 miles north of Kingman, Arizona. Floyd Brown, Kingman, is operating the property.

The **Silver Plate Mining Company**, James M. Layman, manager, Box 1202, Jerome, Arizona, is employing 19 men at its property in the Verde mining district near Jerome, and expects to increase that number to 40 or more in 60 days. The company is continuing shipments of ore to the Clarkdale smelter, and during the

past year 10 to 12 cars have been sent out. New workings showing 4 per cent or better in copper ore are reported to have been opened up. Ore values are chiefly in gold. The Silver Plate company holds the Green Monster property, the Verde Combination and Gibbs Kingdon groups, the Silver Plate, and the Smith group of claims. Principal offices of the company are at 1535 Dime Bank Building, Detroit, Michigan. Walter I. McKenzie is president; Edward W. Diehl, vice-president; A. W. Sempliner, secretary; and Alex J. Groesbeck, treasurer.

The **Boulder Mining Company** closed down operations at its **Hillside** mine, Hillside, Arizona, on January 22, 1942, and will go on a stand-by pumping basis during the period necessary to arrange details for doubling the capacity of the 100-ton flotation mill. Last year the mine produced over 2,000,000 pounds of lead and zinc metals besides the gold and silver content. The vein has improved in width and grade on each level below the seventh and justifies the projected mill expansion. During the shutdown period diamond drilling will be carried on to locate extensions of the ore body, and later on shaft sinking will be resumed on the eleventh level. Pitt W. Hyde, Hillside, is general manager of the company; James W. England, Jr., of Philadelphia, is president; and Colonel Percy E. Barbour of New York City is consulting engineer. Other local officials include R. L. Davies, mill superintendent, and Henry L. Williams, Jr., mine superintendent.

The **Mercuria Mining Corporation** has started production of quicksilver in the Sunflower district north of Mesa, Arizona. This company has taken over, under lease and option, the Ord mercury mine and mill and has executed a purchase contract on the Reynolds' **Mercuria** mine. Seven men are employed at present, but this number will be increased as work gets under way. Most of the ore at present is coming from the Mercuria mine and being taken to the Ord mill for treatment. Albert H. Johnson, Box 918, Mesa, is superintendent at the mine. O. E. Supple, 1943 1/2 North Argyle Avenue, Hollywood, California, is president of the company; James McFarland is secretary; and Johnson acts as treasurer.

W. A. Bechtel Company, 155 Sansome Street, San Francisco, California, has been awarded a contract for all construction work preliminary to production at the properties of **Castle Dome Copper Com-**

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.

pany, Miami, Arizona. The top floor of the Copper Belt Building has been rented by the construction company to house its large engineering, technical, and accounting staffs. The **Castle Dome** company, an affiliate of Miami Copper Company, recently was granted a loan of \$9,000,000 by Defense Plant Corporation for the development and equipment of the large, low-grade holdings which, it is estimated, will produce from 2,500,000 to 4,000,000 pounds of copper monthly.

Victor L. Smith, Rollo Ellis, and associates have had an engineer from the United States Geological Survey examining their iron deposits, five in all, near Bouse, Arizona. An electric smelter is planned, using high frequency current. A substantial tonnage of a satisfactory grade of iron has been discovered, and tests show that sulphur and phosphorous are absent. This factor, under the reduction methods to be used, will enable the operators to obtain a product comparable to Swedish steel.

About one car of high-grade gold-silver-lead ore is being shipped to El Paso every two months from the **New Jersey** mine 1 1/2 miles east of Chloride, Arizona. Henry Green and Charles Slaughter of Chloride are leasing the mine. Horace Armishaw, Chloride, is agent for the property.

Frank Horbelt, Horace Armishaw, and Ben Jacobi are working the **Tuckahoe** mine two miles west of Chloride, Arizona. Values are in silver and gold, and shipments are being made to the Producers' mill at Chloride.

The **Post Gold Mines, Inc.**, recently incorporated by William M. James, president, and Tom L. Crowdis, vice-president, both of Oatman, Arizona, and J. H. Hoffman, secretary-treasurer, Kingman, Arizona, has taken over the Post group of six unpatented claims in the Silver Creek area near Oatman. Sampling of the property is said to have shown satisfactory mill values with some high-grade, and a potential tonnage which may be developed into a successful operation.



The **Lake Tahoe Gold Mining Company** has taken over under bond and lease the property formerly held by the Tahoe Treasure Consolidated Mines, Inc., Harvey C. Winslow, president, Box 1188, Bend, Oregon. The property is in Placer County, California, and Clarence M. Hawkins, Placer County Bank Building, Auburn, is resident agent. Twenty thousand dollars are reported to have been spent in development work on the property, resulting in a satisfactory showing of ore, and it is planned to start production this year. The Tahoe Gold Mining Company was incorporated recently with a capitalization of 1,000,000 shares, par value \$1. W. A. Snyder of Denver, Colorado, is president, and C. A. Rodgers, Dixon, California, is vice-president.

Robert M. Ewing, Nevada City, California, is reported to be planning to re-open his **Queen of Mt. Oro** mine in the near future. The property adjoins the Fisher Maiden mine in the Mt. Oro district of Nevada County, California.

Milling is under way following reconditioning of the plant at the **Ontop** mine in the Bucks Lake district near Quincy, California, and operations will continue throughout the winter. Howard E. Fowler, Bucks Lake Lodge, Quincy, and D. H. Mitchell, also of Quincy, are the sole owners and operators of the property.

Production is under way at the **Silver Prince** mine in the Middle Buttes district near Mojave, California. The property has been under lease and bond to the Cactus Mines Company, which extracted over 5,000 tons of gold-silver ore between January and May in 1941, at which time the lease was given up. The present owners, Frank W. Roger and Joseph A. Otto, 1721 West Forty-Second Street, Los Angeles, have taken out 500 tons of ore since then and are considering sinking of another shaft farther north. The present shaft is 600 feet deep, and other development includes over 6,000 feet of drifting and crosscutting and stoping. Water level is at the 520-foot depth. The main vein, said to be over 60 feet wide and of low-grade ore, is a continuation of the Cactus vein. Otto has completed over 700 feet of drifting at his **Crescent** mine, a large low-grade property adjoining the Cactus which will be taken over by lessees.

The **Channel Mining Company**, Wayne Fox, president and general manager, 2355 Polk Street, San Francisco, California, is carrying on a development and construction program along with some production at its **Weed's Point** hydraulic mine near Camptonville, California. A new compressor has been purchased; 900 feet of new sluice have been completed with 600 more to be built; a new 18-inch pipe line, 500 feet in length, to the monitors will be laid; and a 10-ton hoist has been installed. Other completed work includes a two-mile ditch, flumes and pipe lines for 1,000 miner's inches, a reservoir, penstock, weir for two acre feet; and 20,000 cubic yards of gravel have been blasted. The company plans to install a hydroelectric lighting unit, including Pelton wheel and generator, enlarge the reservoir to 11 acre feet capacity, and purchase a power grinder for jack bits. The gold is recovered by sluice boxes and undercurrents, and jigs to recover the fine gold, platinum, and chrome will be added later. A crew of eight has been employed during the periods of testing, proving, and developing the property; however, 18 to 20 men will be working during full production. Julius Cassano, Camptonville, is mine and mill superintendent. G. Gilbert Greene, 720 Miramar Street, San Francisco, is chief mechanical engineer; Lloyd Woltzen, 50 Urbano Drive, San Francisco, is chief field engineer; and Marian Marquardt, 1600 Tenth Avenue, San Francisco, is secretary and purchasing agent. Charles Rinde, 406 West Oak Street, Lodi, California, is consulting engineer for the company.

Twelve men are employed by **McLaughlin and Applegarth Company**, 3001 Russ Building, San Francisco, California, at its chrome property in the Elder Creek district 31 miles west of Red Bluff, California. Daily production amounts to five tons. The project is conducted under the management of the engineering firm of Wright, Dolbear and Company, 206 Sansome Street, San Francisco. Arthur O. Hall, Red Bluff, is engineer in charge.

Trebor Corporation, Robert D. Mueller, president, Mariposa, California, is employing 18 men and producing 2,500 cubic yards of gold gravel daily with its dragline dredge. Gold is recovered by riffles on the floating-type washing plant. Charles R. Smith is assistant vice-president and Lucien W. Smith, Jr., is secretary, both of Mariposa.

Three to five flasks of mercury are produced daily at the **Lea-Grant** mine, Paicines, San Benito County, California. Equipment includes a 65-ton Gould furnace, and a 210-cubic foot Gardner-Denver D4600 and 60-cubic foot Gardner-Denver compressor. Twenty-eight men are employed under the direction of E. H. L. Mitchell, general manager, Paicines. Rex Thompson is mine and plant superintendent. The company is a partnership, comprised of Spencer Grant, managing partner, 206 Sansome Street, San Francisco, and Colonel Robert W. Lea, 22 East Fortieth Street, New York City.

During 1941 the **Red Star Mining Company, Inc.**, 210 Post Street, Room 911, San Francisco, California, completed two

miles of ditch and flume and will build three more miles in 1942, before starting operation of the mine. All equipment has been purchased and is on the property, located near Foresthill in Placer County, California. The gold placer will be mined hydraulically, using a sluice box mainly in recovery of the values. D. M. Ray, Georgetown, California, is president of the company; J. A. Shields, Auburn, California, is consulting engineer; and A. F. Eriksen, 2510 Chanote Road, Santa Rosa, California, is secretary and purchasing agent. A crew of 25 men is employed at the present time.

Bodies of scheelite are reported to have been discovered on various levels at the **Idaho** mine of **Idaho Maryland Mines Corporation**, Albert Crase, general manager, Grass Valley, California, and a program for extracting this mineral is under way. During the First World War, it is said that over \$100,000 worth of the ore was taken from this mine.

Dredging operations are expected to start about March 1, 1942, at a location northwest of Randsburg, California, where **Rand Gold Dredging Associates** is engaged in assembling a steel floating dredge. Two tractors and a large dragline are used to dig a pit, which, when completed, will be 150 feet wide, 200 feet long, and 12 feet deep. The dredge, which is being dismantled and brought to the location from Cottonwood, California, will operate with a bucketline of four cubic feet capacity and will dig to a depth of 45 feet. Three wells have been drilled to provide water for the project. M. E. Howard, Box D, Randsburg, is superintendent of operations and Ellery Sanders is directing assembly of the dredge. Newton Cleaveland, 351 California Street, San Francisco, is consulting engineer for the organization. Dredge Placers, Inc., is the management company for **Rand Gold Dredging Associates**.

Argonaut Consolidated Mining Company, 251 West Fifty-seventh Street, New York, declared a cash dividend of \$1.10 a share payable December 27, 1941. At the same time stockholders of the company were entitled to receive two shares of **Argonaut Mining Company, Ltd.**, stock for each seven shares of Argonaut Consolidated Mining Company stock. The distribution was made pursuant to a plan of liquidation approved by stockholders of Argonaut Consolidated on December 23. The company, which operates mining property at Jackson, California, as the Argonaut Mining Company, Ltd., converted into cash all its assets except stock of Argonaut Mining Company.

Twelve men are working at the **Ancho-Erie Mining Company** property near Graniteville, Nevada County, California. A new road has been completed from Highway 20 to the mine. A tunnel in the mine has been driven over 500 feet, resulting in the encountering of a satisfactory grade of ore. A ball mill under construction at the property is scheduled to be in operation in the near future. C. A. Helbach, 370 Alta Street, Grass Valley, is president of the company, and Fred Anderson, Grass Valley, is superintendent.

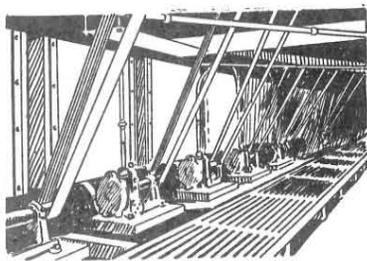
AVERAGE PRICES OF METALS
(Figures by American Metal Market)

	Copper Per Lb. Conn. Valley	Lead Per Lb. New York	Zinc Per Lb. St. Louis	Silver Per Oz. New York
1913	15.52	4.40	5.61	59.79
1914	13.31	3.87	5.11	54.81
1915	17.47	4.67	14.16	49.68
1916	23.46	6.83	13.57	65.66
1917	29.19	8.71	8.93	81.42
1918	24.68	7.46	8.04	96.78
1919	18.90	5.81	7.04	111.12
1920	18.05	8.08	7.77	100.90
1921	12.33	4.55	4.67	62.65
1922	13.67	5.71	5.74	67.52
1923	14.75	7.25	6.66	64.87
1924	13.28	8.08	6.35	66.78
1925	14.30	9.02	7.66	69.06
1926	14.05	8.42	7.37	62.11
1927	13.17	6.75	6.25	56.37
1928	14.81	6.31	6.03	58.18
1929	13.35	6.83	6.49	52.99
1930	13.23	5.52	4.56	38.15
1931	8.37	4.24	3.64	28.70
1932	5.79	3.18	2.88	27.89
1933	7.28	3.87	4.03	34.73
1934	8.66	3.86	4.16	47.97
1935	8.88	4.06	4.33	64.27
1936	9.71	4.71	4.90	45.09
1937	13.39	6.01	6.52	44.80
1938	10.22	4.74	4.61	43.22
1939	11.20	5.05	5.12	39.08
1940	11.53	5.18	6.34	34.77
1941	12.00	5.79	7.48	34.78
1941				
Jan.	12.00	5.50	7.25	34.75
Feb.	12.00	5.60	7.25	34.75
Mar.	12.00	5.77	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	34.77
Dec.	12.00	5.85	8.25	35.13
Av. 1941	12.00	5.79	7.48	34.78
1942				
Jan.	12.00	6.28	8.25	35.13

Union Consolidated Mining Company, is producing 10 to 15 tons of gold-silver-lead ore daily which is treated in its 50-ton flotation mill at its Oro y Plata mine, Murphys, California. The company is installing equipment and starting operations on the Phoenix Lease at Murphys. Seven men are employed. J. C. Scoles, Murphys, is president and general manager of the company; John P. Isaacs, Murphys, is secretary; and John E. Shaw, Murphys, is mine superintendent.

Western Manganese Mines has made its first shipment amounting to nearly 500 tons of manganese ore from the Lakeview mine near Crescent Mills, Plumas County, California. Production is to be increased to 50 tons daily and at a later date is expected to reach 100 tons daily. According to a report by the United States Geological Survey, around 40,000 tons of ore are in sight and a possible total future production of 500,000 tons is estimated. All production is for government account. O. H. Griggs, 745 Rowan Building, Los Angeles, California, with associates, is conducting the operation.

A 120-ton mill, using hydrometallurgy to reduce the copper ore, has been installed and is in operation at the old Independence mine in the Ord Mountain district of California. The mill is located on the part of the property (which is now known as the Copper Strand mine) belonging to Levi P. Haney and Hosea Lee, both of Daggett, California. They are operating five tanks of the hydro-metallurgical



plant while additional tanks are being built. The ore is to be quarried and delivered to the mill over a double cable operated by gravity, the loaded carrier going down pulling the empty one back up to the loading chute. The remainder of the old Independence mine contains most of the development work, consisting of a 500-foot shaft and 1,200 feet of tunneling. That part of the property belongs to A. E. and Levi P. Haney, who also own the Star Consolidated near Dagoon, Arizona.

A notice of dissolution has been filed by **Grass Valley Bullion Mines, Inc.**, F. W. McNear, president, Russ Building, San Francisco, California. **Idaho Maryland Mines Corporation**, Albert Crase, general manager, Grass Valley, California, is a major stockholder in the company and has operated the property for the past several years. There has been no production at the mine since a strike was called in May of last year, and only maintenance crews have been kept at the property. Idaho Maryland Mines Corporation has advertised the equipment at the Bullion mine for sale.

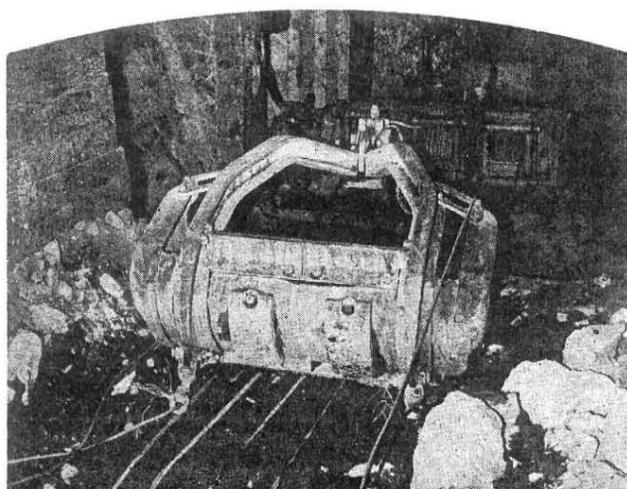
Construction of a beneficiating and milling plant to handle magnesite from a property in Kramer Hills, San Bernardino County, California, is under consideration. The property, comprising 2,640 acres, is being explored, and drilling is under way by Bowling-Garner, mining engineering firm of Chicago and Los Angeles, in collaboration with Santa Fe Railroad engineers. The property is owned by a community of claim holders, the principal owners being George C. Page, James Bradley, and Ben Sisco, 11501 Calvert Street, North Hollywood, California. The plant will operate as a flotation unit to beneficiate the ore which will be used for refractory material manufacture, caustic magnesite, and for the manufacture of metallic magnesium. About 800 pounds of carbon dioxide (dry ice) will be a by-product from each ton of ore treated. The dead burned magnesite is used for the making of furnace lining brick and refractory materials necessary when intense heat is required. Chemicals from the caustic product are used in the pharmaceutical industry.

Big Four Operators, Inc., plans an intensive development program in the spring at the J. M. Gardner gold mine north of Kelsey, California. Work will include sinking the 55-foot shaft to 160 feet and cross-cutting into ground believed to contain a continuation of a rich vein of ore. The property comprises 80 acres of mineral ground and has been under development by the present company for the past two or three years. W. T. Robbins, E. H. Shields, G. L. Smith, and Charles Votaw,

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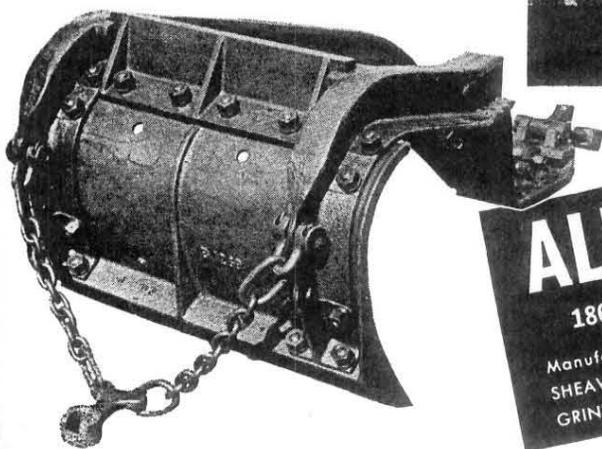
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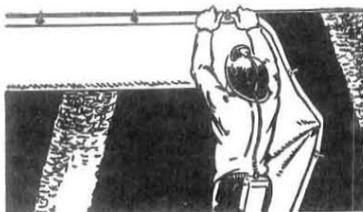
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all of Greenwood, California, make up the company.

Central Eureka Mining Company, C. C. Prior, president, 111 Sutter Street, San Francisco, California, has announced that future dividends, as declared, will be paid quarterly instead of bi-monthly. Since April 1940, payments have been made on a regular 8-cent bi-monthly basis. In 1941 a total of 48 cents a share was paid, against 46 cents in 1940. It is understood that the company will consider a dividend disbursement at a meeting on February 19.

E. D. Foster, engineer of 437 Consolidated Building, Los Angeles, California, with **J. B. Marston** of Ridgewood, New Jersey, and **Earl S. Bunting**, has taken a 99-year lease on the **Gold Hill** mine adjoining the Foster mines and **Glory Tintic** mines on the north in the **Shadow Mountain** district of California. The property consists of 400 acres in which many commercial ore bodies have been developed in more than half a mile of underground workings. One part of the property contains a large outcrop of lead-bearing ore suitable for mining by power shovel and large-scale production; however, because of inability to obtain the necessary machinery at this time, several of the high-grade ore-shoots are being prepared for production and shipment. The **Stewart** shaft, now down 30 feet, has been equipped with headframe, hoist, and compressor, and ore is being taken out during the sinking program. Shrinkage stoping of the vein will be employed when ground is sufficiently opened up. According to Foster, 20 exposures of shipping-grade ore have been made in the past four months, and two more shafts are to be sunk in the immediate future, for which full equipment is on the ground. Two major low-grade gold ore bodies, already developed for power shovel mining in the 3,000 acres controlled by Foster and Marston at **Shadow Mountain**, will lie idle for the duration of the war. All resources of the organization will be concentrated on lead production. The Foster group of mines includes the **Replacement**, **Golden Star**, **Glory Tintic**, **Grey Copper**, **Gold Slab**, **Yucca Lily**, and **Balboa**, besides the **Gold Hill**. Foster is sole trustee of Foster Mines. Bunting is addressed at **Valley Wells**, via **Nipton**, California, which is also the mine address.



Four monitors are in operation at the **Canyon Creek** placers near **Dedrick**, California, and a large amount of profitable gravel is reported available for working. **George H. Bergin**, with associates, conducts the operation.

Following heavy December rains which have provided an abundant water supply, the **North Fork Placers** near **Helena**, **Trinity** County, California, are being operated by **Ward Brothers**. The property is said to be one of the best equipped hydraulic properties in the state.

Development work is in progress at the **Texas Hill** gold mine, **Coulterville**, California. **W. J. Beatty** is general manager; **G. A. Ogden**, mine superintendent; and **F. L. Cullers**, mill superintendent. **B. M. Snyder**, 117 South Sycamore, Los Angeles, is consulting engineer. The property is under lease from **G. Ross Frank**, 915 **Shreve** Building, San Francisco.

The **Salmon River Gold Dredging Company** has completed dredging on the **Salmon River** near **Forks of Salmon**, California. A crew of 18 men has been employed, using a dragline and floating washing plant. The company is composed of **George G. Titzell, Jr.**, 310 **Kearney** Street, San Francisco, California, and **J. P. Wood**, **Yreka Inn**, **Yreka**, California, general partners. **F. F. Titzell** is a limited partner. **F. A. Warren**, **Miner** Street, **Yreka**, is dredgemaster.

Four men are working at the property of the **Jeanette Grant Mining Company**, where the 30-ton cyanide plant is operating on tailings. Values are in gold, silver, and antimony. **N. C. Anderson**, 22102 **Covello** Street, **Canoga Park**, California, is mine superintendent.

The 75-ton concentration mill under construction at the **Eagle's Nest** mine of the **Long Valley Mining and Milling Company**, **Fargo**, **F. Rose**, general manager, **Pine Valley**, California, is expected to be completed by **February 1, 1942**, and the

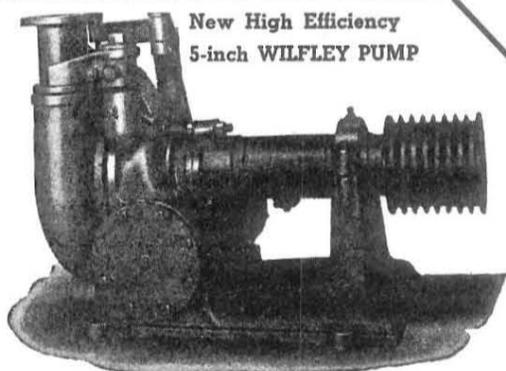
company will handle custom ore. It is planned to sink 300 feet before stoping at the **Eagle's Nest** mine, and this work is scheduled to start about **March 1**.

Production of quicksilver continues at the **Mount Diablo** mine, **Clayton**, **Contra Costa** County, California. Fifteen men are employed in the mine and five in operation of the furnace. The property is under lease from the **Mt. Diablo Quicksilver Mining Company, Ltd.**, to the **Bradley Mining Company**, **Worthen Bradley**, president, 425 **Crocker** Building, San Francisco, California. **Phil W. Cox**, **Clayton**, is general superintendent, and **Vic Blomberg**, **Clayton**, is mill superintendent. **F. A. Hammersmith**, 920 **Crocker** Building, San Francisco, is purchasing agent.

Edward B. Pond, **Alleghany**, California, and associates have organized the **Alleghany Lode Mining Company** with a capitalization of \$50,000. Directors of the company include **Pond**, **George Aye, Jr.**, **Berkeley**, and **Julliard McDonald**, **Geraldine McDonald**, and **Bert C. Austin** of San Francisco.

Heavy snow has forced a suspension of operations at the **Poverty Hill Properties** near **La Porte**, **Sierra** County, California. Work will be resumed in the spring. **Army Adams**, 714 **West Main** Street, **Grass Valley**, California, is superintendent of the property. **Walter W. Johnson**, 910 **Balfour** Building, San Francisco, is general manager.

Steel rails and other equipment at the **Murchie** mine of the **Empire Star Mines Company**, **Nevada City**, California, are being salvaged, and upon completion of this work, the **Murchie** miners will be transferred to **Happy Camp**, **Siskiyou** County, California, where they will be employed at the **Gray Eagle** copper mine. For the present operations will be continued at the **Zeibright** mine near **Emigrant Gap**. However, if it is decided to close down the **Zeibright**, it is understood that driving of the tunnel from the **Yuba River** to the mine will be continued. The purpose of the tunnel is to dispose of tailings from the **Zeibright** mill. **Robert Hendricks**, **Nevada City**, California, is manager of the **Murchie** and **Zeibright** mines. The **Gray Eagle** is controlled by the **Newmont Mining Corporation**, which is also the parent company for **Empire Star**.



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The old **Pine Tree** mine seven miles from Tehachapi, California, formerly worked for gold, is now producing tungsten. According to J. R. Harless, superintendent, the tungsten ore has been found in all workings of the mine, and will be developed as soon as possible.

The U. S. Bureau of Mines has entered into agreements with two firms, the **Riverside Iron and Steel Corporation**, Harlan H. Bradt, president, Room 2510, 55 Liberty Street, New York City; and the **Iron Queen Mining Company**, Grant W. Briest, vice-president, for extensive federal exploration of mineral claims in the isolated Eagle Mountain district of Riverside County, California.

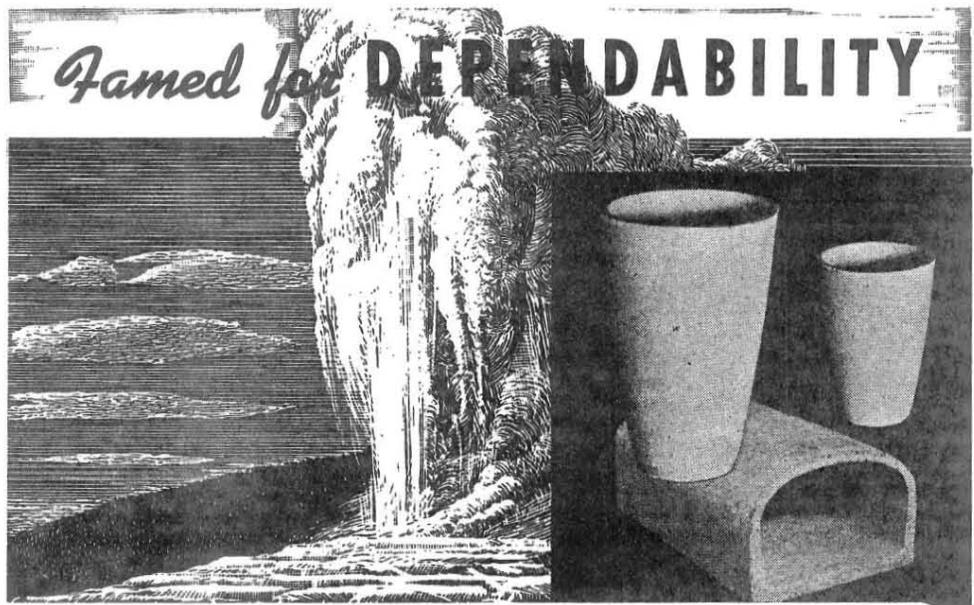
Frank Stall and associates have taken over a copper property in the Ophir district near Auburn, California, and Stall is directing work at the mine. Stall is well known in the National district of Humboldt County, Nevada, where he carried on extensive mining operations with his brother, George.

Installation of a new 100-ton amalgamation-flotation plant has been completed at the Niagara mine of the **Lincoln Gold Dredging Company** near French Gulch, California, and it is operating on dump ore. Eleven men are employed at the property, and underground and surface mining is scheduled to begin soon. Paul A. Bundy, Nevada City, California, mining engineer, directed construction of the new mill. The Lincoln company is comprised of Walter K. Jansen, Lincoln, California, E. M. (Bing) Clark, and associates.

Charles A. Gillis, Box 212, Angels Camp, California, and T. S. O'Brien, Amador City, California, are planning the erection of a 50-ton chrome concentrating plant on Peoria Flat near Angels Camp. O'Brien and Gillis have acquired a large acreage in the Peoria Flat district which they plan to mine by open-pit methods. It is estimated that 70,000 tons of chrome-bearing serpentine are available for mining and milling.

The **Arisota Corporation** is considering resumption of mining operations in the late spring at the **Scales** placer mine near Strawberry Valley, California. The property comprises 14 claims thought to contain around 35,000,000 cubic yards of gold-bearing gravel. The Arisota company is headed by Thomas Bardon, 120 Broadway, New York City.

The **Crusader Gold Mining Company**, William E. Payne, president, 601 Vernon Street, Oakland, California, is constructing a small mill which will have a capacity of 25 tons daily at its property near Diamond Springs, California. The company expects to start a development program in about 90 days at which time a shaft will be sunk 300 feet and drifts run on the 200 and 300-foot levels to open up a large body of ore of a higher grade. It is planned at that time to step up mill capacity to 50 tons daily. A small crew of men has been employed in preliminary development, including road work, installation of machinery, repairing of the shaft collar and shaft, and miscellaneous work. On the 100-foot level a drift has been run for



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about 75 feet. L. H. Crippen, Diamond Springs, is general manager. The property is under lease from the Starlight Mining Company.

A new shaft is being sunk at the west end of the Valley View quicksilver mine near Paicines, California, and it is understood that active operations will begin soon. The property is equipped with a \$65,000 recovery plant which handles an average of 90 tons each 24 hours. The mine is under lease to the Panoche Quicksilver Mining Company, P. D. Burt, president and general manager, 1018 Mills Building, San Francisco, California, from Louis Sciochetti and George Valdez of Paicines.

Yuba Consolidated Gold Fields, F. C. van Deirse, general manager, 351 California Street, San Francisco, California, is handling 125,000 cubic yards daily in its gold dredging operations and is employing 330 men. The company is headed by Stanley M. Bolster, president, 50 Congress Street, Boston, Massachusetts. H. C. Perring, Hammonton, California, is general superintendent; E. T. Parker is purchasing agent; and G. A. Bigelow is engineer in charge of explorations. Both are addressed at 351 California Street, San Francisco.

According to reports, the **Zaca Mining Corporation**, N. H. Bennett, president, Russ Building, San Francisco, California, recently made a payment of \$11,436, redeeming its gold-silver properties which had been sold under mortgage foreclosure judgment. The sum is said to have been advanced by H. B. Chesser, Box 889, Reno, Nevada, who holds a \$15,000 mortgage and a long-time lease and option on all the Zaca property. The mine is being developed by considerable open-cut work as well as underground drifts. Equipment includes a 100-ton flotation mill. Ore values also include hubnerite. Francis Frederick, 922 Crocker Building, San Francisco, is consulting engineer.

A crew of 16 men is employed in mining and milling operations at the **Treasure Box** mine, Nevada City, California. Gold values are recovered by amalgamation. Frank Dillon, Nevada City, is president and general manager of the operating company, and F. M. Dillon, Grass Valley, is master mechanic.

COLORADO

A 50-cent quarterly dividend has been declared by directors of the **Golden Cycle Corporation**, headed by Merrill E. Shoup, Box 86, Colorado Springs, Colorado. Payment will be made March 10, 1942, to stockholders of record February 28. This is No. 244 of dividends paid by the company. Results of the Carlton tunnel are stated to have been better than anticipated. The company extended the Ajax shaft 280 feet, developing commercial ore. Shipments to the Golden Cycle plant have increased sharply.

A 500-cubic foot compressor will be installed at the **Ben Harrison-Croesus** property in the Trail Creek district near Georgetown, Colorado, by the new operators. The ground was recently taken under five-year lease by George Calloway, R. M. Calvert, and John and Jack Mollard, all of Idaho Springs. Work will be carried on through the main shaft, now down 250 feet, as soon as the shaft is retimbered. Hoisting equipment also will be installed.

The **Slide Mines, Inc.**, at Boulder, Colorado, has completed 50 feet of the 150-foot connection to the proposed 1,300-foot level. A 70-foot sump will be sunk, after which the company expects to bring this portion of the property into production. Ward E. Terry, 420 Security Building, Denver, is president of the company, which employs about 100 men in its mines and 75-ton mill. J. H. Rodgers, 1305 Euclid Street, Boulder, is general manager.

Electrification of the **Sunnyside** tungsten mill, also known as the Holmes and Gilson plant, in the Eagle Rock district of Boulder Canyon has been completed. Willis E. Gilson, Nederland Star Route, Boulder, Colorado, and associates operate the plant on custom ore. Ore from the Shattuck Chemical Company's Pueblo Belle mine is sent to the plant for treatment.

Core drilling is under way in the Mammoth tungsten mine near Boulder, Colorado, in an effort to develop new ore bodies. W. L. Tanner of Boulder and Guy Tanner of Nederland operate the

Mammoth, which is part of the Tanner group of tungsten claims and a 25-ton mill. Milling operations have been suspended during winter weather, but will be resumed in the spring.

George Jump, 728 Tenth Street, Boulder, Colorado, is operating one shift in the **Oregon** mine and mill, which he and associates operate under lease from the Vanadium Corporation of America. The property has been idle from 1919 until a year or so ago. Jump unwatered and retimbered the workings. Working with him are his sons, Bob and Bill, and a Denver man.

According to reports, the **Copper Cone, Inc.**, at Empire, Colorado, recently acquired under lease and option the Steuben and Lorna Doone claims, part of the Gold Fissure property a portion of which the company already held. Work will be done through the Gold Fissure shaft. Jay Lee Williamson of Empire is active in the company's management.

High-grade gold ore is stated to have been opened on the second level of the **John A. Logan** mine at Victor, Colorado, which is being operated under lease by A. B. Cobb of Cutbank, Montana, and associates. The first nine truckloads of ore from the strike netted \$151.59 a ton at the Golden Cycle plant and the next two loads assayed \$134 a ton, according to reports. Lynn Richmond of Victor is mine superintendent.

Zinc separation tests are being continued at the property of the **Veta Mines, Inc.**, at Telluride, Colorado, to determine the advisability of installing equipment to recover zinc values. So far the tests are reported to show successful results. The mill is a 500-ton plant and selective flotation will be added if testing results continue to be favorable. The company started testing in the spring of 1940. Mine holdings consist of the Smuggler-Union, Cimarron, and Tomboy properties. Harold S. Worcester of Telluride is manager and T. E. McCandless is chief engineer. John Ferguson, Jr., of Telluride is mill superintendent.

Part of the necessary equipment for the proposed mill is on the ground at the **Galty Boy** mine and more is being brought in as weather permits. Operators expect to have

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scientifically that silt never injures fish. They do indicate that under the conditions of the test (and we tried to establish a scientific control as far as possible) the oxygen content of the water, not the silt burden, was the important factor. In interpreting these results we must recall that quite possibly the silt, while not actually deleterious, might tend to decrease the value of a given stream for fishing by driving the fish to more pleasant surroundings, particularly in view of the findings in regard to the food content of silted streams. This, however, would not affect the total fish population but merely its distribution."

ARGONAUT CONCENTRATES ARE TREATED IN NEW CYANIDE PLANT

GOLD bearing solutions, weighing 150 tons, are treated daily in the recently completed cyanide plant of the Argonaut Mining Company, Ltd., at Jackson, California, with all equipment working satisfactorily, according to Earl M. Smith, mill superintendent. The process through which the concentrates go, after coming from the regrind mill, is explained by Smith as follows:

After the concentrates are thickened in an alkaline solution, the pulp is diluted in cyanide solution and treated in two stages of agitation with replacement of solution between stages. After the second agitation the pulp is thickened and filtered. The solution from the filter joins other gold solutions and is put through the precipitation unit. The pulp then goes to the waste piles.

The cyanide plant has been constructed in a portion of the giant mill building at the Argonaut mine. After the ore is mined and crushed it is ground in a 300-ton ball mill which is in continuous operation. The ball mill product passes through a classifier and is then treated by jigs and eight flotation cells. A 4 by 6-foot ball mill does the regrinding.

Equipment in the new plant includes three cyanide thickener tanks measuring 22 feet wide and 8 feet deep, working in closed circuit with a 12-foot hydro-separator, a 4 by 6-foot rotary drum-type filter, a 150-ton precipitation unit, and one 6 by 6 and one 8 by 8-foot agitator tank.

The company is mining 280 tons of ore daily and employing 240 men. Alex F. Ross, Jackson, is general superintendent and Robert Shea is mine foreman.

ASARCO TAKES PRECAUTIONARY WAR MEASURES IN MEXICO

CIA. CARBONIFERA DE SABINAS, S. A., a coal mining company at Nueva Rosita, Coahuila, Mexico, was the first mining enterprise in Mexico to suspend from its employ all Japanese, German, and Austrian workers. This measure was taken to prevent possible sabotage and other forms of Fifth Column activities, it was explained.

The company is a subsidiary of American Smelting and Refining Company. That company's properties in Mexico are being guarded by troops and government special agents as a precautionary wartime measure.

BUREAU OF MINES RECOMMENDS ERECTION OF SIX CONCENTRATORS

THE United States Bureau of Mines has recommended the purchase of milling grade manganese ores and the erection of six concentrating plants in Arizona, New Mexico, Utah, Montana, Arkansas, and Tennessee. The announcement was made by Charles F. Jackson, chief of the bureau's mining division. The recommendation was based on results of the strategic mineral explorations which have been in progress since August 9, 1939.

Jackson's report stated: "The bureau has found enough manganese ore to form a backlog to feed to the plants, and other small properties in the recommended region would provide sufficient additional ores to run the plants for some time. The largest of the plants, under bureau recommendations, would handle about 500 tons of ore a day." Recommended locations for the concentrating plants are in west central Arizona, southwestern New Mexico, west central Utah, at Philipsburg or West Butte, Montana, at Batesville, Arkansas, and in northeastern Tennessee. One of the largest manganese deposits in the country is in the Artillery Peak district of Arizona, where negotiations already are under way for starting production.

Jackson has been in Tucson, Arizona, collaborating with E. D. Gardner, supervising engineer for the bureau and in charge of all strategic mineral explorations west of the Mississippi. Referring to plans for the coming year's program for strategic mineral, Jackson said that no appropriate

tions have been made by Congress, but the bureau of the budget has approved the request for appropriations for work on the following strategic minerals: antimony, chromite, manganese, mercury, nickel, tin, and tungsten. The bureau of the budget also has approved the investigation of raw material resources for the expansion of steel production in the west and for the investigation of bauxite ore, alunite ores, and aluminum clay deposits.

According to Jackson, "The clay deposits will be of interest to the bureau only if they contain more than 2,000,000 tons of clay which has a content of more than 35 per cent aluminum oxide. These deposits must be within 100 miles of existing or contemplated aluminum oxide plants. This is because the per ton value of the clay is very low."

Next year's program will begin July 1. Projects will be selected which already have been investigated by the Bureau of Mines and Geological Survey.

HOMESTAKE DONATES \$5,000 TO RED CROSS WAR CHEST

A CONTRIBUTION of \$5,000 has been made to the Red Cross war relief fund by the Homestake Mining Company of Lead, South Dakota, General Manager Guy N. Borge announced.

It was given on the basis of the company's operations in various communities. The Lead Red Cross chapter received \$4,500; Deadwood and Spearfish, South Dakota, \$200 each; and Crook County, Wyoming, \$100.

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Mine Car Catalog—Mine cars and accessories, including the new Irwin patented rubber mounting, are shown in a catalog published by the Irwin Foundry and Mine Car Company, Irwin, Pennsylvania. Mine cars of 19 different types are illustrated along with the company's line of wheels and accessories and its double-chill disc-type wheels. The 24-page, two-color book also includes many illustrations of work at the Irwin plant as well as photographs of company officers. A copy of the catalog may be obtained by writing to the Irwin Foundry and Mine Car Company at Irwin, Pennsylvania.

Portable Ozone Units for Water Purification — The Technicraft Engineering Company, 5610 South Soto Street, Los Angeles, California, claims to have developed a portable, automatic unit that produces pure, clear, colorless, tasteless, and odorless water without the use of chlorine or other chemicals now restricted for military requirements. The unit, known as the Sterozone Model B, has a capacity in excess of 1,200 gallons per hour and can be installed on any tank or water storage container. For field use a 250-gallon canvas bag is used. Power is supplied from 110-volt, 50-60 cycle outlet or by a portable gasoline-electric generator. The sterilizing agent employed in the unit is ozone generated by silent electrical discharge maintained at 11,000 volts. Injected directly into the water passing through the unit, the ozone completely oxidizes bacterial contamination and produces the purified water, the company has announced. Complete

description of the Sterozone Model B, together with results of Department of Public Health and American Public Health Association laboratory tests of water treated by the unit, is available from the manufacturer.

A SUBSTITUTE FOR TIN IN BRONZE CASTINGS ANNOUNCED

ACCORDING to Wylie Brown, president of Phelps Dodge Copper Products Corporation, a substantial saving in the use of tin may be effected by the substitution of P-M-G "Hardener" in the production of bronze castings. This alloy hardener is manufactured in the United States exclusively by the Phelps Dodge concern.

In further discussing the product Brown stated that the P-G-M "Hardener" is being used by the Navy department and by private shipbuilding companies in very large tonnages as it has been found to be of exceptional value in the manufacture of bronze castings such as valves, pump bodies, impellers, flanges, valve trims, and many other types of castings, including projectile hoists and gun mounts.

The product was developed to be used in place of tin and, when alloyed with copper in proper proportions, a bronze product is produced that is said to be superior in physical and chemical properties to the regular tin bronzes. Navy specifications 46B28 and Federal specifications QQC-593, said Brown, already allow the use of the P-M-G "Hardener" in place of tin.

GOVERNMENT MAY BUILD HUGE ALUMINUM PLAN AT LOS ANGELES

IT HAS been reported that Defense Plant Corporation, subsidiary of the RFC, is considering construction of a large aluminum plant near Los Angeles, California, the project to represent an investment of approximately \$50,000,000. The selected site covers 256 acres and the structures alone are estimated to cost nearly \$30,000,000.

The project would include four main divisions in the fabrication of aluminum. An aluminum reduction plant would be built by the Aluminum Corporation of America to take ore concentrates from Arkansas and Louisiana plants, and remove aluminum oxide and impurities to produce pure aluminum ingots, amounting to 10,000,000 pounds monthly. An extrusion plant would be constructed by the Bohn Aluminum and Brass Company of Detroit to take aluminum ingots to make strengthening parts for airplanes. A third plant, which is being considered, would be a forge plant equipped with about 70 giant steam hammers to pound aluminum into various shapes. An aluminum rolling mill to mix aluminum with magnesium and other metals to produce airplane metals that are harder than pure aluminum also is included in the plans.

It was stated that all four plants together would consume nearly 200,000 kilowatts of electrical energy, approximately one-third the total output of Boulder Dam or more than enough to supply New York City.

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operators. It includes the reforging of the bit and the subsequent heat treatment and tempering. An ordinary sharpening machine is used for this purpose and the bit is reformed to its original size. However, reforging the detachable bit introduces the same disadvantages as were present in the original forged mine steel due to the high temperatures required.

IN THE course of developments certain mining properties have used other methods of reconditioning bits. Hot-milling has come to the fore recently and is looked on favorably by some mines as well as commercial shops. A large volume of bit reconditioning justifies this operation which employs furnaces for heating the bits, a hot-milling machine for reconditioning the bits and suitable furnaces and quenching equipment for rehardening and retempering bits. Naturally this work requires adequate control; first, to see that the bits are properly milled to size and, secondly, to see that they are properly heat treated and quenched. A recent analysis check of hot-milling reconditioning costs by one large property is shown in the accompanying table.

This brings us logically to the discussion of some of the advantages of the removable bit over the bit forged integrally with the hollow drill steel. Knowing that the bit must resist wear primarily, it is possible to select a steel analysis and a steel structure which will best resist the wear. The bit is not called upon to resist fatigue in the same measure as is the hollow drill steel. In the second place, a tailor-made bit made in a large manufacturing plant can be forged and fabricated under ideal and controlled conditions. Burning and cracking bits can be eliminated. Through controlled operations decarburized and lifeless material on the cutting edges of the bits can be eliminated. In the third place, the removable bit can be fabricated and

heat treated to uniform size, hardness, and other specifications. In the fourth place, a rigid inspection of the bits insures that no defective bits are carried into the mine. In the fifth place, the weight of the bit is so much less than the weight of a similar number of sharpened steels that the miner can easily carry with him a supply of removable bits sufficient for his requirements during his entire shift. In the sixth place, the investment in hollow drill steel and accessory equipment is considerably reduced. Seventh, the cost of handling the steel outside the mine is greatly reduced; and, finally, there are a great number of intangible factors which could hardly be evaluated, but which nevertheless are there, and in some particular cases prove to be the deciding factors.

To offset this imposing array of advantages for the detachable bit, in all honesty we must admit that there is one disadvantage. In order to get the full advantages of high-production manufacture in a tool such as the detachable rock bit, it must be made in large volume production. Manufacturing energies cannot be dissipated in the production of small quantities of a great variety of sizes and shapes. We are all ready to admit that for any particular piece of ground there is probably one design, one shape, one style, and one hardness of bit which is best suited to that particular piece of ground. But the detachable-bit manufacturer can only hope to make a bit which is best suited for a great many types of ground and there are cases where some of our advantages are offset to a certain extent by this one disadvantage. We are not ready to admit, however, that this one disadvantage is unsurmountable and cannot be overcome by a proper analysis of operating conditions and by the proper application of the knowledge which we have obtained thus far.

HOUSING IN NEVADA DESERT FOR BASIC MAGNESIUM WORKERS

ALMOST submerged by the magnitude and strategic importance of the 2,000-ton magnesium plant at Las Vegas, Nevada, is the problem of housing its employees. The old town of Las Vegas and the new town of Boulder City are unable to cope with the influx of people coming into Clark County as a result of the magnesium project. It is estimated that about 4,000 men will be employed by Basic Magnesium, Inc., when the plant is started some time this year.

Provision for these men and their families will be made by the construction of 1,000 demountable homes in the new temporary town to be built at the plant site, and barracks and tent cities near the plant will be designed for single men. A trailer camp for 1,000 trailers will accommodate 2,250 people. It is expected that employees and their families living in Las Vegas will number 3,800, while 925 will live in Boulder City.

The plant, now under construction, is located half way between Las Vegas and Boulder City and will treat ore from the company's mine in Gabbs Valley, 33 miles northeast of Luning in Mineral County. The construction crew of from 300 to 400 men at the mine, where a calcining plant is being built, is living in a recently completed tent city north of Luning.

KROME CORPORATION TO BUILD \$500,000 CHROMITE PLANT

IT HAS BEEN reported that the Krome Corporation has decided to build its \$500,000 chromite concentration plant near Port Orford in northern Curry County, Oregon, and construction work is expected to begin soon. The plant will treat the black beach sands of the Oregon coast to produce chromic oxide concentrates.

The company has been incorporated recently and is being backed financially by C. F. Corzelius and associates of El Paso, Texas. W. G. Hellier of Santa Cruz, California, has been named resident manager of operations for the new concern. The company is reported to be completely financed with all property purchased on an outright basis and sales arrangements with government agencies completed.

It is estimated that the proposed plant will handle approximately 1,000 tons of low-grade ore daily, with an output of over 100 tons of concentrates. It is understood that the electrochemical process will be employed for the recovery of platinum, gold, and other by-product metals. The open-pit method of mining will be used. As the company will market its entire output under a contract with the federal government, the concentrates will be shipped to a government stockpile. The new stockpile has been tentatively scheduled to be established at Coquille, Oregon.

The Krome Corporation is also planning to build a laboratory near the chromite plant, it has been announced. Experimental work will be carried on at this and other laboratories throughout the United States.

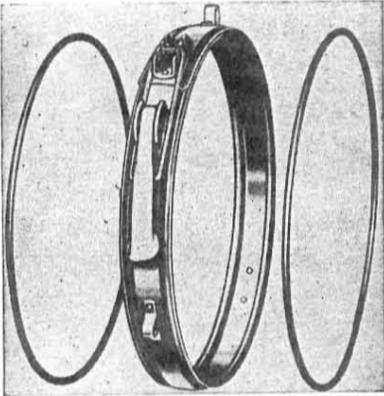
Operation	Total Pieces	Time		Total Labor Cost at 83½¢ per hour and Material Cost	Cost per 1,000 Bits
		Hrs.	Min.		
Milling	9,332	121	35		
		Man hours, 2 men		\$101.33	\$ 10.13
Tempering	9,292	72	12		
		Man hours, 1 man		61.89	6.66
Assorting and Distributing.....	2,000	8	00	6.64	3.32
	per shift				
Milling Cutter, maintenance.....	20,000	New Cutters (2)		70.00	
	Est. life	9 regrinds at \$15.00		135.00	1.03
	per cutter	For 200,000 bits		205.00	
Electric Power	9,332	60	07	10.65	1.14
for miller, 15 ½ HP (29.5 Watt hrs. per bit at ¼¢ per KW)					
Electric Power	9,292	74	12	.19	.02
Quenching Unit, ½ H P (.00084 Watt hrs. per bit at ¼¢ per KW)					
Furnace Fuel	9,332	60	07	10.37	1.10
Milling (950 cu. ft. per hr. at 18¢ per 1,000 cu. ft.)					
Furnace Fuel	9,292	74	12	11.67	1.25
Tempering (950 cu. ft. per hr. at 18¢ per 1,000 cu. ft.)					
		Cost Per 1,000 Bits.....		\$24.65	
		Cost per Bit.....		\$ 0.02465	

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ing property to a junction with the present road up the San Francisco River is to get under way. Stevens is working the ground under lease from Harry C. White, owner, also of Clifton.

The Aravaipa mine in the Aravaipa district near Klondyke, Arizona has been taken over by the Athletic Mining and Smelting Company of Fort Smith, Arkansas, and operations are scheduled to start in the near future. A. J. Klamt, Box 208, Safford, Arizona, represents the Arkansas company and has been engaged in examination of the mine for the past two months. The Aravaipa Mining Corporation was organized in 1925 and operations were directed toward milling of the lead values. Although concentration of the lead is said to have been satisfactory, the large percentage of zinc made the project unprofitable, and work was suspended in 1927. A large body of lead-zinc ore later was developed on the Iron Cap, Head Center, and Arizona claims. It is understood that the new operators, who have a zinc smelter at Fort Smith, are interested in the Aravaipa primarily for the zinc content in the ore. Charles T. and Raymond F. Orr head the company. C. A. Firth, Box 158, Safford is a director of the Aravaipa Mining Corporation.

Phelps Dodge Corporation began operation January 30 of its 25,000-ton concentrator which is handling ore from its open-pit mine at Morenci, Arizona. The plant, which is now operating at 12½ per cent capacity, is expected to be going at full capacity by April 1, 1942. Two of the 10 by 10-foot ball mills are in operation, and other units will be started as rapidly as possible. The ultimate capacity of 25,000 tons of 1 per cent copper ore daily will result in approximately 75,000 tons of anode copper a year. Starting of the concentrator climaxes 4½ years of development work and construction at Morenci. H. M. Lavender, Douglas, is general manager of Phelps Dodge.

A new compressor is being installed at the mine of the Shylock Mining Company northwest of Cherry, Arizona. The 1,000 level has been unwatered and drifting is under way on the 800 level where the best showing of ore was found. Eleven men are employed. 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. Values are in lead and zinc with some silver and gold.

Shipments of gold ore are continuing at the rate of one car a month from the Union Jessie mine in the Chapparel mining district near Humboldt, Arizona. Two men are employed. J. L. Burleson and Louis Pandrea, Humboldt, are leasing from the General Security Corporation, owner, 405 South Hill Street, Los Angeles, California.

Several shipments of gold ore have been made to Clarkdale, Arizona, from the Black Hawk mine, consisting of five claims in the Cherry Creek mining district of Arizona. The operators have been drift-

ing on the vein and will make steady shipments while sinking and doing further development work. The property is fully equipped, and four men are employed by J. C. Lovett, lessee, Box 487, Prescott, Arizona. R. H. Tucker, Box 54, Cherry, is owner.

Stanley A. Wardle, Cherry, Arizona, is shipping while developing at the Sitting Bull mine in the vicinity of Cherry. Values are in gold. Two men are working. The mine is owned by the Withers Estate, Lexington, Kentucky.

Three men are working at the Harrington claim, Crown King, Arizona, where milling has started, using a small mill, table, etc. Values are in gold, silver, and copper. Bernie Holzman, H. S. Kincaid, and R. Fuentes, all of Crown King, are leasing from Tom Priestly, Cleator.

The Springfield mine, Crown King, Arizona, is equipped with hoist and compressor, and three men are sinking on the vein. Values are in copper. J. H. Nelson, Louis Schrader, and R. S. Patterson, all of Crown King, are working the mine.

Mark Gemmill has rehabilitated old workings at the property of the Dundee-Arizona Copper Company at Jerome, Arizona, and will begin shipping. The copper ore, which occurs in three conglomerate beds, has been developed by extensive drifting, connected by raises and winzes.

Fred Busche and L. N. Wombacher, Camp Verde, Arizona, are shipping and developing at the Gold Eagle mine, Cherry, Arizona. The mine, which is opened by a 160-foot working shaft, contains values in gold.

A. N. Bennett, subleasing at the Gladiator mine, Crown King, Arizona, is mining and making shipments regularly. Values are in gold, silver, copper, lead and zinc. Five men are employed. D. W. Russell, Box 603, Prescott, Arizona, is owner of the property. The Gladiator Mining Company, E. M. Moores, president, Crown King, has the mine under lease and is subleasing to Bennett.



C. M. Hawkins, Alleghany, California, reports a six-foot vein of milling ore at his Pilgrim mine, which is opened by five levels. A considerable amount of ore has been developed. Last fall he installed 10 stamps, but a small amount of work remains before he can put the mill into operation. The property is located eight miles east of Alleghany.

The Etna Gold Dredging Company has shipped its dredge to the Yukon district in Alaska. The boat, which for the past two years had been working on Wildcat Creek near Callahan in Siskiyou County, California, ceased operations last fall. O. E. Bahrenborg, superintendent and dredge-master, plans to leave for Alaska in May to supervise the assembling of the dredge.

He also will be in charge of another dredge in the same district. Etna Gold Dredging Company is controlled by W. S. Mead and W. A. Kettlewell, both of 1730 Franklin Street, Oakland, California.

Development work is in progress at the Aetna quicksilver mine near Aetna Springs, California, along with milling of the dumps and ore from old workings. The property produces about eight months of the year at the rate of 45 tons daily. Equipment includes a 50-ton rotary furnace. An average of eight to ten men is employed under the supervision of J. F. Knapp, president and general manager, 1401 Park Avenue, Oakland, California. F. Hansen, Aetna Springs, is a mechanic at the mine. Knapp Corporation is operating the mine under lease from the Aetna Quicksilver Mines Consolidated.

From 1,500 to 2,000 yards of gravel are worked daily by the C. and E. Dredging Company near Fort Jones, California. A crew of 13 men is employed under the direction of Hugh Williamson, assistant general manager, Box 566, Fort Jones. Other officials of the company include A. B. Cutter, president, 1002 Pacific Building, Portland, Oregon, and Alton L. Collins, general manager, 909 Terminal Sales Building, Portland. Perry Sloop, Fort Jones, is chief clerk and accountant.

The Pacific Mining Company, P. R. Bradley, Jr., president and general manager, Jamestown, California, is producing 160 tons of gold ore daily and employing a crew of 45 men in the mine and 9 in the mill. The flotation mill has a capacity of 175 tons daily. The company owns and operates the Josephine and Pine Tree mines in the Bear Valley district. Harald Hansen, Bagby, California, is general superintendent; John Filippi, Bagby, is mill superintendent; M. D. Hill, Jr., Bear Valley, is chief mine engineer; Francis Frederick, 920 Crocker Building, San Francisco, chief geologist; L. L. Early, Coulterville, master mechanic; F. A. Hammer-smith, purchasing agent; and R. V. Joste, 1022 Crocker Building, is chief clerk.

A headframe is under construction at the new main shaft of the Harvard mine, known as the Number 3 shaft. Sinking of this shaft has been in progress for the past year, and the hoist was installed last fall. The property is operated by the Harvard Gold Mining Company, P. R. Bradley, Jr., superintendent, Jamestown, California. It is planned during the war crisis to continue only such surface construction as will require a small crew of men and a small supply of materials. At present six men are working in the mine and eight on the surface. P. R. Bradley, 1020 Crocker Building, San Francisco, is consulting engineer, and R. V. Joste, 1022 Crocker Building, is chief clerk. Joe Cavanaugh, Jamestown, is chief electrician. The company maintains offices at 926 Crocker Building, San Francisco.

The 50-ton flotation mill at the property of the Solid Silver Mining Company near Crescent Mills, California, will discontinue operations March 1, 1942. Guy Porter, 927 Small Street, Susanville, California, is manager of the company, and

L. G. Cox, Greenville, California, has been mill superintendent.

The Buckeye Mining Company, C. E. Fashbaugh, superintendent, Box 223, Lone Pine, California, is preparing for construction of a 60-ton plant to be built in four units of 15 tons each. The company owns or leases a number of properties in the district which carry several different kinds of ore such as lead, zinc, copper, gold, and silver, and in this plant it will be possible to run four different kinds of ore at the same time, or the entire four units can be run as one if desired. Each unit will consist of a crusher, ball mill, amalgamation, and table. Flotation will be installed and used on ore requiring it. Water will be supplied by gravity from

a large spring on property owned by Fashbaugh. The mill and other mining property are owned by Charles N. Clark, 330 West Amerage, Fullerton, California, and Fashbaugh. Plans are being made to take some custom ore from small producers, and a fully-equipped assay plant will be installed. The mill will be erected at the Mohawk mine about 11 miles from Lone Pine.

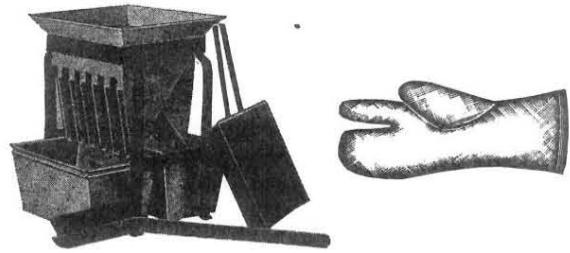
The Silver Spear Mining Company, J. Percy Hart, president, 803 Central Building, Los Angeles, California, expects to begin operations as soon as the snow is gone this spring at its holdings near Keeler, Inyo County, California. The company has taken over all of the holdings of the Cerro Gordo Extension Mining Company

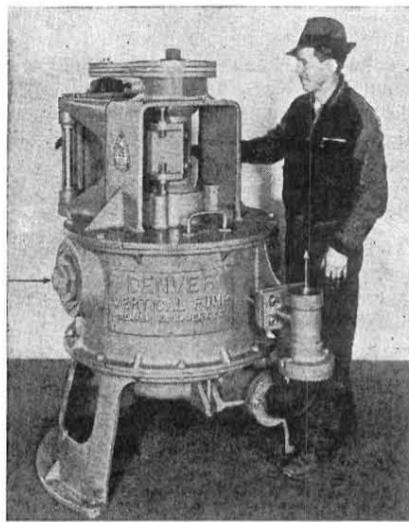


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which was dissolved almost two years ago. In addition to this property it also owns, outright, the **Cerro Gordo** mine and 23 unpatented claims, comprising an unbroken group of 73 mining claims, 43 of which are patented. There were no operations last year. Lead, zinc, and some tungsten are present in addition to gold and silver. The company maintains an office at 724 Arden Avenue, Glendale, California, and the post office address for the mine is Box 157, Keeler.

Five to ten flasks of quicksilver daily are produced at the **Sulphur Bank** mine, operated by the **Bradley Mining Company**. The company installed a new crushed-ore bin and conveyors last year, and has just purchased a new 44B Bucyrus-Erie, two-yard shovel and new Euclid dump truck. The quicksilver is recovered in a 50-ton rotary kiln. A crew of 72 men is employed under the direction of A. F. Wolbert, general superintendent. R. E. Boyce is assistant superintendent; J. M. Forrest, construction engineer; and Frank Robinson, chief electrician. All are addressed at Clearlake Park, California. Worthen Bradley, 425 Crocker Building, San Francisco, California, is president of the company, and F. A. Hammersmith, 920 Crocker Building, is purchasing agent.

Idaho Maryland Mines Corporation, Albert Crase, general manager, Grass Valley, California, has purchased the gold mine of Grass Valley Bullion Mines, Inc. The latter company has been dissolved, and stockholders of the company authorized sale of the property to the highest bidder. Idaho Maryland was a major stockholder in the company and had operated the property for the past several years. There has been no production at the mine since a strike was called in May of last year, and only maintenance crews have been kept at the property. Idaho Maryland Mines has announced a change from a monthly to a quarterly basis in payment of its dividends. In a letter to the stockholders it was stated that "the present urgent need for men to work in the defense areas has resulted in a considerable turnover of labor; and so many and such drastic changes in the income tax law have been suggested that intelligent action on dividends cannot be taken until the provisions of the 1942 income tax law are known."

The Permanente Metals Corporation, Latham Square Building, Oakland, California, has purchased a 237-acre tract of ground in the Cienega district of San Benito County, California, at a reported price of \$25,000. The company has been conducting tests of dolomite deposits, which have a high magnesium content, in this district. Roger K. Kirkpatrick, Hollister, California, has been in charge of the testing operations. Henry J. Kaiser, Latham Square Building, is president of the corporation, which has a new magnesium plant in operation near Los Altos, California.

According to reports, a manganese reduction plant will be constructed at Livermore, California, provided a supply of at least 500 tons of ore daily can be assured. The project would entail an expenditure of more than \$100,000. Ex-

tensive deposits of manganese ore are known to lie close to the surface of the Livermore Mountains, but the major portion of the ore is low-grade. However, at the present price of the mineral and with new reduction processes, it is thought that the ore can be handled profitably. J. O. Pulse, Box 14, Livermore, is owner of extensive manganese properties which would be included in the deal.

The Gibsonville Mining Company, F. W. Powers, president, 559 Sixteenth Street, Gibsonville, California, expects to begin mining operations in full force in about 60 days at its hydraulic mine. Work will be on a 24-hour basis, using three or four monitors. At the present time the property is closed down due to heavy snow. It is planned to construct more ditches, flumes, reservoirs, buildings, amalgam plant, and make other general improvements during the coming season. The company is a limited partnership comprised of Powers, Jerry Mason, and J. H. McMahon. Roy Post, La Porte, California, is general manager.

The Golden Storm mine at Westpoint, Calaveras County, California, is producing 10 tons of ore daily. The property is being purchased from Green Brothers of Westpoint by W. L. Lamkin and partner, 702 Second Street, Porterville, who are working two stopes on the 150-foot level and driving a crosscut to a quartz vein encountered in diamond drilling. It is planned to sink another 60-foot shaft soon and to purchase a 25-ton mill. Three men are employed at the property during the winter months.

C. Curtis, Auburn, California, is working the tailings at the **Gilford** property, using a dragline. The gravel contains broken quartz, carrying zirconium and black sand. Curtis has been using a regular cement mixer in his work, but now is installing a ball mill.



Seth Armstead, of Boulder, Colorado, is reported to be operating a block lease on the fourth level of the Logan mine of the **Victory Metals Company**. The mine is in the Crisman district near Boulder and is under the general management of K. F. Fulton, 835 Pearl Street, Boulder. Progress is reported in spiling through stope fills on the third level. This material is being removed and stored until such time as the 80-ton mill is put into operation. The prime objective on the third level is to open and develop a tungsten vein known to exist ahead of present operations.

It is reported that Thomas M. Walsh of Nederland, Colorado, has acquired the **Manchester** group of eight tungsten claims from the John Stroehle estate. The mine is located two miles northeast of Rollinsville in Gilpin County and was a producer during the first world war. It was last operated in 1940 by Stroehle and his sons.

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ICKES PROPOSES EXTENSIVE MINE AND POWER PROJECTS

(Continued from Page 6)

California

Exploration of titaniferous magnesites for vanadium production if greater supply is needed. Exploratory work on copper deposits in the Engels and Spring Garden districts; on iron ore deposits, and also on chromite deposits.

Colorado

Exploratory work on copper deposits in the Bonanza district; on lead in the Leadville, San Juan, and Rico districts; on zinc in the Leadville, Eureka and Rico districts; on carnotite (vanadium) deposits.

Idaho

Exploratory work on lead deposits in the Shoshone and Bonner districts; on zinc deposits in the Shoshone district.

Montana

Exploratory work on lead and zinc deposits in the Summit Valley district, and also on chromite deposits.

Construction of a custom mill to produce 90,000 long tons of manganese metal at Phillipsburg. Mining of 500,000 tons of manganese ore in the Phillipsburg district. Mining of low-grade deposits of chromite for production of chromium by new process developed by Bureau of Mines.

Nevada

Exploratory work on copper deposits in the Battle Mountain, Yerington, and Robinson districts; on zinc in the Pioche district.

Construction of a milling plant to produce 150,000 tons of manganese metal, and a hydro-metallurgical plant to produce 291,000 tons, and an electrolytic manganese plant to produce 12,000 tons annually, all at Las Vegas.

Mining of 2,850,000 tons of manganese ore at Las Vegas, 5,000,000 tons at Pioche, and 38,000 tons at Valmy.

Mining of dolomite deposits near Sloan for magnesium production.

New Mexico

Exploratory work on copper deposits in the Central, Fierro, Burro Mountains and Lordsburg districts, on lead in the Willow Creek district, on zinc in the Willow Creek district, and also on iron ore deposits.

Construction of a milling plant to produce 17,500 long tons of manganese metal at Deming. Mining of 150,000 tons of manganese ore in the Deming district.

Oregon

Exploratory work on zinc deposits in the Lane district, and on iron ore and chromite deposits.

Rapid completion of Bonneville-Coulee power system.

South Dakota

Construction of a plant utilizing the matte smelting process to produce 315,000 long tons of manganese metal at Chamberlain district. Mining of 50,000,000 tons of manganese ore in the Chamberlain district.

Utah

Exploratory work on lead deposits in the West Mountain, Rush Valley, Blue Ledge and Tintic districts, on zinc in the West Mountain and Blue Ledge districts, and on iron ore deposits, and carnotite (vanadium) deposits.

Construction of a custom mill to produce 80,000 long tons of manganese metal at Delta, and a hydro-metallurgical plant to produce 630,000 long tons at Garfield. Mining of 740,000 tons of manganese ore in the Delta district, and 100,000 tons in the Tintic district.

Washington

Exploratory work on copper ore deposits in the Chelan district, on lead in the Metaline Falls district, on zinc in the Metaline Falls district, and on iron ore and chromite.

Wyoming

Exploratory work on chromite deposits, in addition to the trona explorations now being conducted.

Territory of Alaska

Exploratory work on chromite deposits.

CRIPPLE CREEK MINES ADD TO NATION'S SCRAP SUPPLY

THE Carlton properties in the Cripple Creek district of Colorado are shipping scrap metal of various kinds to the Colorado Fuel and Iron Corporation at Pueblo. It is estimated that about 200 tons of scrap metal can be salvaged. The scrap is sold to dealers at the mine and consists of discarded steel ventilating pipes, steel rails, etc.

NEW SURFACE PLANT OPERATING AT IDAHO MARYLAND MINE

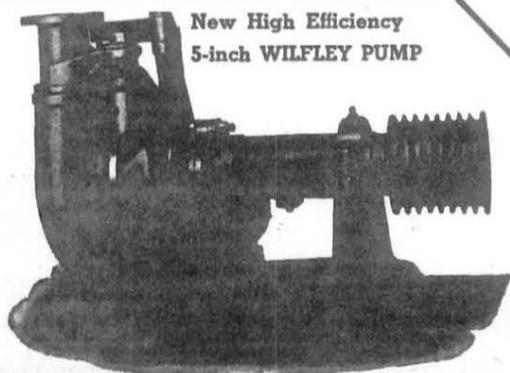
IDAHO MARYLAND MINES CORPORATION has completed the surface construction program at its New Brunswick mine, and the hoists have been placed in operation, lifting 600 tons of ore daily through the main shaft. Following completion of the 140-foot headframe two months ago, concrete cylindrical ore bins, 80 feet high, have been built. Included in the surface plant is a 1,000-horsepower motor, Ottumwa double-drum hoist, and a 600-horsepower Nordberg single-drum hoist.

During the period of construction the New Brunswick mill was shut down and ore from the upper levels was hoisted through the old Brunswick shaft and trucked to the Idaho mill. Ore from the 2,300 level and waste from shaft sinking were hauled through a drift to the bottom of the Idaho shaft. A sinking program with 4,000 feet as the objective has been under way at the New Brunswick.

Idaho Maryland employs 863 men in its mining operations at Grass Valley, California. Albert Crase is general manager.



New 140-foot headframe at Idaho Maryland's New Brunswick mine, Grass Valley.



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PROFESSIONAL DIRECTORY

HISTORIC MINING CAMP IS NEARLY DESTROYED BY FIRE

A FIRE, originating in a saloon, destroyed the business section and threatened to wipe out the whole camp of Mogollon, New Mexico, historic mining camp 80 miles northwest of Silver City. Two of the principal buildings, the M. E. Coates store and the J. P. Holland and Company store, escaped the flames, and no damage was done to mining property.

The fire is reported to have destroyed a dozen or more frame buildings and dwellings, including several historic landmarks. Residents of the camp and miners of the Black Hawk Consolidated Mines Company, large gold-silver producer, turned out en masse to fight the blaze with bucket brigades, since no fire-fighting equipment was available at the camp.

LOWER NET INCOME IS SHOWN IN 1941 REPORT OF CARSON HILL

CARSON HILL GOLD MINING CORPORATION, 206 Sansome Street, San Francisco, California, in its annual report to stockholders on the fiscal year ended September 30, 1941, has shown a net income of \$4,234 after all charges including interest, depreciation, depletion, and income taxes, equal to slightly more than one-sixth of a cent a share on 2,400,000 shares of capital stock outstanding. The figure compares with a net profit of \$22,558 for the preceding fiscal year.

The company, which is a 59.6 per cent owned subsidiary of Anglo American Mining Corporation, paid dividends in 1941 totaling \$24,000 or 1 cent a share, compared with \$84,000 or 3½ cents a share in the 1940 fiscal period.

Ore milled in 1941 totaled 387,342 tons against 388,046 in 1940. Gold and silver were recovered in the amount of \$849,199 against \$834,496, and the recovery per ton was \$2.19 against \$2.15 the previous year.

According to Walter Lyman Brown, president, the lower income in the period just past is attributable to metallurgical difficulties in flotation and separate cyanidation of the concentrates during the first 10 months. However, the trouble finally was corrected and the originally anticipated results secured during the last two months of the fiscal year. For these two months the recovery was 90.5 per cent of the gold as compared with 85.6 per cent during the previous 10 months while experimentation was under way. Brown added that it was impossible to predict what effect the war will have on operations of the company.

Development work for the year consisted of 4,251 feet of drifts, crosscuts, and raises. The major amount of ore from current mining is coming from the 300, 1,000, and 3,325 levels, from the Unión Pit, and from the Relief vein on the 675-foot level, with the 3,500-foot level in the early stages of production. The additional tonnage comes mostly from fills on the 1,100 and 3,160-foot levels.

The mining properties are at Melones, California, with John A. Burgess in charge as general manager.

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MINE THOUGHT UNPROFITABLE IS SHOWING GOOD RECOVERY

THE Belama Corporation of Fort Wayne, Indiana, operator of the Belden mine near Buck Horn Station, Amador County, California, is making a profitable 90 per cent recovery from a mine which once was given up as hopeless. It was five years ago that the Belden was leased from the Belden Amador Mines, Inc., by the present operators. They have developed the mine from one that had been abandoned to one of the East Belt mining district's best properties.

Leon M. Banks of Pine Grove, general manager, has a crew of twenty-two men who put 25 tons of ore through the mill each day. Banks says the greatest problem encountered in the East Belt is badly faulted ore bodies which are difficult to follow. That is one reason the mine had not been worked successfully since its first profitable operation between 1852 and 1870's. Another contributing factor was the fact the vein was granite, and the sulphide ores licked operators. Banks' employment of modern recovery methods has changed the story.

The ore body is opened for a distance of 500 to 600 feet, north and south, with operations taking place at the 300-foot level. The ore is hoisted to a 40-ton capacity ore bin, from which it is fed to a shaking screen. Here the oversize is washed and passed to a sorting belt, where the waste is picked out and discarded. The undersize ore goes from the screen to the crusher, and the oversize ore also proceeds to the crusher where it is broken to one-half inch size. About 15 tons of the 40 tons brought to the surface are discarded as waste.

A conveyor belt carries the crushed ore to a fine-ore bin, and a belt feeder takes it to a 25-ton ball mill. Discharge from the ball mill goes into a trommel; the

oversize returning to the mill and the undersize going to a Deister No. 6 rubber-deck concentrating table. Here three products are made. The first one, the gold cut, goes to an amalgamation barrel for batch treatment. The second, shipping pyrites, is taken to the Empire Star mine in Grass Valley for treatment. The third, which is the balance of table feed, goes to the sand pump which elevates it to a corduroy launder which discharges into the classifier.

Two products are then made. The overflow passes to flotation cells where a froth concentrate is produced and which in turn is filtered and shipped to the Empire Star mine. Oversize is returned to the ball mill for regrinding. Flotation tailings pass to the tailings dam where they are stored in prospect of future treatment.

Fred Sprung is mine superintendent and Leslie Mechling is mill superintendent at the Belden. Charles Reuss, 1506 Wall Street, Fort Wayne, is president of Belama Corporation.

OPA ISSUES MAXIMUM PRICE SCHEDULE FOR QUICKSILVER

MAXIMUM prices for quicksilver became effective on February 4 in a schedule established by Leon Henderson, administrator, Office of Price Administration. The schedule fixes the maximum base prices for prime virgin mercury produced in California, Oregon, Washington, Idaho, Utah, Nevada, and Arizona, at \$191 per 76-pound flask, f.o.b. point of shipment; for mercury produced in Texas and Arkansas at \$193 f.o.b. point of shipment. These maximum prices are approximately the prices which prevailed from October 1 to October 15, 1941, and are believed by OPA to be more than adequate to assure a high rate of mercury production.

Dealers regularly engaged in buying and selling mercury on their own behalf are permitted by the schedule to add a pre-

mium of 2 per cent of the applicable maximum base price in addition to actual transportation costs. Brokers are allowed a 1 per cent commission from the consumer.

HUGE MANGANESE OUTPUT PLANNED BY MINES BUREAU

ESTABLISHMENT of six custom mills and one hydrometallurgical plant for the exploitation of higher grade manganese ore is the first step in the program proposed by the United States Bureau of Mines to free production of domestic steel and alloys from present reliance upon foreign manganese sources. The proposal calls for an expenditure of \$38,000,000 and is designed to produce 525,800 tons of manganese annually, sufficient for the production of 87,000,000 tons of steel a year.

Bureau engineers report that they do not hesitate to stake their professional reputations on the feasibility and workability of the processes they have developed. Moreover, they assert that relatively little high priority material will be needed for construction of the plants they propose.

In order to secure rapid adoption of the program, the bureau is prepared either to cooperate with industry by making available its knowledge, experience, personnel, and processes, or to assume full responsibility for the necessary production itself at the request of the War Production Board.

After careful consideration of the larger resources available and the methods of treatment suitable to each ore, the bureau proposed the following locations for customs concentrators: Parker Dam, Arizona; Deming, New Mexico; Las Vegas, Nevada; Delta, Utah; Garfield, Utah; Philipsburg, Montana; and Batesville, Arkansas. At the Las Vegas site, leaching and electrolytic plants also would be established. The bureau reports that these plants could produce a minimum of 213,620 tons of manganese metal equivalent annually, requiring a \$14,100,000 investment.

The second step in the program would be to provide facilities for treatment of lower grade ores and calls for plants at Artillery Peak, Arizona; Cuyuna Range, Minnesota; and Chamberlain, South Dakota. These plants could produce 312,175 tons of manganese metal equivalent annually and would require an investment of \$24,000,000.

Fifty different ore bodies could be used in the program, including properties in the Aguila, Parker Dam, and Wickenburg areas in Arizona; the Paymaster district of California; Granite County, West Butte, and Wickes areas in Montana; Drum Mountain, Simpson Mountains, Kanab, Marysville, and Tintic districts of Utah; the Caliente, Ely, Pioche, Battle Mountain, and Valmy areas of Nevada; Three Kids, Annex, and Las Vegas Wash areas of Nevada; the Cleveland area in Idaho; the Batesville-Cushman district in Arkansas; the Cuyuna Range area of Minnesota; and the South Dakota area near Chamberlain.

Several of these ore beds would be exhausted during the war period, but the new processes would permit the use of others to supply the nation's steel needs for many years. The Bureau of Mines program in-



Surface plant at the Belden mine in Amador County, California, where 25 tons of ore are being milled daily.

program and to initiate pressure on Congress for the necessary appropriations and legislation to put it over. Legislation is being drafted under the leadership of Senator Joseph C. O'Mahoney of Wyoming to give the department needed authority to go ahead with its mineral and power program.

BUREAU REPORTS TESTING OF DRUM MOUNTAIN MANGANESE

THE Bureau of Mines has released a report covering its investigation of the concentration of manganese ores from the Drum Mountain district in Utah. Written by S. R. Zimmerley, senior metallurgist of the metallurgical division of the bureau, and two associate metallurgists, J. D. Vincent and C. H. Schack, the pamphlet is known as R. I. 3606.

As a result of the drilling program of the mining division of the bureau, large amounts of manganese ores have been blocked out in the Drum Mountain district, but this ore as mined would not be acceptable for the production of ferromanganese. Thus the investigations were made to determine the ores' amenability to concentration and the amount of ferrograde manganese that could be recovered. The carbonate ore was divided into groups of high, medium, and low-grade, the low-grade containing 14.9 per cent manganese. The problem of dressing the black oxide manganese ore also was investigated and the work is being continued. A full description of methods, with tables giving results obtained, is presented in the report.

The ore-dressing work on Drum Mountain ores is still in progress. That which has been completed shows that all lots of

the ore investigated were found to be amenable to concentration by standard ore-dressing methods and ferrograde manganese was made by sintering the concentrates. The phosphorus and iron contents of some sintered concentrates were marginal.

NATOMAS REPORT COVERS VARIED DREDGE ACTIVITIES

NATOMAS COMPANY operated seven dredges in the Folsom, California, area throughout the entire year, according to the annual report recently issued. Gold recoveries increased for the second successive year and amounted to 106,076 fine ounces as compared with 95,030 ounces in 1940. Yardage handled, however, decreased to 26,415,273 cubic yards, as compared with 28,291,006 cubic yards in 1940. The net return per yard rose from 6.4 cents in 1940 to 7.7 cents in 1941.

Approximately 337 acres of ground were dredged in 1941. The company continued to add to its holdings of dredgeable land in the Folsom area and prospecting is still under way on acreage purchased during 1941. Mining rights also were acquired in Nevada covering approximately 1,500 acres of the Greenan Placers. Reports received from the company's engineers, engaged in prospecting the land, indicate that at least 46,000,000 cubic yards of proved dredging ground will be provided with an estimated gross recovery of \$8,000,000.

Natomas owns stock interests in several other dredging companies and a portion of its income was derived from dividends paid by those companies. The Merced Dredging Company, 20 per cent of whose

stock is owned by Natomas, reported a net income of \$215,820 for its fiscal year ended June 30, 1941, and dividends paid during the year aggregated \$100 per share.

On its 50 per cent stock ownership in the San Joaquin Mining Company, Natomas received \$50,000 in dividends during the calendar year 1941. During the fiscal year ended June 30, 1941, San Joaquin dredged 167 acres and as of that date still owned 323 acres of proved ground, in addition to the 3,500 acres acquired in 1938, a portion of which is dredgeable. Net income of the company for its fiscal year was \$97,885.

For the period ended August 31, 1941, Manhattan Gold Dredging Company, operating in Nevada, showed a net profit of \$9,139, as compared with \$119,609 for the previous year. The shrinkage was due principally to a decrease in recovery and increased operating costs. A substantial increase in recoveries has taken place which is expected to continue during 1942. Natomas owns a one-quarter interest in Manhattan.

The company also owns a one-half interest in the South Platte Dredging Company, which began dredging its holdings of approximately 80,000,000 cubic yards in Colorado on June 11, 1941. A net profit of \$104,154, or 8.81 cents per cubic yard, was shown for the period ended December 31, 1941.

Natomas' net income for 1941, including all sources, was \$1,474,926, as compared with \$1,342,715 in 1940. Regular quarterly dividends of 25 cents per share were paid, together with an extra dividend of 10 cents in December.

To the miner let me say that he stands where the farmer does; the work of the world waits on him. If he slacks or fails armies and statesmen are helpless. He also is enlisted in the great service army.

Woodrow Wilson

DEPARTMENT OF THE INTERIOR
Franklin K. Lane, Secretary

IT SPEAKS OUR LANGUAGE!

JUST inside the entrance to the California State Division of Mines headquarters, in San Francisco's famed old Ferry Building, hangs a big framed plaque of President Woodrow Wilson's immortal tribute "To the Miner." It has hung there ever since we leaped into World War I. The late Franklin K. Lane, as Secretary of the Interior and therefore top-head of the United States Geological Survey, had it hand-lettered, with a draped United States flag in color beside it, and distributed wherever there were mines.

Through the courtesy of Walter W. Bradley, chief of the California Division of Mines, and Clyde McK. Laizure, San Francisco district mining engineer of the division, the plaque was loaned to a representative of *The Mining Journal* who had it photographed with a filter, so the red and the blue of the flag came out in true color values and . . . here it is.

Perhaps you will cut it out and have it framed, to hang where many will see and appreciate it. May it bring a fuller realization of what the miner means to the nation's war production program—especially those miners who have the job of digging and shipping our war metals.

wood claims owned by the company and under lease to Tom Sanford, Oracle.

F. G. Lane, R. F. D. 1, Miami, Arizona, has been shipping copper ore from the Star mine in the Old Hat mining district of the state.

The 200-ton flotation mill at the Trench unit of American Smelting and Refining Company, Patagonia, Arizona, produced 20 to 30 tons of concentrates daily during 1941, of which about half were lead and half zinc. More than half of the mill feed came from the company's Flux mine about 2½ miles distant. T. A. Snedden is superintendent of the Trench unit and I. H. Stanley is mill superintendent.

Mammoth-St. Anthony, Ltd., Tiger, Arizona, the second largest producer of lead in the vicinity of Tucson, Arizona, is reported to have recovered around 4,000,000 pounds of that metal last year. Capacity production was maintained, with mining of low-grade ore from the old Mammoth-Colins, Mohawk, and New Years mines. Gold, silver, lead, and molybdenum with some vanadium are recovered in marketable form, using a milling plant and a small smelting furnace. About 250 men are employed. James L. Fozard is general manager; John A. Richards, mine superintendent; George Peters, mill superintendent; Harold J. Nickolds, smelter superintendent; E. B. Daggett, mine engineer; J. E. Snodgrass, maintenance foreman; Peter Tierney, electrician; Carl Hopkins, purchasing agent; and A. B. Romney, chemist and assayer. W. Howes, 4654 West Point Loma Boulevard, San Diego, California, is mill consultant.

The Gold Bar Mining Company operating the Allison mine in the Baboquivari district is reported to have worked continuously throughout 1941. Starting production of gold-silver bars from its revamped cyanide mill late in 1940, the company received mint returns of over \$60 000. This is said to be the first successful attempt to treat ores from this mine by a milling method. The mine is within the borders of the Papago Indian Reservation and practically all of the mining is done by local Indians. L. M. Vreeland, 1007 Valley National Bank Building, Tucson, Arizona, is manager, and Robert Gammell, 715 North Tyndall, Tucson, is general superintendent at the mine.

Paul Gatlin, 620 North Seventh Avenue, Tucson, Arizona, and W. A. Weaver, 102 West Delano, Tucson, have been shipping silver, lead, and copper ore from the Graveyard mine. The property is located in the Helvetia mining district of Arizona.

Anania M. Neal, Box 33, Oracle, Arizona, has shipped several carloads of silver ore from her San Antonio mine in the Old Hat mining district near Oracle.

Magma Copper Company, Charles F. Ayer, president, 14 Wall Street, New York, New York, has declared a dividend of 50 cents a share on its common stock payable March 16, 1942, to stockholders of record February 28. A similar amount was paid March 15 last year. The company operates a mining property at Superior, Arizona, under the direction of E. G. Dentzer, general manager.



Tungstar Corporation, P. N. Stevens, general manager, 6233 Hollywood Boulevard, Hollywood, California, has rescinded the \$1 a share dividend which it had declared on its capital stock to be paid February 26, 1942, to stock of record February 20. Tungstar has made nine dividend distributions, four \$1 payments having been made in 1941 and five \$1 payments in 1940. The company, which was organized about two years ago, operates a tungsten deposit in Inyo County, California, at an altitude of 12,000 feet in the Sierra Nevada. Because of weather conditions, production has been at the rate of about 50 tons daily. However, mill capacity is around 80 tons, and preparations are being made to increase this amount to 150 tons. W. A. Linfesty is mill superintendent; Ernest Kinney is chief chemist; and Malcolm Harmon, purchasing agent. All are addressed at Bishop, California. Reginald Owen, Hollywood screen star, is president.

According to reports, the Union Smelting Company of California is considering remodeling and modernizing the Mojave Smelter preparatory to purchase of the plant. I. Blum, Mojave, California, is the present owner. The smelter was not in operation during 1941.

The Middle Fork Gold Mining Company, C. W. Plumb, general manager, 551 Thirty-fifth Street, Sacramento, California, is producing 200 tons of gold ore daily at its Sliger mine near Greenwood, California. The ore is treated in the 200-ton flotation-amalgamation mill at the property. A crew of 90 men is employed in the mine and five in the mill. Officials at the mine include E. H. Syms, mine superintendent; William Harmon, mill superintendent; C. J. Coquoz, chief mine engineer; Ed Davis, master mechanic; Clinton Davis, chief electrician; Harold Scheave, chief chemist; and M. C. Leveaux, chief clerk. All receive mail at Box 192, Auburn, California. J. B. Beaty, 165 Broadway, New York City, is president of the company, and Joralemon and Carlisle, 315 Montgomery Street, San Francisco, act as consulting engineers.

Fred Creith, who formerly operated the New Deal claims near Randsburg, California, is interested in a group of 18 claims containing gold, silver, and antimony also in Kern County. Two men are working at the antimony property taking out some ore. A bunkhouse has been built and arrangements are being made to carry on mining at the location. Creith is endeavoring to obtain government financing in order to start production on a commercial scale.

During 1941 Burton Brothers at Rosamond, California, sold to the United States mint gold and silver valued at \$613,586. Production from the Tropico mill was valued at \$439,000, which included \$304,000 from the Tropico mine and \$135,000

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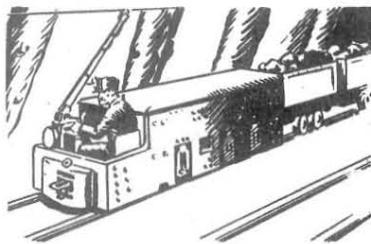
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from custom ores purchased. Ore from the Ruth mine and from the Davenport mine was reduced in the Ruth mill and was valued at \$174,357 in gold and silver. The Burton Brothers company is composed of H. Clifford Burton and Cecil F. Burton. A. H. Johnson, Trona, California, is general superintendent. The Ruth mine is 14 miles north of Trona, and the Tropicco is near Rosamond.

Two more cars of manganese ore have been shipped to the stockpile of the Metals Reserve Company in Phoenix, Arizona, from the Whedon Manganese Mines in the Paymaster mining district of Imperial County, California. V. B. Whedon, Bank of America Building, 9470 Santa Monica Boulevard, Beverly Hills, California, has been operating the property. The current shipment makes a total of six carloads from the mine.

Mountain Copper Company, Ltd., William F. Kett, general manager, 351 California Street, San Francisco, California, has closed down operations for the winter at its Iron Mountain mine near Matheson, Shasta County, California. Most of the employes have been transferred to the company's Hornet mine in the same district in order to accumulate large stockpiles of ore. It is expected that work will be resumed at the Iron Mountain property by June. J. G. Huseby, Matheson, is mine superintendent at the Iron Mountain mine.

The Brown Bear Mining and Development Company, Dr. S. A. Jelte, president,



703 Central Bank Building, Oakland, California, is treating 16 tons of gold ore daily in its 60-ton amalgamation-flotation mill. The company, which operates a mining property in the Deadwood district near French Gulch, California, is installing a $\frac{3}{4}$ -yard shovel to handle dump rock which will enable the mill to operate at full capacity. Extensive underground exploration is planned for this spring. A crew of 15 men is employed under the direction of H. R. Westlund, general superintendent, Lewiston, California. H. Clayton, also of Lewiston, is mill superintendent, and N. C. Wheeler, French Gulch, is mine superintendent.

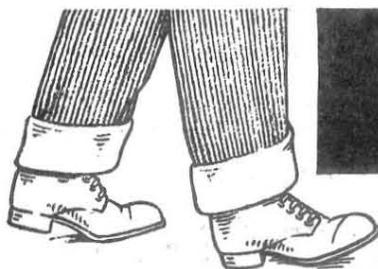
The New Idria Quicksilver Mining Company, Idria, San Benito County, California, will increase the capacity of its furnaces during 1942 from 400 to 600 tons daily. The four Gould furnaces have been operating at peak capacity turning out approximately 12,000 tons monthly. C. Hyde Lewis, Idria, is general superintendent; Wesley Shadduck is general foreman; James Smith is mine foreman; and D. Jones is furnace foreman.

Construction of a 50-ton Gould rotary furnace at the quicksilver property of Red Elephant Mining Company is nearing completion, and operations are expected to start in the spring. The property, located 10 miles from Knoxville, California is owned by A. Gradin, 3887 Twenty-third Street, San Francisco. Bert W. Busch, Lakeport, California, is California representative for Red Elephant Mines, Inc., and H. D. Tudor, 58 Sutter Street, San Francisco, California, is president.

Sonoma Quicksilver Mines, Inc., H. D. Tudor, president and general manager, 58 Sutter Street, San Francisco, California, is installing a new three-foot Gould rotary furnace at its property near Guerneville, California. This addition will increase the present output of from 80 to 90 tons daily to about 175 tons. S. F. Wickham is assistant general manager and Herbert Larsen, chief mine engineer. The company employs around 55 men.

Pacific Chrome and Manganese Syndicate, 667 Mission Street, San Francisco, California, is accumulating chrome ore stockpiles at Crescent City, California, and other points. The company purchases chrome ore from various properties and is operating at Rattlesnake Mountain in Del Norte County, California, and in southern Oregon. The group is composed of H. B. Piggott, Urban Cordes, and Leland J. Cuneo. The latter acts as field man.

According to reports, a plant for the production of cyanides will be constructed at Richmond, California, to be financed by Western Cyanides, Inc., George H.



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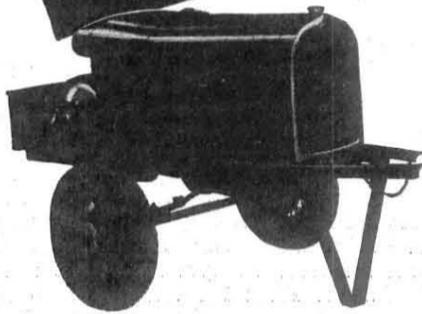
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Lehre, president, 309 Kearny Street, San Francisco. Production will be confined to sodium ferro cyanide, potassium ferro cyanide, and potassium ferri cyanide. The plant is to be of unit construction and may be enlarged by addition of other units without interrupting production. Alfred M. Thomsen will be in charge of the operation. Walter O. Files of San Francisco is vice-president and treasurer of the company, and Fred H. Zumwalt, Jr., is secretary.

Production is scheduled to start immediately at property of the **Silver Spear Mining Company**, Box 157, Keeler, California. J. Percy Hart, Keeler, is president. A large amount of exploratory work is outlined for the coming spring. The ore will be conveyed over a six-mile tramway to Keeler, California, from where it will be shipped by rail direct to the Selby smelter. The company's holdings include those of the old Cerro Gordo Extension Mining Company which was dissolved two years ago, the Cerro Gordo mine, and 23 unpatented claims. Values are in lead, zinc, gold, and silver. A short time ago tungsten ore was uncovered on a portion of the property, and the company plans to develop that section. The company maintains offices at 724 Arden Avenue, Glendale, California. Edwin S. Hicks is secretary-treasurer.

According to an announcement by officials of **American Potash and Chemical Corporation**, its plant at Trona, California, will be almost doubled in capacity. At an expenditure of approximately \$1,300,000, two improvement programs have been started, in which additional equipment will be installed by the corporation's engineering department and by the United Engineers and Constructors, Inc., of Philadelphia. The expansion is expected to be completed within a year and to require 100 employes when work is fully under way. At the present time the Trona plant is producing more than 145 tons of sodium carbonate and 205 tons of sodium sulphate products daily. F. Cecil Baker, 50th Floor, 70 Pine Street, New York City, is president of the company, and R. W. Mumford, Trona, is vice-president. Other officials at Trona include W. W. Lynch, assistant California manager; F. R. Bridgeford, production manager; A. J. Anderson, assistant production manager; J. J. Eason, assistant California manager; W. J. Libbey, chief engineer; M. W. Colony, mechanical engineer; W. H. Allen, assistant chief engineer; F. A. Ferris, master mechanic; R. M. Durland, control chemist; Fred Austin, pipefitter foreman; M. E. Franklin, industrial relations manager; P. L. Hollingsworth, traffic manager; W. A. Gale, director of research; and Dr. William Denton, medical director.

The **Ancho-Erie Mining Company** is progressing at the rate of 14 feet a day in driving the No. 4 tunnel at its mine near Graniteville, Nevada County, California. Over 1,500 feet have been completed, and it is thought that an additional 500 to 700 feet are necessary in order to reach the Ancho vein. A crew of 12 men is employed under the direction of Fred Anderson, superintendent, Grass Val-

ley, California. It is planned to construct a ball mill at a later date. C. A. Helbach, 370 Alta Street, Grass Valley, is president of the company.

E. S. Curtis, Box 324, Lincoln, California, is planning to add a grinding unit to his milling plant two miles northeast of Lincoln, Placer County, California, and has made arrangements for the equipment to be shipped from Nevada. Curtis is working dragline tailings and recovering zircon sands, black sand, and free gold.

Production has started at the property of the **Panwauket Mining Company**, A. M. Bennett, manager, Douglas City, California. The company is using a dry-land washer and employing a crew of eight men. Several acres on Redding Creek are under lease to the Panwauket concern.

The **General Dredging Company**, comprised of O. Jack Boucher, A. F. Giddings, and W. H. Haines, Natoma, California, plans to conduct dredging operations in El Dorado County, California. The company now has four dredges working in California. These include the No. 1 dredge of three-cubic yard capacity at Folsom; No. 2 of two-cubic yard capacity at Natoma; No. 3, 1½ cubic yards at Rescue; and No. 4, two cubic yards, at Fair Oaks. Offices of the company are maintained at Room 501, 811 West Seventh Street, Los Angeles. Seventy-five men are employed by the company.

The **Lake Tahoe Gold Mining Company** expects to be in production this summer at the property which it has under lease from Tahoe Treasure Consolidated Mines, Inc. The ground consists of one section and three-fourths acre of deeded land and 19 mining claims located about three miles west of Homewood, Lake Tahoe, Placer County, California, and contains a large deposit of gold and silver ore. Home offices of the company are at 304-305 Clay Peters Building, Reno, Nevada, and its post office box is 677, Reno. Officers of the organization include L. L. Noonchester of Homewood as president and general manager, and A. E. Vandercook of Virginia City, Nevada, consulting engineer.

Fred A. Bachich, Box 252, St. Helena, California, has taken over the **Bella Oak quicksilver** mine at Rutherford, California, from the Gould interests of San Francisco. Bachich has bought and moved the equipment, including a 50-ton Gould rotary furnace and condensing system, from the La Joya mine at Oakville, California. The furnace has been installed and is expected to be in operation about March 10. A new shaft is being sunk at the Bella Oak to explore the lower levels. It is also planned to treat several thousand tons from the dump left by former operators.

The **Placer Exploration Company**, 409 First National Bank Building, Chico, California, has optioned 200 acres of dredging ground near Junction City, Trinity County, California. The company is a partnership composed of J. T. Alm, Lionel T. Barneson, C. Fred Holmes, and J. Craig Hamilton. Hamilton is general manager, and Walter Laswell, Box 113, Palermo, California, is general superintendent.

Clarence L. Garibaldi, Sutter Creek, California, will conduct a dragline dredg-

ing operation on Little Indian Creek. Last year he operated 1½ miles from Drytown in the same county.

W. R. Clark, Box 646, Oroville, California, is continuing to operate his dragline dredge on French Creek near Berry Creek, California, and satisfactory recovery is reported. Equipment includes a 100-yard-per-hour Bodinson dragline dredge and No. 6 Northwest dragline with two 1½-yard Esco buckets.

Gold Placers, Inc., is conducting a dredging operation at Newcastle, California, under the direction of J. W. Shaw, superintendent. A 603 Lima dragline, equipped with a Caterpillar Diesel engine is used in conjunction with the recovery plant.

McKinley and Kaufield, Auburn, California, are dredging with a 100-yard-per-hour Judson-Pacific four-bowl Ainlay plant with Caterpillar generator, 1¼-yard Northwest dragline and 1¼-yard Page bucket. H. W. McKinley is superintendent. The concern last year worked the Shovel placer mines in the Columbia Hill district near North Bloomfield, California.

Roy S. Olson has been operating a 90-yard-per-hour Bodinson plant on Clear Creek south of Redding, California. Equipment includes a Marion 331 dragline and two ¾-yard Page buckets.

The dredging unit which began operation nearly a year ago on Brown's Creek in Trinity County, California, under the direction of R. P. Brennan, Douglas City contractor, is still working at the location.

Brennan and his associates are using a dry-land plant with a ¾-yard Link-Belt Speeder equipped with a Caterpillar D-8800 engine and ¾-yard Esco bucket.

Work has started on construction of a surface plant, including a flotation mill and other buildings, at the Gray Eagle copper mine near Happy Camp, California. The old tunnel adit is being enlarged, preparatory to development work, and the property is expected to be in production around the last of the year. The Newmont Mining Corporation is reopening the Gray Eagle, which has been idle for 25 years and is thought to contain a large, unworked body of copper ore. When production is under way, it is estimated that around 650 tons will be turned out daily. Concentrates will be trucked 85 miles to the nearest railroad and from there shipped to the Tacoma smelter. Robert J. Hendricks is in charge of operations at Happy Camp. He also continues to act as manager of the Zeibright and Brown's Valley properties of Empire Star Mines Company.

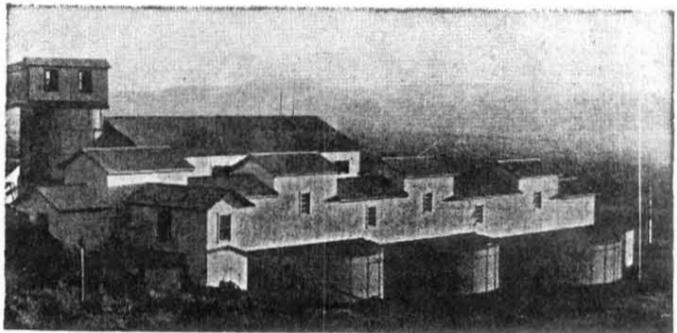
Operations at the St. John mine about a mile north of Grass Valley, California, have been suspended for what is expected to be only a short time. The property, reopened early last year by Ed C. Jacobs, Nevada City, California, has been equipped with a new mill building and blacksmith shop; the old shaft has been unwatered; and development work done.

Omega Company, Box 1068, Nevada City, California, which resumed hydraulic

operations at its property near Washington, California, about a month ago, is using three to five monitors and will set up nine soon, although only four will be working at any given time. During the coming season, provided sufficient water is available, the company expects to mine 1,000,000 yards of gravel. A large dragline has been installed to break down the clay strata from the gravel banks, replacing blasting methods of last year. Last year 430,000 yards of gravel were mined. A crew of 38 men is employed. Theodore A. Larsen is superintendent and G. B. Little is assistant superintendent, both addressed at Nevada City.

Raymond I. Smith, Harold's Club, Reno, Nevada, has suspended operations at the Midnight mine, Nevada City, California, and activity is not expected to be resumed for the duration of the war. Smith also conducts a dredging operation near Hayfork, California, and operates mining property in Nevada.

The 40-stamp mill at the Angels quartz mine, Angels Camp, California, is being dismantled, and this, with all other equipment except the hoist, will go to a foundry in the Bay Area to be converted into war material. The Clinch Mercantile Company, which handles mine, mill, and contractors' supplies in Angels Camp as local representative of Columbia Powder, 1605 Popular Street, Oakland, California, is doing the work. O. P. Steele, vice-president and sales manager for Clinch Mercantile, is



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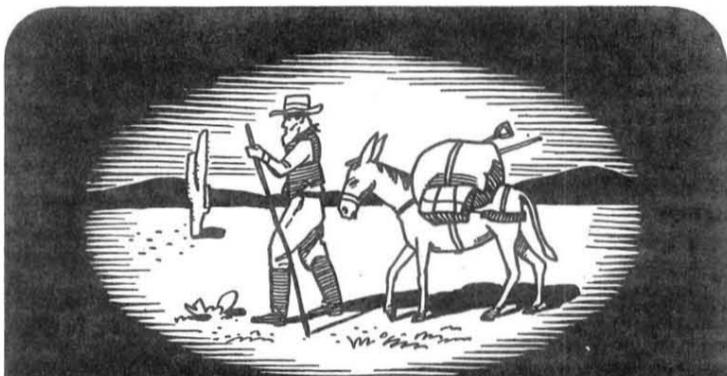
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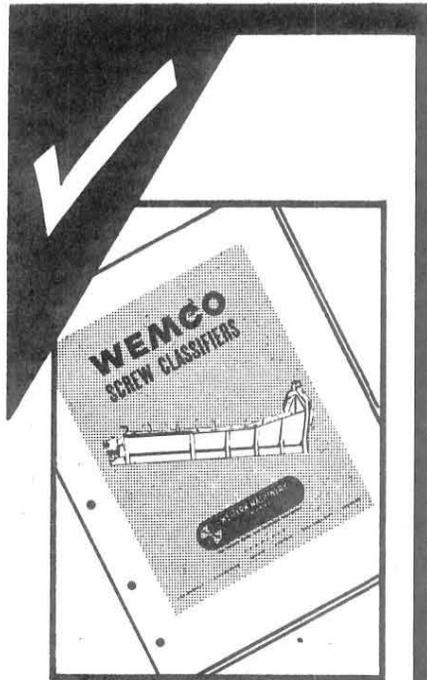


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traveling through the Mother Lode section in search of obsolete mine and mill machinery which will be dismantled and shipped to the various foundries in the Bay Area where the material will be prepared for utilization in the war program.

Fifteen men are employed by Bert C. Austin and Company, Inc., 417 Balfour Building, San Francisco, California, at the Wilbur Hill mine on Sulphur Creek between Wilbur Springs and the Manzanita mine. The plant at the property is turning out 100 flasks of quicksilver monthly. The operators are endeavoring, through the Colusa County Board of Supervisors, to get a road built to the property. If this is done, it is thought that production could be stepped up to 175 flasks a month.



The Yacolt Mines, Inc., has been organized to carry on development work started last May on property in the Gold Hill area of Boulder County, Colorado. The claims are supposed to include an extension of the Slide vein. Alex J. McLellan of Boulder is general manager. The company is composed of Yacolt, Washington, people and is headed by William E. Brewster of Yacolt.

A crosscut is being driven to explore the Argentine claims in the Silver Lake-Iowa Tiger group of claims, owned by the American Smelting and Refining Company and being developed under contract by the Shenandoah-Dives Mining Company. The property is located near Silverton, Colorado. W. E. Barhite of Silverton is superintendent for A. S. & R. and Charles Chase of Silverton is general manager of Shenandoah-Dives. During the past year the new crosscut from the main level of the Shenandoah-Dives was driven to a point under the Royal shaft of the Stelzner claim and a raise put up to the bottom of the shaft. Besides development work for the smelting concern, the Shenandoah-Dives company employs about 300 men in its mining and milling activities and produces around 12 carloads of concentrate weekly.

Work on the 1,500-foot tunnel to cut the Wano vein 200 feet below present workings is progressing, the heading being about 650 feet in. The bottom level of the Wano is down 500 feet. The property is being operated under the general management of H. W. Williamson, 615 U. S. National Bank Building, Denver, Colorado, and H. B. Williamson is superintendent at the mine at Jamestown. Production has been carried on six days a week during 1941 and the mill was on three shifts, when it was operated. Recently work was started converting it from a gold to a fluorspar treatment plant, to be used on another one of Williamson's mining projects. About 35 men were employed at the Wano property during the past year and about 20 others were engaged in leasing activities on the ground.

Sinking 100 feet from the 175-foot level is under way at the Emmett fluorspar mine at Jamestown, Colorado. The Emmett is one of the Boulder Fluorspar and Radium properties which are operated by H. M. Williamson, 615 U. S. National Bank Building, Denver. A power line is being run to the Argo mine of the group and sinking there will be started as soon as possible. The Wano mill, also owned by Williamson, is being remodeled to handle fluorspar ore and is expected to be ready for use shortly. Present production of spar is coming from the Emmett mine and is said to be of metallurgical grade, that is 85.5 per cent calcium fluoride and not over 5 per cent silica. It is sent to the Colorado Fuel and Iron Corporation. H. B. Williamson, Box 2, Jamestown, is general manager and A. M. Williamson is general superintendent.

About 30 tons of ore are being taken daily from the Batchelor property of the G. A. Franz properties at Ouray, Colorado, during development work. An inclined drift is being run on a lead-silver vein, which is described as being small but with high-grade values. Ore is sorted from this operation and some is milled in the Franz mill and the balance is shipped direct to the smelter. The drift is over 300 feet long and in ore all the way. Work has been discontinued in the upper portions of the Batchelor Consolidated mine of the group and Julius Sonza of Ouray is operating a lease below the tunnel level. He is working through the Syracuse tunnel on the Batchelor vein. G. A. Franz, Jr., of Ouray is general manager.

Diamond drilling will be undertaken in the Malachite copper mine in the Bear Creek district southwest of Golden, Colorado, by the American Smelting and Refining Company. Title to the property was cleared recently and the smelting company leased it from the Colorado-Kansas Syndicate, owners. The mine was operated in 1892, then was idle until 1931 when some work was done. Again in 1939 and 1940 there was a little activity at the mine. J. Fred Johnson, McCornick Building, Salt Lake City, Utah, is general manager of mines for the company in Colorado and Utah and R. P. Reynolds, 607 First National Bank Building, Denver, is manager of the Colorado department.

The Utze Lode Mining Company has been organized with Albert Hall Peek, 108 Van Buren Avenue, West Hartford, Connecticut, as president to reopen the Aetna mine in the Cascade district of Clear Creek County near Idaho Springs, Colorado. The property is a former producer, values being in gold, silver, lead, and zinc. In the late 20's and early 30's it was worked by the Aetna Leasing Company of which Peek was general manager. Present plans call for the installation of new equipment and development work, with production expected in the near future.

The Colorado Fuel and Iron Corporation, headed by W. A. Maxwell, Jr., Continental Oil Building, Denver, Colorado, reports a net income of \$1,485,614 for the six months ended December 31. This includes federal income and excess profits taxes and

COLLECTION OF SCRAP METAL IS URGED BY BUREAU OF MINES

IN ORDER to meet growing demands in the United States for scrap iron and steel needed in the manufacture of steel for guns, tanks, ships and other implements of war, the Bureau of Mines has appealed to the American mining industry to organize a salvage and equipment rehabilitation campaign. Operators of metal mines, and those engaged in the associated nonmetallic mineral industries, are asked to undertake individually or to set up committees to initiate a constructive program looking toward the collection of a potentially large volume of scrap iron and steel, according to Dr. R. R. Sayers, director of the bureau. Immediate action is necessary, he stated, not only in collecting the salvaged scrap but also in bringing it to the nearest commercial channels so that it will be available for war purposes in the shortest possible time.

"Every operator should make it his immediate and patriotic duty to take an active part in the salvage program," Dr. Sayers stated. "The necessity for carrying out such a program thoroughly and promptly cannot be overemphasized.

"Mining, in common with other heavy industries, utilizes enormous quantities of bulky equipment and machinery which from time to time gets beyond repair or becomes obsolete. Literally thousands of tons of scrap iron and steel could be expected from such sources as old and worn out mining cars, cutting and loading machines, pumps and blowers, augers and

drilling equipment, steel and cast iron pipes; out-of-date hoists, rails from abandoned workings, and steel headframes from worked-out and abandoned properties."

Concurrently with the metal salvaging campaign, the Bureau of Mines recommends that the industry undertake rehabilitation of machinery and equipment which can be made serviceable by new parts or minor repairs. Such a move would reduce or eliminate the need for similar new machines requiring for their manufacture precious time, skilled labor, and valuable materials which are urgently needed for the manufacture of guns, tanks, and other weapons of war.

Collecting of scrap iron and steel in and around mines would range all the way from gathering loose scrap to dismantling obsolete hoists, mining machines and pumps, pulling up old rails, and digging up useless pipes. There are certain types of mining equipment which have a limited period of use, and after that time they are good only for returning to the smelter in scrap form. For example, when the flanges of a car wheel wear off, the wheel should be removed immediately. Augers and drilling equipment also fulfill their missions within a certain time.

Nearly every mine has its miscellaneous metal scrap heap near the car shop, blacksmith shop, machine shop, or some other surface building, the bureau pointed out. While it is unlikely that much of the metal in such heaps has escaped the scrap collections of recent years, it is possible that a few of the piles are left.

By replacing worn out parts with stocks already manufactured, the mining industry would aid materially in the national war efforts and at the same time promote safety in the mines, according to the bureau. Many mine accidents and fatalities are attributed to the failure of equipment which has been permitted to deteriorate and reach an unsafe condition and many serious and some fatal accidents in and around mines could be prevented by good housekeeping methods one of which is the removal, piling, and subsequent use of abandoned metallic parts.

NEW BULLETIN DESCRIBES OREGON MANGANESE DEPOSITS

A BULLETIN describing over 80 manganese deposits in Oregon has been published recently by the Oregon State Department of Geology and Mineral Industries, Earl K. Nixon, director. The bulletin, No. 17, Manganese in Oregon, is the result of field work undertaken for the purpose of cataloging the state's resources of the important strategic mineral.

In addition to descriptions of individual properties, a chapter is devoted to a brief discussion of mineralogy, origin, methods of prospecting, and economics of manganese ores. A list of western buyers of manganese ore is included. The volume, which contains 80 pages and has three plates which show localities of deposits, is for sale at the Portland office of the department, 702 Woodlark Building, or at the field offices at Baker and Grants Pass. The price is 45 cents postpaid.

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MINES AND SMELTER AT
SUPERIOR, ARIZONA

Mill Heads from the Western States

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



The Dan Creek Placer Mines, Inc., was organized recently with offices at 1414 Fourth Avenue, Seattle, Washington. L. A. Levensaler, Hoge Building, Seattle; Joshua Green, also of Seattle; and John J. Price of McCarthy, Alaska, are the incorporators. The company holds property in the Nizina district near McCarthy.

According to reports, the Livengood Placers, Inc., 1 Montgomery Street, San Francisco, California, has decided not to resume dredge operations this season because of present difficulties confronting gold placer operators. The company completed a short trial run late in 1940 and ran its first full season in 1941, dredging 161 days and handling 777,000 yards of gravel. Because of defense work certain equipment necessary to the completion of the water supply system could not be obtained, so that the system remains unfinished. Holdings are on Livengood Creek near Livengood, Alaska.

Ben Leibrant of Hollis, Alaska, is preparing to reopen the old Puyallup mine and an old prospect on Maybeso Creek in the same district. He is associated with Wendell Dawson and Kelton Adams in the project and will be in active charge.



Producers' Mines, Inc., H. W. Thorne, president and general manager, Chloride, Arizona, is operating its mill at capacity on custom ore and it is understood that the company plans to continue as a custom plant as long as ore shipments are received or as long as the machinery can be kept in efficient operation.

A ledge 3½ feet wide has been opened up in drifting on the 500-foot level of the Belmont-McNeil mine at Palo Verde in western Maricopa County, Arizona. The ledge is said to assay \$42.88 in gold, 16 ounces in silver, and 15 per cent copper per ton. A pump has been installed to handle the water which has been encountered in recent operations, and 500 feet of rails and pipe also have been put in. The mine is operated under lease by Pierre Perry, Box 275, Wickenburg, Arizona, who has been shipping an average of 200 tons of ore monthly to El Paso.

It is reported that plans are being considered for reopening of the properties of the Van Dyke Copper Company, Miami, Arizona, which have been shut down since March 1932. It is understood that the

company may make application for an RFC loan to aid in reopening the mine. Cleve W. Van Dyke, Miami, is president of the company.

The Castle Dome Copper Company, Miami, Arizona, will use 14 heavy-duty trucks produced by the Knuckey Truck Company of San Francisco, California, at its properties near Miami, Arizona. Development of the Castle Dome properties is being financed by a \$9,000,000 loan authorized by Defense Plant Corporation, an RFC subsidiary. The truck company was not among those for which production quotas were established originally for February under amendments to supplementary general limitation order L-1-A. Under previous authority of the War Production Board, truck manufacturers have been permitted to carry unfinished portions of February production quotas into March and to equip these vehicles with necessary tires. The Knuckey company will be given the same privilege under the terms of the special telegraphic order.



It is reported that approximately 500,000 tons of gold ore of good milling value are in sight above the workings of the 2,000-foot tunnel at the Eagle Shawmut mine, Chinese Camp, California. The mine is equipped with a milling plant and modern mining machinery, and is mining and milling more than 500 tons per day. It is operated by the Eagle Shawmut Mining Company, headed by Horace G. Miller, 4800 Santa Fe Avenue, and George W. Clemson, 311 South Spring Street, Los Angeles, California. D. C. Peacock, Chinese Camp, California, is manager at the mine.

A strike of high-grade gold ore is reported to have been made on the 3,100-foot level of the Sheepranch mine, Sheepranch, California, operated by the St. Joseph Lead Company, following several months of sinking operations. It is believed that the strike is a continuation of the high-grade concentrations found in the vein structure on the upper levels. According to F. H. Skeels, general manager, two weeks or more will be required to fully explore the strike, which is of full vein width.

Recent tests of copper deposits at the property of the Calaveras Consolidated

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.

Copper Company, Copperopolis, California, are reported to have been satisfactory and preparations are being made for early production. The area around the North Keystone shaft has been leased for 20 years to H. E. Bush and he and his associates, Stewart and Ness, contractors of Fresno, California, and F. W. H. Beauchamp of Copperopolis, have formed an operating unit called the Keystone Copper Company. Bush is in charge at the mine. The 700-foot North Keystone shaft, with 2,500 feet of drifts and crosscuts, was unwatered between January 8 and February 19, and since then sampling and testing have been done. During previous operations, flotation was used to make concentrates which were smelted on the ground, producing blister copper. The present operation, with a view to producing at an early date for the war emergency, will hand sort selectively mined ore from a water-washed screen, and jig and table the fines. This will be mine-run ore and the product will be marketed at Garfield, Utah.

Operations are reported to be under way again at the Poverty Hill Properties near La Porte, California, following the winter shutdown. The company operates a six-foot dredge, with a capacity of 5,000 cubic yards daily, and power is furnished by a 15-mile transmission line extended from Pike City last summer. A crew of approximately 30 men is employed under the direction of Army Adams, superintendent, 714 West Main Street, Grass Valley.

The lower channel of the Charlotte placer mine, 13 miles northeast of Alleghany, California, is expected to be reached soon through a 400-foot shaft being sunk at the mine. A mile of new road has been completed to the property and an Ingersoll-Rand compressor has been installed. The Charlotte is being developed by J. R. Robbins, Box 981, Alleghany, and P. W. Barrows.

Castro Chrome Associates, 232 Montgomery Street, San Francisco, California, has acquired property near San Luis Obispo, California, and is engaged in constructing a 100-ton chrome concentrating plant at Goldtree Siding, San Luis Obispo. The work is being directed by L. E. Putnam, superintendent.

All equipment of the Glo-Bar Mining Company of San Andreas, Calaveras County, California, has been purchased by the Russell Machinery Company of Auburn, California. Included in the purchase were two 300-cubic foot compressors; an electric battery locomotive; a 1½-ton dump truck, ore cars; rail and pipe; tuggers; pumps, and other items.

The Arisota Corporation, operating the Scales placer mine near Strawberry Valley, California, has applied to the State Division of Water Resources at Sacramento for permission to divert water from several sources in Sierra County, amounting to 315 cubic feet per second. The property comprises 14 claims thought to contain around 25,000,000 cubic yards of gold-bearing gravel. The company is headed by Thomas Bardon, 120 Broadway, New York City. George F. Taylor, Downieville, California, is engineer in charge of operations.

The 10-stamp mill at the Newman mine of the China Garden Mining Company, Pine Grove, California, was destroyed by fire, believed to have been started by a spark from a Diesel engine. The mill had been operated during the past two months by a group of Fresno mining men, who were working the mine under a lease agreement. The Diesel engine was being utilized for power pending installation of electric service at the mine. The China Garden company is headed by Captain Charles V. Fyke of Los Angeles.

Natomas Company, Thomas McCormack, president, Forum Building, Sacramento, California, reports a net income of \$1,474,926 or \$1.54 a share in 1941, against \$1,342,715 or \$1.30 a share in 1940. The company operates a number of gold dredges.

The **E. F. McClosky Mines, Inc.**, is having a survey made of property located in the Tungsten Hills west of Bishop, California, held by Everett Castle. The company is said to have plans for construction of a mill and other facilities if the survey and sampling reports are satisfactory. The work is being done by the Bishop Engineering and Assay Office.

A new slack line has been installed and placed in operation at the property of the **Pacific Sulphur Company** near Weaverville, California. The property, which comprises 2½ miles of the Trinity River channel, was found to be too deep for operation of a dredge. Lyttleton Price, Weaverville, is consulting engineer for the project.

Mark Watson of Santa Cruz, California, has leased manganese property near Gilroy, California, and has started active mining operations.

Salvaging operations at the **Murchie mine of Empire Star Mines Company**, Nevada City, California, are nearing completion. When the work is finished, there will be nothing to mark the former highly productive property. The mill, headframe, and other surface equipment are being razed and the shaft, now filled with water, will be sealed. The Rowe shaft at the **Empire mine** is being widened and extended to standard measurements with new rails and equipment replacing the original temporary materials. When conditions permit, the company plans to extend the shaft another 1,000 feet. Meanwhile, the surface plant, which was recently rebuilt and enlarged, is being used for the company's custom milling operations. Ore bins are used by miners in the district for storing their ore until it moves through the milling processes of the Empire plant. Transshipment is made by small gauge electric line. John R. Mann of Grass Valley is manager of operations for Empire Star Mines Company.

At the **Relief Hill hydraulic mine of Western Gold, Inc.**, North Bloomfield, California, two seven-inch monitors are in operation and a crew of 12 men is employed. As soon as weather conditions permit, additional men will be employed. C. E. Clark is superintendent at the mine.

Shaft sinking operations at the **Spring Hill mine**, Grass Valley, California, have

reached the 2,300-foot level and is now planned to crosscut from various levels to pick up the vein, which was clearly defined on the 1,900-foot level. An ore pocket is being built at 2,300 feet and upon its completion it is planned to proceed with the cutting and equipping of a main station at 2,100 feet. C. C. Cushwa, Box 1001, Grass Valley, is superintendent at the mine.

Milling operations at the **Golden Center mine**, Grass Valley, California, are on a two-shift basis, instead of the previous 24-hour schedule. A crew of approximately 100 men is employed. The mine, which formerly shipped all concentrates to the Selby smelter, is now using its own cyanide plant for treatment of milled ore and is making no more out-of-city shipments. While the cyanide plant is small, it is reported to be efficient. Principal operations are through the Scotia shaft. The Golden Center shaft is still open but is used only for lowering of auxiliary materials. Operating personnel at the mine includes William H. Carey, mine foreman; Robert N. Diggles, mill foreman; E. R. Lanning, mine engineer; Fred Kalenborn, geologist; K. E. Twitchell, electrician; and Wallace Butler, engineer. The mine is owned by Cooley Butler, 745 Rowan Building, Los Angeles.

For several months T. S. and Glenn T. O'Brien of Amador City and Sutter Creek, California, have been making a survey of the low-grade chrome deposits in Amador, El Dorado, Placer, Calaveras, and Tuolumne counties. The purpose of the sur-

vey is to line up at any one point sufficient chrome ore suitable for milling to justify the installation of a 25-ton or more concentrating mill for at least six months' operation. Preparatory work for the first milling plant is under way in Tuolumne County near Jamestown, California, and other mill installations will follow as fast as contracts can be arranged with claim owners for the necessary tonnage. The ore will be purchased outright and paid for as delivered to the mill site.

Klau Mines, Inc., Paso Robles, California, is purchasing some 500 acres of quick-silver-bearing property extending along the borders of three counties, Sonoma, Lake, and Napa. The property is being acquired from H. W. Gould and Company, Mills Building, San Francisco. Included in the holdings is the **Helen mine** near Middletown, California. The deal also includes one-half interest in the telephone line from Middletown to Peterson's property and full interest from there to the Helen mine. The investment involves approximately \$80,000.

Henry Pleikis, assayer and chemist of Johannesburg, California, is installing a small Herman tungsten mill on his property, known as the **Green Top tungsten claims**.

A ledge of ore reported to sample \$10 in gold, 2 per cent copper, and some molybdenum, has been opened up in the **Monarch property** near Portola, Plumas County, California. The mine is owned by E. A. Veak of Portola. The ledge is said to be 50 feet wide with walls strongly defined and indications promising the persistence of values to depth. It is reported that plans are under consideration for extensive mining operations when weather conditions permit, with the possibility that shipments may be made to custom smelters. The presence of copper and molybdenum is expected to facilitate operations and permit shipment of ore formerly of too low a grade for profitable production.

Central Eureka Mining Company, C. C. Prior, president, 111 Sutter Street, San Francisco, declared a quarterly dividend of 6 cents a share on its capital stock, payable March 14 to stock of record February 27. This is the first dividend to be declared under the company's new policy of quarterly declarations. From April 1940 through December 15 of last year, dividends were on a regular 8-cent bimonthly basis, with a total of 48 cents paid during 1941. The company operates properties at Sutter Creek, California, where work is directed by L. A. Norman, Jr., general superintendent.

John Conda, Mokelumne Hill, California, has completed arrangements for operation of the **Bright Star mine** in the Rich Gulch district, and preliminary work has been started at the property. Two men are employed at present but it is expected that about 25 men will be employed when the mine is in full operation.

A net income for the year 1941 of \$5,740 is reported by the **Argonaut Mining Company, Ltd.**, Jackson, California, after deductions for depreciation and federal income taxes, but before depletion.

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
1913	15.52	4.40	5.61	59.79
1914	13.31	3.87	5.11	54.81
1915	17.47	4.67	14.16	49.68
1916	23.46	6.83	13.57	65.66
1917	29.19	8.71	8.93	81.42
1918	24.68	7.46	8.04	96.78
1919	18.90	5.81	7.04	111.12
1920	18.05	8.08	7.77	100.90
1921	12.83	4.55	4.67	62.65
1922	13.67	5.71	5.74	67.52
1923	14.75	7.25	6.66	64.87
1924	13.28	8.08	6.85	66.78
1925	14.30	9.02	7.66	69.06
1926	14.05	8.42	7.37	62.11
1927	13.17	6.75	6.25	56.37
1928	14.81	6.31	6.03	58.18
1929	13.35	6.33	6.49	52.99
1930	13.23	5.52	4.56	35.15
1931	8.37	4.24	3.64	29.70
1932	5.79	3.18	2.88	27.89
1933	7.23	3.87	4.03	34.73
1934	8.66	3.86	4.16	47.97
1935	8.88	4.06	4.33	64.27
1936	9.71	4.71	4.30	45.09
1937	13.39	6.01	6.52	44.80
1938	10.22	4.74	4.61	43.22
1939	11.20	5.05	5.12	39.08
1940	11.53	5.18	6.34	34.77
1941	12.00	5.79	7.48	34.78
1941				
Jan.	12.00	5.50	7.25	34.75
Feb.	12.00	5.60	7.25	34.75
Mar.	12.00	5.77	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	34.77
Dec.	12.00	5.85	8.25	35.13
Av. 1941	12.00	5.79	7.48	34.78
1942				
Jan.	12.00	6.28	8.25	35.13
Feb.	12.00	6.50	8.25	35.13

This is equivalent to slightly less than 3 cents a share on 200,000 shares of capital stock outstanding, and compares with profit of \$40,275 on an identical basis for 1940. Gross production totaled \$609,816 last year compared with \$638,101 in 1940. Tons milled were 87,300 as against 91,100 in 1940. During the year the company expended \$33,314 for development of the Plymouth (Empire) mine, and Plymouth tailings operations continued to show a profit throughout the year, yielding a net income of \$18,807. John T. Smith, 1775 Broadway, New York City, is president of the company. Work at the property is directed by Alex Ross, general superintendent, Jackson.

The Keane Wonder gold mine in Death Valley, California, 25 miles southeast of Beatty, Nevada, has been closed down and machinery at the mine is being moved to another location in the area. A 150-ton mill was installed at the property last year and the four-mile tramway was reconstructed. The mine is owned by W. D. Leonard and George Schreiber, 529 Equitable Building, Denver, Colorado.

The St. Jude Mining Company, 1555 Russ Building, San Francisco, California, has started operation of a 70-ton flotation mill at its property near French Gulch, Shasta County, California. The mine adjoins the Washington mine and is opened by a 2,000-foot adit in which several veins containing commercial ore are under development. A. P. Robillard, French Gulch, is owner and operator of the property.

The Southwest Lead and Zinc Company of Los Angeles, California, headed by M. Harrison Evans of Beverly Hills, is re-opening the old Honolulu-Big Horn mine in the Panamint Range seven miles southeast of Ballarat, California. The property, consisting of 16 claims, contains values in lead and zinc and has not been worked since the first World War. The ore will be trucked to Trona and shipped to the smelter at Salt Lake City, Utah. J. E. Burk of Los Angeles is vice-president of the Southwest Lead and Zinc Company, and H. A. Kenoyer is general manager in charge of mine operations.

A 250-ton mill is under construction at the Darwin lead mine operated by Imperial Smelting and Refining Company. Around 35 men are engaged in the work seven days a week in order to complete it by April. The property is located in the Eagle Mountains 40 miles northeast of Mecca, California. Sam Mosher, Signal Oil Building, Los Angeles, is president of the company.

Work is progressing at the California property of the Best and Belcher Gold and Silver Mining Company, H. L. Slosson, Jr., president, 333 Kearny Street, San Francisco, California. The company holds mining ground in the Mother Lode district of Calaveras County. The company also holds its original claim acquired in 1864 on the Comstock Lode in Nevada. E. F. Waldner of Plymouth, California, is in charge of work in Calaveras County.

Sundown Mines, Quincy, California, has made application for three cubic feet of

water per second and 50 acre feet from a stream tributary to Willow Creek to be used in mining operations. Estimated cost of the appropriation is \$4,000.

The South Fork hydraulic mine near Ray's Gulch in the vicinity of Cecilville, California, is being operated by Ralph and Ross Johnson.

Repair work has been completed at the Farnsworth hydraulic mine near Cecilville, California, following extensive damage caused by heavy storms on the South Fork of the Salmon River. Two thousand feet of new pipe have been laid. Ed McBroom and Louis Roff, Cecilville, are operating the mine.

Because of ill health, J. F. Garrette, Woodland, California, is reported to be considering giving up active management of his Clara J mine in the Humbug district of Siskiyou County, California, and will lease or place the property under new management. The Clara J is developed by a 600-foot crosscut tunnel and is equipped with a 40-ton flotation mill.

One thousand acres in Scott River Valley, Siskiyou County, California, from which manganese will be produced, have been leased by Toy L. Young, Chinese mine operator of Oakland. Toy is said to hold a government contract for 150,000 tons annually, and plans to begin operation with three crews of 20 men each, following results of tests. Young has stated that a hydroelectric smelter may be erected at Fort Jones if the property comes up to expectations. Mining will be under the

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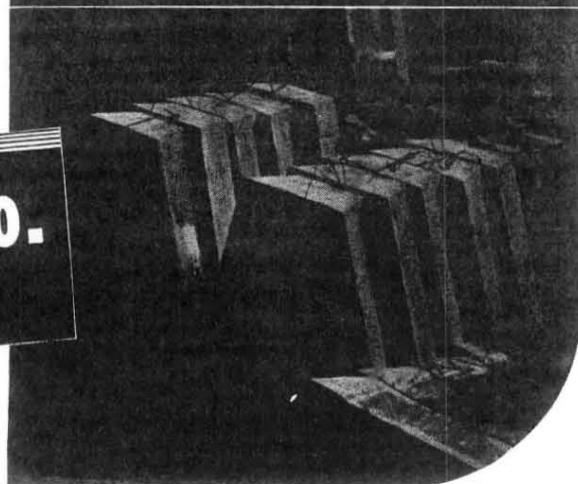
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direction of H. L. Wadell of Grants Pass, Oregon.

The Sunshine mine in the Whitlock district near Mariposa, California, is being unwatered. The property is equipped with a 10-ton mill and other machinery. It was operated last year by Chris P. and W. O. Merrill of Mariposa and associates.

COLORADO

Core drilling will be undertaken by the U. S. Bureau of Mines below the 400-foot level of the Illinois mine of the Wolf Tongue Mining Company at Nederland, Colorado. Olaf Hondrum and John D. Warne, both making headquarters at Boulder, are directing the bureau's work. Equipment is being moved in and work done as quickly as possible to determine if tungsten values exist in the lower depths of the mine. William Loach, Box 25, Boulder, is president and general manager of the Wolf Tongue company, which is conducting its own development program. Lessees on the Wolf Tongue property are carrying on both development and production. The bureau also will drill promising ground at other mines in the district.

The Climax Molybdenum Company reports a profit of \$8,954,204 for 1941 or

\$3.55 a share. This compares with \$6,039,373 or \$2.40 a share for 1940. Large capital expenditures were necessary during the past year to increase capacity of production facilities. The company is withholding information regarding production in the interest of national defense. Operations are at Climax, Colorado, under the general management of W. J. Coulter, 421 Continental Oil Building, Denver.

A block lease on the east end of the Poorman mine on the 375-foot level is reported to have been taken by E. K. Henderson and Frank Cleveland, both of Boulder, Colorado. The mine is located on Poorman Hill west of Boulder and is owned by J. G. Clark of Boulder and E. F. Green. The property is worked entirely by various sets of lessees, producing about 25 tons of gold ore daily.

Production from the Wheatland mine is being sent to the Milliken mill in Clear Creek County, Colorado, by the Trail Run Mines, Inc., operators of the Wheatland. Charles Gresser, Maryland Hotel, St. Louis, Missouri, is president of the Trail Run company and C. R. Wilfley, 1948 Broadway, Denver, directs operations.

An average of 25 tons of ore daily are being mined from the Black Belle mine on Beacon Hill at Cripple Creek, Colorado, and sent to the Golden Cycle plant for treatment. Operations are carried on under lease by the Q. B. Mining Company, A. D. Quaintance, 716 Symes Building, Denver, president. M. M. Suchy of Victor is general superintendent. From three to

ten men are employed, work being mostly in ore, with some crosscutting.

George H. Garrey of the Reynolds-Morse Corporation, 1555 Sherman Street, Denver, Colorado, is in general charge of operations at the Gold Links mine in Gunnison County near Ohio City, Colorado. The property recently was cleared of litigation and title vested in the Reynolds-Morse concern. Joseph E. Thomas, Ohio City, is superintendent.

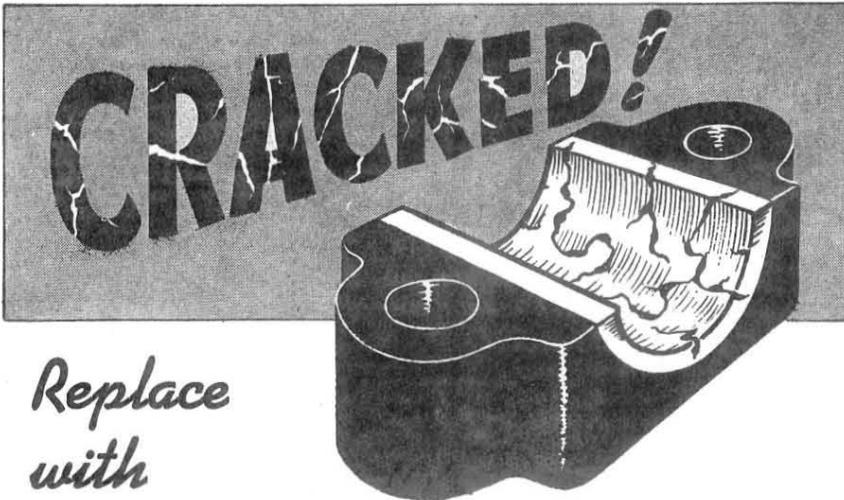
The Empire Lee Mining Company reports a net income of \$10,095 during 1941 against a net loss of \$282 in 1940. The gross value of ore shipped during the year was greater than that produced in 1940 and amounted to 19,008 tons, with a gross value of \$222,433, against 20,087 tons valued at \$152,074 in 1940. Operations are carried on by lessees under the general superintendency of A. H. Bebee of Independence. Merrill E. Shoup of Colorado Springs is president.

The Cresson Consolidated Gold Mining and Milling Company of Cripple Creek reports an operating gain of \$122,903 in 1941 compared to \$105,103 in 1940, an increase in spite of rising taxes and costs. Mining costs, however, showed a decrease in 1941, \$2.88 a ton against \$3.04 in the previous year. Taxes amounted to \$48,708 in 1941 and \$40,251 in 1940. The gross value of Cresson ore during the 12-month period was \$1,337,480, which compares with \$1,178,876 in 1940. No specific date has been set for the starting of the 4,000-foot lateral drive from the Carlton tunnel to the mine to drain the lower levels. Merrill E. Shoup, Box 81, Colorado Springs, is president. The company is using mucking machines or mechanical loaders on the nineteenth level, patterned after those used in the driving of the Carlton tunnel, but on a smaller scale. Similar equipment has been installed in the Portland and Ajax mines in the district.

The Veta Mines, Inc., is reported to have changed its name to the Telluride Mines, Inc., inasmuch as its holdings are now located in the Telluride district of Colorado. The company formerly had interests in Arizona and New Mexico. At Telluride the company holds the Smuggler-Union, Cimarron, Humboldt, and Tomboy mines. Harold S. Worcester is manager and T. E. McCandless is chief engineer. John Ferguson, Jr., is superintendent of the 550-ton mill. Others on the Telluride staff include Charles F. Parker, superintendent of mining operations; Clyde Nettleton, purchasing agent; and Charles Telk, superintendent of power.

Shipments of extremely rich gold ore are being continued, it is stated, from the John A. Logan mine at Victor, Colorado, which is being operated under lease from the Stratton estate by A. B. Cobb of Cutbank, Montana, and associates. The strike, made January 1 of this year, is believed to be the continuation of the lost Logan vein and was opened at a depth of 200 feet from the surface. Ore is being sacked for shipment. Lynn Richmond of Victor is superintendent.

The Ward United Mines Company, J. E. Emmons, 1427 Clayton Street, Denver,



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MAGNOLIA BEARING METALS

METALS RESERVE ESTABLISHES NEW CHROME SPECIFICATIONS

METALS RESERVE COMPANY has revised its schedule for the purchase of domestic chrome ores and will enter into contracts for 1,000 to 10,000 tons with shippers for three grades of material. Contracts in excess of 10,000 tons may be obtained by individual negotiation.

Applications for contracts should be made to Metals Reserve Company, 811 Vermont Avenue N. W., Washington, D. C., on a form available from the company. Data required include business references, location and description of mine, tonnage to be shipped, and mining experience of applicant.

The three grades of ores that are acceptable are as follows:

	High Grade Per Cent	Low Grade A Per Cent	Low Grade B Per Cent
Chrome (Cr ₂ O ₃) — min.....	45.00	40.00	40.00
Silica — maximum.....	11.00	13.00	No max.
Phosphorous — max.....	0.20	0.50	No max.
Sulphur — max.....	0.50	1.00	No max.
Chrome-Iron (Cr-Fe) ratio — minimum.....	2.5 to 1	2.0 to 1	No min.

The prices paid for these ores are based on the dry weight per long ton (2,240 pounds) f.o.b. cars at stockpile designated by the buyer. Following are the Metals Reserve Company quotations:

High Grade—Base price \$40.50 per long ton for ore containing 45 per cent Cr₂O₃ and having a ratio of chrome to iron (Cr-Fe) of 2.5 to 1. For each unit of Cr₂O₃ in excess of 45 per cent, the price is increased 90 cents per ton, and there also is an increase of \$1.50 per ton for each tenth increase in the chrome-iron ratio to a maximum of 3 to 1. The chrome content of any ore is 68.4 per cent of its chromic oxide (Cr₂O₃) content.

Low Grade A—Base price \$28 per long ton for ore containing 40 per cent Cr₂O₃ and having a ratio of chrome to iron (Cr-Fe) of 2 to 1. For each unit of Cr₂O₃ in excess of 40 per cent, the price is increased 90 cents per ton, and there also is an increase of \$1.50 per ton for each tenth increase in chrome-iron ratio to a maximum of 3 to 1.

Low Grade B—Base price \$24 per long dry ton for ore containing 40 per cent Cr₂O₃. For each unit of Cr₂O₃ in excess of 40 per cent, the price is raised 60 cents a ton.

Concentrates of chrome ore must be briquetted to be acceptable under this schedule of prices. Unconsolidated chrome concentrates, if of High Grade or Low Grade A specification, will be accepted at a discount of \$3 per long ton.

No ore will be accepted if its size is in excess of 12 inches, and in the High

Grade and Low Grade A classifications not more than 40 per cent shall pass a 1-inch screen. Requirements as to the amount of fines are waived on Low Grade B.

Under the contract, each lot will be priced under the grade within which the specifications fall. Thus, a lot carrying 45 per cent Cr₂O₃ and 0.50 per cent phosphorous would be priced as Low Grade A.

In addition to the above prices, an allowance will be made for each long ton shipped equal to the freight per ton from the seller's nearest convenient rail station to the Metals Reserve Company's stockpile designated. This is designed to refund to the shipper the freight charges that he must prepay. The cost of sampling and analysis, as well as weighing and unloading, will be paid by the government agency.

Each lot is sampled at the time of unloading onto the stockpile by a sampler designated by Metals Reserve Company with three samples being taken—one each for the buyer, seller, and umpire. The usual provisions will be made for splitting limits and settlement by averaging the seller's and buyer's analyses, or by trade practices if samples are sent to an umpire. The seller may have a representative present at the sampling at his own expense.

Payment will be made promptly by Metals Reserve Company to the seller on the basis of the weight certificate as soon as the analysis determinations are received. The weight to be paid for will be net railroad track scale weights less moisture.

The company stipulates that shipments to a stockpile must be made in flat-bottom gondolas, if available, in lots of not less than one carload. The freight is to be prepaid by the shipper and after arrival at the stockpile and analysis has been made, Metals Reserve Company will notify the seller as to whether or not the ore is acceptable and under what classification.

If the lot is unacceptable, the seller will not be entitled to any allowance for prepaid freight and will be held responsible for removal of the ore from the stockpile location. If he fails to do so within 15 days, Metals Reserve Company can have it removed at the expense of the shipper or otherwise dispose of the material as it sees fit without any liability.

SHATTUCK DENN REPORTS ON 1941 ACTIVITIES

SHATTUCK DENN MINING CORPORATION, J. A. Wilcox, manager, Bisbee, Arizona, reports for the year ended December 31, 1941, a net income of \$98,350 after provision for federal and state income taxes, depreciation, and depletion. A total of \$199,713 was distributed to stockholders during the year. At the Denn mine there were produced during the year 124,929 tons of ore, of which 104,433 tons were copper ore and 20,496 tons were lead-zinc ore. Production of metals was 11,450,184 pounds of copper; 1,459,822 pounds of lead; 4,011,413 pounds of zinc; 8,651 ounces of gold; and 357,669 ounces of silver. The Denn mine was closed down during August and September due to a flood caused by seepage of water from adjoining Phelps Dodge holdings.

The property of the 79 Lead-Copper Company, in which Shattuck Denn owns an approximate 60 per cent interest, operated on a small scale throughout the year but very little ore was found.

In June 1941, the company acquired at a cost of \$10,000 a 90 per cent interest in Arisota Corporation, which owns a placer gold property in Sierra County, California. A few preliminary drill holes were put down in the late autumn, but the difficulty of obtaining drilling equipment and competent drilling crews under present conditions probably will prevent further exploration in the near future.

H. AND H. MINES CONTINUES PLACER OPERATIONS IN IDAHO

THE Elk City dredge of the H. and H. Mines, located on the Birmingham placer property along Crooked River near Elk City, Idaho, is handling around 3,000 yards of gold-bearing gravel daily. Approximately 20 men are employed on the operation, with W. J. Noon of Elk City as dredgemaster.

The H. and H. is owned by John C. Higgins of 1303 Public Service Building, Portland, Oregon. G. S. Hinsdale of the same address is general manager. Carl N. Anderson, also of Portland, is consulting engineer and W. A. Noon is in charge at Elk City. The concern is interested in both lode and placer mining and has holdings in Oregon and Idaho.

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HOLE
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IN PAGE

ANNE ROLLER ISSLER* discusses

Quicksilver Mines of Northern California

MERCURY is described sometimes as the metal of a thousand uses for it is an essential of many drugs and chemicals, industrial and control instruments, electrical appliances, explosives, paints, films, amalgams, and laboratory processes. At the present, however, the munitions industry has first call on the production of this strategic metal.

Until 1900, California produced practically 100 per cent of all the quicksilver mined outside of Europe, the New Almaden in Santa Clara County, near San Jose, California, discovered by Antonio Sutil and Louis Chaboya in 1824, being the first producing quicksilver mine in North America. The ore of New Almaden was not recognized as cinnabar until 1845 and little quicksilver was produced until California became part of the Union. Since then, this mine and its associates have put on the market in the neighborhood of a million flasks of quicksilver.

In the past 40 years several other states, notably, Washington, Oregon, Nevada, Arizona, Texas, and Arkansas, have been developing their quicksilver resources, but California still produces 50 per cent of all American mercury. The principal deposits of the United States are found in the Coast Range mountains of California, in a southeast to northwest belt 400 miles long by 75 miles wide, reaching from Santa Barbara County in southern California to Clear Lake, 100 miles north of San Francisco. According to George L. Gary, in *Commercial Minerals of California*, Series 1941, "Most of these deposits occur in the fracture planes of basic igneous rocks (especially serpentines) and their associated sediments (sandstones, shales and cherts)."

Quicksilver deposits, volcanic in origin, are often found along with hot springs and fumaroles. This no doubt explains the concentration of mines in the upper end of the belt, in the vicinity of Mount Saint Helena—a region of geysers, hot wells, and sulphur springs. Solfataric vapors complicate the extraction of cinnabar at the famous Sulphur Bank mine at the lower end of Clear Lake, and traces of cinnabar have been found in the hot wells and geysers of Calistoga, a watering place at the base of Mount Saint Helena. There are over 50 quicksilver mines on the skirts of this mountain, in the three counties of Napa, Lake, and Sonoma, whose borders touch at a point on its "cliffy shoulders." Very recently, a San Francisco mining firm took steps to acquire 500 acres here, investing \$80,000 in a mining property touching all three counties. In fact, with the exception of the New Almaden and the Jew Idria, the majority—though not all—of the outstanding quicksilver mines in California are in this concentrated area

Napa, California.

One of the immediate results of the war declarations in Europe was to bring about additional demands for mercury, and scores of mines in the United States that had long been inactive entered upon a new productive period. California continues to maintain its dominant position among the mercury-producing states.

north of San Francisco Bay, chiefly in the mining districts of Mayacmas, Knoxville, and Clear Lake, with outlying ones in the three other northern districts, Sulphur Creek, Bella Union-La Joya, and St. Johns-Hastings.

THE Sulphur Bank mine, largest in the Clear Lake district, is "one of the notable and much written-about quicksilver mines of the world."¹ The discovery of quicksilver was incidental for the mine had been opened in 1865 for the extraction of sulphur. In four years the surface deposits yielded nearly two million pounds of sulphur, valued at \$53,500. The operators found, however, that at a depth below the sulphur-bearing horizon, the amount of cinnabar present made refining of the sulphur extremely difficult and expensive.

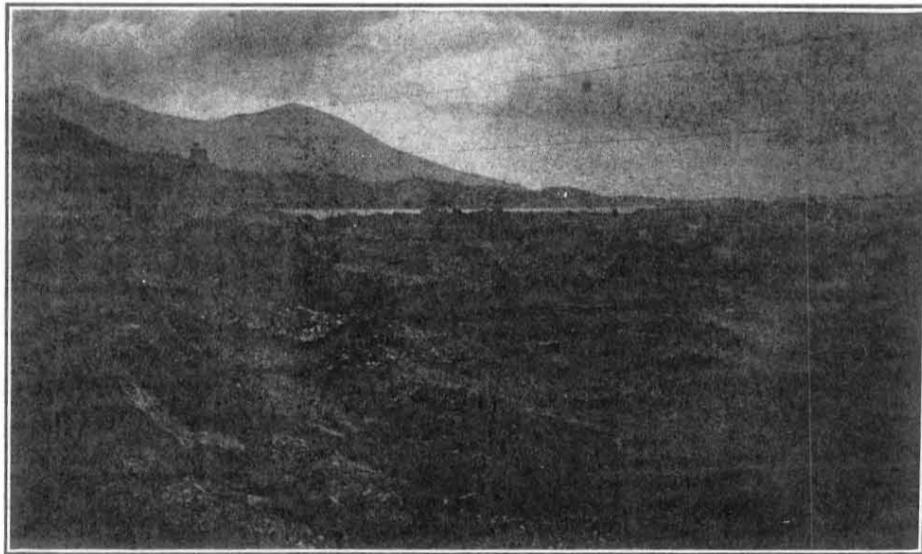
In 1873, after a fall in the price of sulphur and consequent stoppage of operations, the mine was reopened and developed as a quicksilver producer. With the exception of three or four brief intervals, it has been producing quicksilver ever since. For the past 16 years it has been under the management of the Bradley Mining Company, 425 Crocker Building, San Fran-

cisco. All-time peak production was reached last year owing to the uncovering in 1940 of exceptionally high-grade ore. Present average output is 200 flasks per month, the product finding a market with various industrial consumers in the East. The ore runs about 10 pounds of mercury to the ton.

Of the 70 men on the payroll, 27 live at the mining camp, and the remainder commute from neighboring towns and rural areas. There is quite a little settlement contiguous to the surface improvements which consist of a furnace plant with rotary kiln, various shops and garages, and a pumping plant. Company-owned homes for employes number 25, several new ones having been built last year.

The Sulphur Bank mine can be reached over the new state highway from the town of Lower Lake, 10 miles to the south, or by launch from Lakeport, the county seat, across Clear Lake. The latter is the largest inland lake lying entirely within the borders of California, being 12 miles wide at its widest point by some 30 miles long. The altitude is 1,350 feet at water level. A third approach is by an old mountain road, single width, with hairpin curves and almost perpendicular grades! From the crest of the last hill on this road, one has a bird's-eye view of the Sulphur Bank, a low hill eaten into by numerous open cuts, surrounded by piles of tailings—all covered with a yellowish deposit as of sifted flour. Not a blade of grass nor any other bit of vegetation is to be seen under the glare of a blinding noonday sun. The deepest level is 125 feet below the original surface.

The ore occurs as cinnabar in basalt and sandstone, to a considerable extent mixed with sulphur and with small quantities of



Present mining area at the Sulphur Bank mine. Clear Lake and Mt. Konocti appear in the background.

—Photo courtesy Bradley Mining Company

gold and copper. Mount Konocti, the dominating peak of mountainous Lake County, rises steeply from the shore of the lake. It once was eruptive and the entire region shows evidences of intense activity. There is constant decomposition of the rocks by solfataric vapor which gives them their rounded appearance. Iron rails and cables become sulphurized and oxidized; wood blackens and rots; sulphur crystals are visible in crevices; hot sulphurous gases under pressure are continuously escaping; there is a sound from the underworld as of a roaring furnace. In the western cut there are numerous hot springs, the water being 108° F. at the surface. Except for these underground springs, however, this mine is of the same type as the other large producers, whose deposits are believed to have been precipitated in much the same manner.

IN THE Knoxville district, which lies principally in the northeast corner of Napa County, the mines are in line with a fissure through which basalt was ejected during the eruptive period of Mount Saint Helena. The largest mine of the district, now called the Knoxville, formerly Excelsior, Boston, or Redington, is located at the head of Sulphur Canyon, north of Berryessa Valley. Underground sulphurous waters have at times caused trouble with pipes and machinery. There are three parallel main veins in the mineralized zone, enclosed in serpentine, the cinnabar being associated with quartz and pyrite. Ore bodies are over 1,000 feet long and sometimes 500 feet below the surface. There are nine operating levels from the main shaft, and numerous drifts and crosscuts dating back to bonanza days. Machinery is modern and provisions for ventilation and safety well taken care of. The well-known Knox-Osborn furnace bears the names of its two inventors, first lessees of the Knoxville mine.

Quicksilver was discovered there in 1860 by two amateur Napa City prospectors, Seth Dunham and L. D. Jones. Napa County at that time was in the grip of a silver excitement soon to be deflated. Dunham and Jones didn't find the ledge of silver they were seeking, but instead a hillside of cinnabar, the ore running as high as 60 per cent mercury. They had been following a new road between Monticello and Lower Lake, and on the hill above Elkhorn Ranch they noticed that the rock point at a turn in the road was a peculiar liver-red and of very high specific gravity. In the canyon below were tons of this reddish rock which had been dumped there by workmen excavating for the new road. Specimens brought to Napa City were pronounced cinnabar. A rich mine resulted, for a time second only to the New Almaden, and long the fourth producer in the United States.

As the Excelsior (X.L.C.R.) it was incorporated in December 1861, and produced 444 flasks the first year, 61,808 flasks the first 12 years. During the peak year of 1873, it averaged 1,000 flasks per month, 400 going to the Comstock mines as amalgam. For another decade it was a high producer, then declined, to be revived during the World War boom and

again today. George Gamble, principal owner and superintendent, has done some new development work in the past couple of years, but most of his present production is from old dump materials.

The company-owned town of Knoxville is picturesque—the sort of place sought out by tourists interested in “ghost towns.” Some of the old stone buildings of 1862 are still standing, including the company store and office building.

THE Mayacmas district, most concentrated mining district in the state, lies between Sulphur Bank and Knoxville, straddling Mount Saint Helena which divides it into two sections. Here the main quicksilver belt crosses the Mayacmas range of the coastal mountains. Among the principal producers of the present era in this district, beginning at the southeast corner, are the Aetna, Oathill, Mirabel, Great Western, and Socrates.

The Aetna and associated mines—Phoenix, Silver Bow, Red Hill, Washington, Pope, Star—located near Aetna Springs, in Pope Valley, Napa County, had produced to the beginning of 1939 a recorded total of 76,300 flasks of quicksilver. Pope Valley was the pioneer mining region north of the Bay of San Francisco, cinnabar having been found there in 1854 by John Lawley, principal owner of the Phoenix mine, incorporated in 1861. The mineral belt, a “veritable bonanza,” begins at an altitude of 400 feet above the valley and extends back 4,000 feet to the top of the mountain. In true fissure veins, the ore runs diagonally through the belt in the universal southeast-northwest direction.

As early as 1870, the Phoenix mine with a crew of 45 men was turning out 240 flasks per month. A report by George Fellows, superintendent in 1872, lists the following surface improvements—furnace, condensers, sorting sheds, boiler house, blacksmith shop, boarding house and office, three lodging houses, five family houses, a barn, and even a miners' reading room. Fellows adds, “There are a number of miners' cabins interspersed among the other buildings which, together with the family houses along the side of the mountain, give the place the appearance of a small town.”

Further prospecting led to the formation of other small companies, each sinking its own shaft to tap the main ore deposit. The workings, now partly caved, were some 800 feet deep in the Star mine, 900 feet in the Silver Bow, 1,000 feet in the Red Hill, tunnels from one to the other connecting at various levels. The most important producing periods of the group were 1877-87 and 1892-98. The Aetna Quicksilver Mines, Inc., holds the claims as a unit and at the moment is undergoing reorganization, suit to secure a new lease having been filed in county court by Andrew Rocca and J. Garcia.



A BARE two miles northwest of the Aetna, in Napa County near the Lake County line, lie the claims of the Oathill mine, formerly Napa Consolidated, third largest quicksilver mine in the state, with more than 20 miles of tunneling, not all, however, today accessible. Surrounding the surface buildings is a considerable mountain village, altitude 2,250 feet at the company office.

Here, again, the discovery of cinnabar was accidental. In February 1872, four employes of the Phoenix mine, W. P. Cook, George Porter, Henry D. Vivian, and Ed Welch, were hunting grouse in the canyon at the head of Pope Valley. On the ridge above the valley they came upon an outcropping of sandstone containing reddish-brown streaks. The four men organized a company and prospected the hillside, running a 32-foot tunnel without finding the ledge. A second company prospected for a year and a half without significant results. In 1867, however, real work began, and Oathill in the next four years put on the market 16,052 flasks of quicksilver. By 1881 there were 50 men on the payroll; at the turn of the century 265, of whom more than half were Chinese. The output in 1900 was 450 flasks per month. Since then there have been several shut-downs, but there is a considerable revival at the present time. The total output to date is in the neighborhood of 200,000 flasks, almost a fifth the total output of all the quicksilver mines of California outside the New Almaden and the New Idria.

Geologically, this mine is of interest because of the salammoniac associated with the cinnabar, again indicating intense volcanic activity on the part of Mount Saint Helena. Ammonia fumes are distinctly noticeable when ore is being reduced in the furnace.

The mountain-top remoteness of Oathill's rich store of quicksilver proved too great a temptation to a couple of holdup men a year or so ago. While one of them covered the night foreman, alone in the furnace room, the other loaded their car with flasks of the liquid metal. Both are doing time in San Quentin, though they could have made their get-away. A state highway patrol stopped them merely to say, “Your tail-light is out.” So great was their apprehension at being accosted by the dread representative of the law, that they immediately confessed the theft which he hadn't suspected.

IN TERMS of ore, the Mirabel mine, four miles south of Middletown in Lake County, is the richest in the region, the mercury running 14 pounds per ton. Total production by 1939 was 35,897 flasks; present production is 100 flasks per month. Furnace and reducing plant are new and represent an investment of about \$20,000. Thirty men are employed, these accomplishing, it is said, the same amount of work as 100 did at an earlier period with antiquated machinery.

Until 1893, this mine bore the name of its first owner, William Bradford, a descendent of the Mayflower Bradfords of Massachusetts and an early pioneer of Lake County, California. Bradford discovered cinnabar float in St. Helena Creek,

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and subsequently one of his sons uncovered cinnabar-bearing rock in his own back yard. He and his sons successfully prospected and developed the Bradford mine, and six years later sold out for \$750,000 to Messrs. Mills, Randol, and Bell of the Standard Quicksilver Company. These gentlemen wanted a new and original name for the mine already famed for its rich ore, so they spliced portions of their own names and created Mi-ra-bel. The Mirabel Quicksilver Company, Tom O'Connor, superintendent, operates the mine today. The output is marketed through the Quicksilver Producers Association of San Francisco.

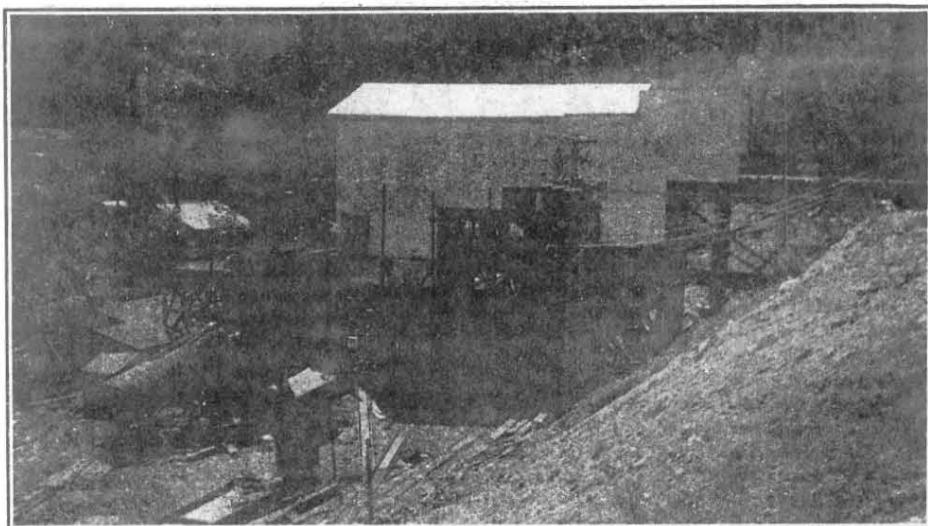
Two miles northwest of the Mirabel, on a steep mountainside, is the Great Western, earliest quicksilver mine in Lake County, opened in 1873. Like the rest of the mines herein described, it had its ups and downs. The present program of operation by the Bradley Mining Company of San Francisco has been in effect since 1936. Prospecting is continuous underground and on the surface, and the outlook for future ore is fair, though the mercury content here is less rich than at the Mirabel. Average output is 43 flasks per month, 25 men being employed.

As might be expected from its long history, the Great Western mine has extensive underground workings, maximum depth being about 750 feet. Workings now operated are 230 feet from the haulage level and over 2,000 feet in extent. The state mineralogist's report on type of ore may be of interest:

"The general strike of the ore body is northwest, with a dip of about 70° southwest. The footwall is very hard sedimentary rock altered by silification, locally called 'greenstone'; and the hanging wall, at least the surface, is serpentine. The ledge matter was formed by a series of thin beds of chert, having their bedding planes parallel to the strike of the ledge and interstratified with clay seams. This chert was locally called 'quartzite.' The dip of the serpentine being flatter than that of the ledge matter, the intervening space was filled with a black 'alta.' The cinnabar occurred in an irregular manner, generally in the seams, and as face metal in the fractures of the chert, but in the richer spots disseminated through the chert itself, associated with pyrite. The main working shaft was sunk vertically in the footwall."

PINE FLAT in Sonoma County, at the western end of the Mayacmas district, differs geologically from any region thus far examined, this being the only place where native mercury is found in large quantities. In the upper levels of the Socrates mine, discovered in 1861, and first known as the Pioneer, the quicksilver was nearly all in the native form. The near-by Rattlesnake mine a few years later turned out 65 flasks "entirely from native quicksilver, with which was associated an oily bitumen." The difficulty of handling these ores economically and with safety to the miners has been considerable. The Socrates, at present operated by the Con-

I. Walter W. Bradley, State Mineralogist, "Quicksilver Resources of California."



Furnace plant at the Great Western quicksilver mine. Mine portal is to the right of the building and the mine dump is in the right foreground.

—Photo courtesy Bradley Mining Company.

tact Quicksilver Mining Company of Healdsburg, California, has just been reopened. Together with the Contact mine, it is producing mercury for the government and working three shifts, the two mines employing a crew of 53 men. It is reported that in the lower levels at the Socrates there is more cinnabar and less native mercury, and that ways are being found to overcome the former difficulties.

These Sonoma County mines lie along an extremely rugged ridge of the Mayacmas Mountains between Big Sulphur and Little Sulphur Creeks, the Socrates mine having an elevation of 3,000 feet, the Cloverdale, westernmost mine of the Mayacmas district, 2,200 feet. Apparently the ore bodies bear a close relation to the near-by Big Geysers. At the time of greatest mining activity at Pine Flat, 1874-1883, the Big Geysers, today harnessed for commercial use, were one of the show places of the West, visited by people from all over the world. From San Francisco tourists came by ferry and train to Calistoga at the head of Napa Valley, from there by stage to Pluton Canyon and the Geysers Hotel. Clark Foss, the stage driver described by Robert Louis Stevenson in "The Silverado Squatters," had built his own road to the Big Geysers, and charged a dollar a mile for the hazardous journey.

The region is one of many streams, spouting sulphurous wells, boiling geysers, whistling steam and roaring sounds from the underworld. And, as in the case of the Sulphur Bank mine at Clear Lake and others here described, the quicksilver deposits seem to be associated with this impressive volcanic upheaval.

The greatest quicksilver production period of California history was 1874-1879, following upon the invention of the Scott fine-ore furnace at New Almaden and the almost simultaneous invention of the pan-amalgamation process for gold extraction. Prices of over \$100 per flask stimulated the opening of mines in all sections of the state, principally in the three counties herein discussed. The highest quotation

per flask, until the World War boom, was \$118.55 in 1874—preceded by \$80.33 in 1873, and followed by \$84.15 in 1875 and \$44 in 1876. The decline then was rapid, the lowest year being 1882 with a price average of \$28.23. Many mines closed, to reopen with the stimulus of the war boom, prices in 1914-1916 leaping to nearly \$300, although few sales were made at that figure. After the war the fall was again sharp, prices going even lower than before 1874.

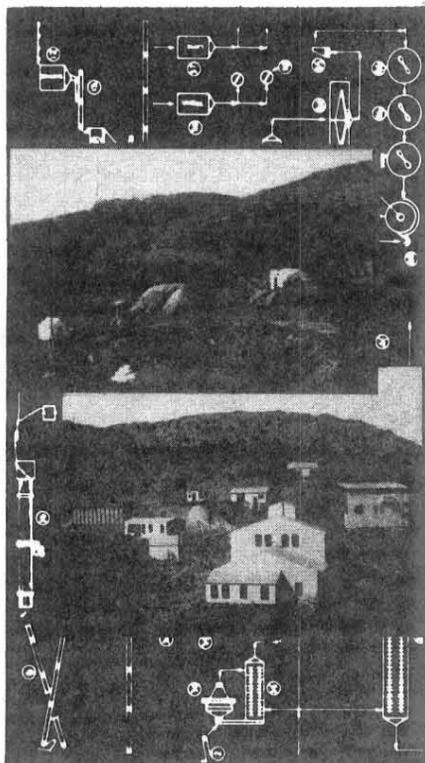
Present war-time demands have again caused a mercurial rise, with quotations of \$165 in January 1941, and \$210 in January 1942. The OPA recently fixed the price at \$191 f.o.b. shipping point. Mercury is by nature an unstable substance. It will be interesting to see whether efforts to stabilize the price can be made successful.

EXPLOSIVES CONTROL IS SET UP BY BUREAU OF MINES

IN ACCORDANCE with provisions of the explosives control act, the United States Bureau of Mines is setting up an explosives control division to function under the direction of D. Harrington, chief of the health and safety branch, and C. E. Nighman, chief engineer, explosives control division. In the west, general supervision of the work will be handled by E. H. Denny, district engineer of the safety division, stationed at the bureau's Salt Lake City office.

Nighman has been in Washington, D. C., since 1940, affiliated with the General Land Office and the Bureau of Mines. Previously, he was associated with the Anaconda company, being the first superintendent of the Conda phosphate mine in Idaho and its Polish holdings. Later he was manager of the Jardine Mining Company in Montana.

The explosives control act is designed to prevent explosives or their ingredients from getting into the hands of saboteurs and others disloyal to the United States, or of persons believed to be unreliable or incompetent to handle explosives.



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written while he was a student at the Montana School of Mines from which he was graduated in June 1941, was entitled "Relationship of Manganese Minerals in the Butte District." Parent, who obtained his degree in geological engineering, is now employed in Butte by the Anaconda Copper Mining Company.

Robert T. Banks, who was formerly manager of the Utah area for the Sullivan Machinery Company with offices at 117 North Second Street, Salt Lake City, has been appointed manager of the recently combined Spokane, Washington, Butte, Montana, and Salt Lake City, Utah, territories, and will continue to make his headquarters at Salt Lake City. L. C. Rhodes, who had been the Spokane manager, has been transferred to the company's San Francisco office at 145 Tenth Street.

Ray E. Nelson, Cottage Grove, Oregon, is building an experimental plant to test a method of extracting zinc from the complex ores of the Bohemia district. The method is electrical, but not of the older electrolytic type, and has been under development for a number of years. Nelson, with his son Robert, also of Cottage Grove, is developing the Utopian mine in the Bohemia district of Lane County near Cottage Grove. The property has values in gold, silver, lead, copper, and zinc. The Nelsons also are working the Sweepstakes gold-silver claims in the same district.

CALIFORNIA GOLD MINES SEEK PRIORITY RESTORATION

CALIFORNIA mining men and officials from 13 California gold producing counties met in Sacramento, California, on March 27 to lay out a program under which they will seek to have restored to the gold mining industry a priority rating on machinery and repair parts, taken from the industry under the War Production Board's ruling of March 2.

Among the items suggested for consideration by the WPB were the following:

A thorough survey to determine the minimum amount of machinery which the industry would require to operate.

Conservation of equipment and materials by pooling on the part of mine operators.

A proposal to trade in approximately 10 pounds of scrap for each pound of steel in new machinery or repair parts.

Agreement by the gold mining industry to defer expansion of operations for the duration of the war.

The operators likewise pointed out that if the deep gold mines are forced to close down the closure would be permanent, since they would be flooded and dewatering operations would be too costly to warrant the attempt. They further pointed out that in many instances a shutdown of the gold mines will throw many men out of jobs and will result in a number of ghost towns.

A committee was named to draft resolutions setting forth the plight of the gold mining industry. This committee will forward its resolutions to the WPB and probably will send a representative to Washington to appear before the board.

Members of the committee are: Donald F. McLaughlin, dean of the College of Mines, University of California, chairman; E. B. DeGolia, president, Gold Hill Dredging Company; John A. Burgess, general manager, Carson Hill Gold Mining Company; F. C. Van Deirse, president, Gold Producers of California, and vice-president, Yuba Consolidated Gold Fields; George Hallock, president, California Hydraulic Mining Association, and president, Sixteen to One Extension Gold Mines, Ltd.; Robert Searls, attorney for the American Mining Congress; and Errol MacBoyle, chairman of the state mining board and executive vice-president of the Idaho Maryland Mines Corporation.

CAREFUL HANDLING OF EQUIPMENT IS ADVICE TO GOLD MINERS

THE plight of the gold and silver miner of today may be relieved considerably if he will heed the advice offered by A. H. Beebe, general superintendent of the Carlton mining interests at Cripple Creek, Colorado. "There is one thing that must be emphasized and that is the fact that extreme care on the part of all employees in the use of equipment and machinery will prolong their life indefinitely. Machines, hose, and other equipment can be kept much longer with careful use."

There are numerous ways in which articles may be conserved, Beebe stated, such as cutting all rubber hose lengths from 50 to 20 or 25 feet and saving what is taken off. Then pipelines can be pulled up that much closer to the machines. Other methods of saving articles with high priority ratings may be found and adapted to each particular property, he indicated.

OBITUARIES

A. Klockman, 83, owner of the Idaho Continental lead-silver mine near Porthill, Idaho, died February 26, 1942, in Spokane, Washington.

Howard K. Welch, 60, mining engineer, died March 25, 1942, at Tucson, Arizona. He was a graduate of Yale University, class of 1904, and had been a resident of Tucson for 26 years.

Wallace Lee Ropp, 73, died March 16, 1942, at the Blythe Hospital, Blythe, California. He was a resident of Quartzsite, Arizona, and had been associated with his brother, John N., in the Ropp alunite mine near Quartzsite.

Ralph C. Nowland, chief exploration engineer for the Utah Copper Company, died February 5, 1942, at Oakland, California. He had been connected with the company for a number of years, having joined the staff of the exploration department in 1914.

Owen George Beck, bookkeeper for the Phelps Dodge Corporation for many years, died in the Phelps Dodge hospital at Morenci, Arizona, March 21, 1942. He went to Tyrone, New Mexico, in 1920 and in 1924 was transferred to the company's supply department at Morenci, holding that position until he suffered a nervous breakdown in December 1941.

dent, 526 Gibson Street, Miami, Arizona. Al Stovall is manager. The Apache mine is owned by Louis A. Kuehne, Box 366, Globe.

The Chloride Reduction Mill at Chloride, Arizona, has been taken over by Albert A. Hall of Las Vegas, Nevada. He plans to operate the mill as a custom plant.

C. Q. Schlereth, Equitable Building, Denver, Colorado, and associates are examining and testing the Arizona King mine six miles west of the Bagdad Copper Company property near Hillside, Arizona. The mine, owned by the Lawler Estate of Prescott, Arizona, carries values in zinc. Schlereth is consulting engineer for Bagdad Copper Company.

The Patagonia Manganese Mines, Inc., headed by Clifford H. Marker, 1919 South Santa Fe Avenue, Los Angeles, California, is operating its mine and a 50-ton milling plant at Patagonia, Arizona. The plant is running at capacity and ore is shipped to the Metals Reserve Company stockpile at Phoenix, Arizona.

The Davenport Mining and Milling Company, Harry H. Hughes, Jr., general superintendent, Kingman, Arizona, is reported to be shipping an average of 100 tons of lead and zinc concentrates weekly and plans are being considered for increasing the output.

A crew of approximately 100 men is employed at the property of the Tennessee Schuylkill Corporation, Chloride, Arizona, and the 150-ton milling plant is operating almost at capacity under the direction of Jacob Schoder, general manager. Values are in lead, zinc, gold and silver.



Construction of a 1,200-ton pig iron blast furnace in Southern California is planned by Henry J. Kaiser, Latham Square Building, Oakland, California, and associates. Iron ore will be mined from the Eagle Mountain district and coal or coke will be secured from Utah. A rolling and plate mill may also be included if approval of the War Production Board is obtained.

The Sandoro Mining Company, 402 Pacific Mutual Building, Los Angeles, California, has acquired leases at the Big Horn mine and at the Tungsten Queen mine in the district near Darwin, California, and active mining operations are to begin soon. Headquarters have been established in Lone Pine, California, and plans call for erection of a 60-ton mill between Lone Pine and Keeler for the processing of lead, zinc, copper, tungsten, antimony, and molybdenum ores. The mill, which will cost approximately \$45,000, will handle custom ore also. Operations at Lone Pine are directed by Jim MacDonald.

As soon as weather conditions permit, large scale operations will be undertaken at the Texas Hill mine near Coulterville,

California. The mill now on the property will be reconditioned to handle the ore, a substantial amount of which is reported to be blocked out. The mine is under lease to W. J. Beatty, Coulterville, who is in charge at the property. It is owned by G. Ross Frank, 915 Shreve Building, San Francisco. Operating personnel at the mine includes G. A. Ogden, mine superintendent, and F. L. Cullers, mill superintendent.

The Alleghany Lode Mining Company, organized recently by Edward B. Pond, Alleghany, California, and associates, is operating the Three Kings mine near Alleghany, also known as the Irelan property. Bert C. Austin, 816 Mills Building, San Francisco, California, is consulting engineer for the new company.

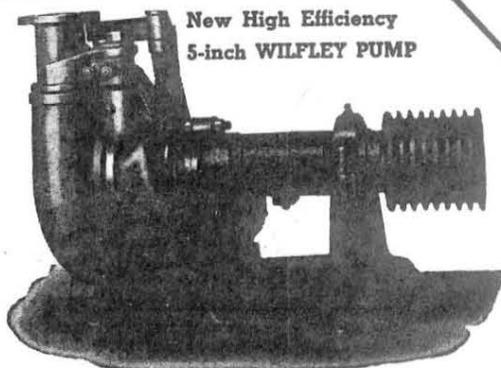
Mining operations on an extensive scale are planned at the property of the Vallecito Mining Company near Murphys, Calaveras County, California. The mine is held under lease by the Thomas B. Bishop Company of San Francisco and Don Steffa of Murphys is in charge at the property.

At the property of Tungstar Corporation, Bishop, California, a tunnel is being driven to contact one of the ore bodies at a vertical depth of 350 feet. The work is directed by P. N. Stevens, general manager, 6233 Hollywood Boulevard, Hollywood, California. Operating personnel at the mine includes W. B. Phelps, general superintendent; W. A. Linfesty, mill superintendent; Ernest Kinney, chief chemist; and Malcolm Harmon, purchasing agent, all of Bishop.

The Mojave Smelter at Mojave, California, has been taken over by the Union Smelting Company and has been revamped under the direction of H. G. Twiford, 530 Loring Avenue, West Los Angeles, California, and I. Blum of San Francisco. The smelter was built by Blum about eight years ago but has never been operated. The company plans to have the plant operating early in April and expects to be handling approximately 100 tons daily in the near future. It is not planned to do custom smelting as the company has a fair supply of its own lead ore, but it would consider buying ore. The plant may run some silver and gold with lead ore but no zinc. Power will be furnished by the Southern California Edison Company.

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
1913	15.52	4.40	5.61	59.79
1914	13.31	3.87	5.11	54.81
1915	17.47	4.67	14.16	49.68
1916	28.46	6.83	13.57	65.66
1917	29.19	8.71	8.93	81.42
1918	24.68	7.46	8.04	96.78
1919	18.90	5.81	7.04	111.12
1920	18.05	8.08	7.77	100.90
1921	12.33	4.55	4.67	62.65
1922	13.67	5.71	5.74	67.52
1923	14.75	7.25	6.66	64.87
1924	13.28	8.08	6.35	66.78
1925	14.30	9.02	7.66	69.06
1926	14.05	8.42	7.37	62.11
1927	13.17	6.75	6.25	56.37
1928	14.81	6.31	6.03	58.18
1929	13.35	6.83	6.49	52.99
1930	13.23	5.52	4.56	38.15
1931	8.37	4.24	3.64	28.70
1932	5.79	3.18	2.88	27.89
1933	7.28	3.87	4.03	34.73
1934	8.66	3.86	4.16	47.97
1935	8.88	4.06	4.33	64.27
1936	9.71	4.71	4.90	45.09
1937	13.39	6.01	4.90	44.80
1938	10.22	4.74	4.61	43.22
1939	11.20	5.05	5.12	39.08
1940	11.53	5.18	6.34	34.77
1941	12.00	5.79	7.48	34.78
1941				
Jan.	12.00	5.50	7.25	34.75
Feb.	12.00	5.60	7.25	34.75
Mar.	12.00	5.77	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	34.77
Dec.	12.00	5.85	8.25	35.13
Av. 1941	12.00	5.79	7.48	34.78
1942				
Jan.	12.00	6.28	8.25	35.13
Feb.	12.00	6.50	8.25	35.13
Mar.	12.00	6.50	8.25	35.13



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Quartz ore extracted on the 1,700-foot level of the Schroeder mine 12 miles southwest of Yreka, California, is reported to have averaged around \$80 per ton and the property is said to be responding well to development of new territory from the lower workings. A caved section of the mine has been retimbered and present operators have extended the work along the ledges to considerable depth. Major H. A. White is general manager and H. G. Pharis is superintendent, both of Yreka.

The Alpine Mining Company has been organized by A. L. Stewart, head of the San Rafael Military Academy, San Rafael, California; John V. Lewis, former collector of internal revenue in San Francisco, and Clyde C. Sherwood, attorney, with a capitalization of \$25,000. The company proposes to develop mining property in Alpine County, California, near the Nevada state line in a search for chrome deposits.

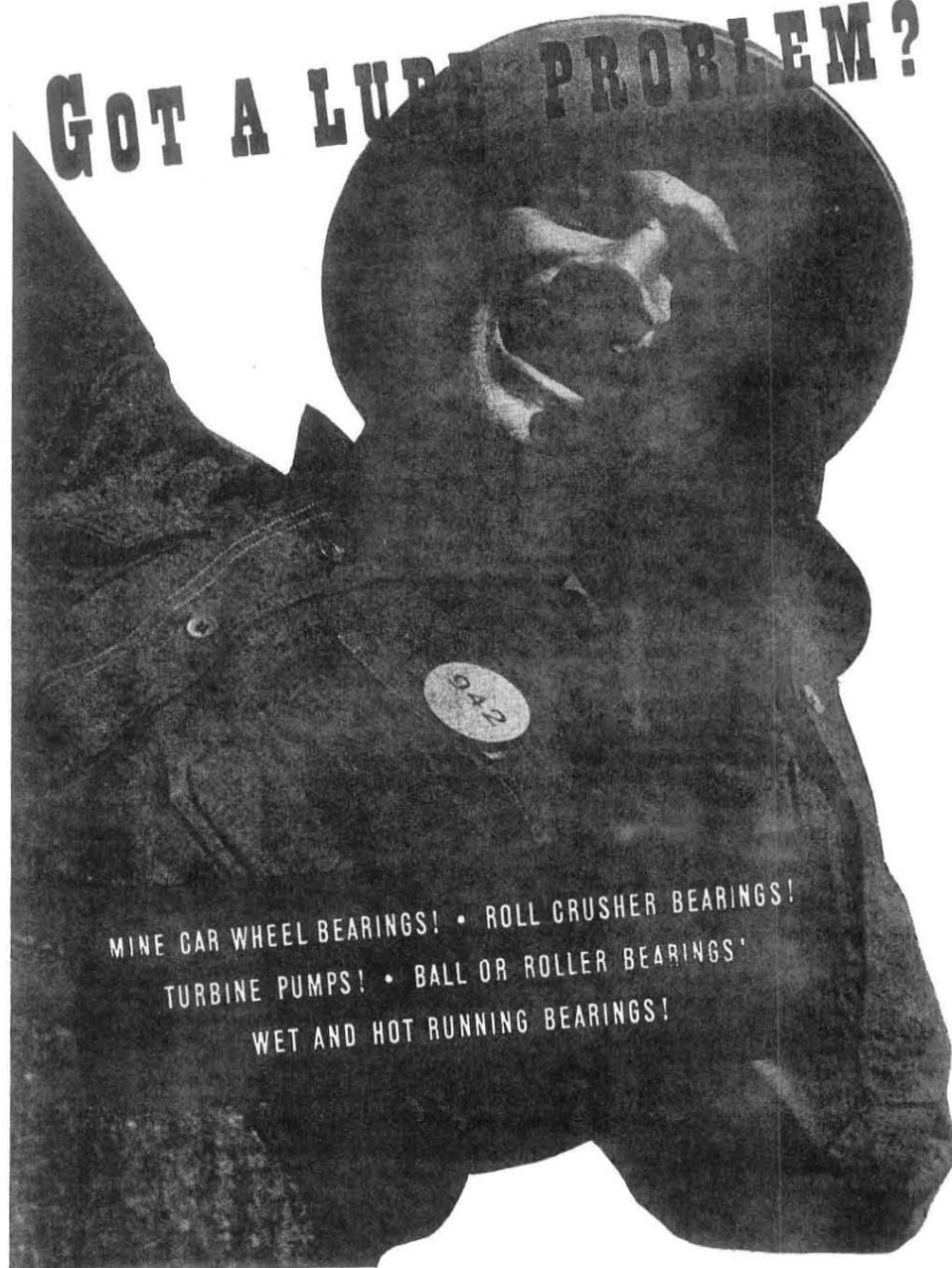
William Rea, who owns gold property in the Chedago range near Benton, California, is making occasional shipments to the Mineral Reduction Company plant at Benton.

A crew of five men is employed at the Joubert hydraulic mine near Camptonville, California, and one seven-inch monitor is in operation. Tailings are stored behind Bullards Bar dam. The Joubert is declared to be the oldest hydraulic mine in point of years in California. It has been operated by the Joubert family continuously since 1855 except in 1924 when it was closed down because of lack of water. There is said to be sufficient ore to warrant continuous operations for another 16 to 18 years. Work at the property is directed by Fred Joubert.

Chrome ore running as high as 65 per cent is reported at the Champion mine near Nevada City, owned by Dr. Carl P. Jones of Grass Valley, California. It is understood that arrangements are being made for installation of dragline equipment at the property soon.

Erection of a \$15,000,000 magnesium plant at Lone Pine, Inyo County, California, has been proposed to the War Production Board by Nevada Magnesium, Inc., Leo V. Youngworth, president, 548 South Spring Street, Los Angeles, California. Installation of the plant is urged on the ground that Los Angeles airplane factories are principal users of magnesium metal. The plant would use magnesite and brucite ore from a calcining plant being erected at Gabbs Valley near Luning, Nevada. Erection and operation of the plant will be under the direction of a corps of engineers, composed of E. A. Burrows, Washington, D. C.; Fred Crolius, Pittsburgh, Pennsylvania; T. F. Faily, Canton, Ohio; and Frank R. Wicks and R. McC. Beanfield, both of Los Angeles, California. Power for the project, totaling approximately 50,000 kilowatts, would be furnished by the Los Angeles Bureau of Water and Power from Lone Pine sources. In addition to Youngworth, officers of the company include Walter E. Smith, vice-president, and Earl B. Gilmore, treasurer. Smith is president of the Keystone Tool and Supply Company, and Gilmore is president of the Gilmore Oil Company.

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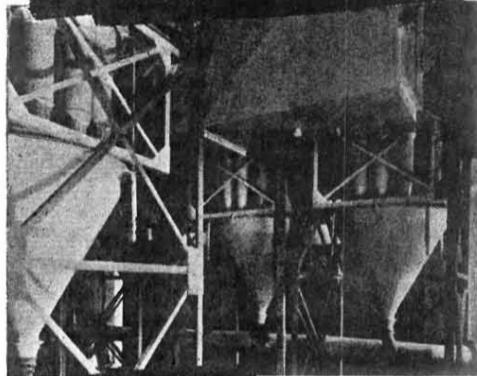
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National Metals Company of South San Francisco, California, will materially increase the capacity of its plant for treatment of magnesite ores from California and Nevada magnesite mines. A 52 per cent interest in National Metals was acquired recently by Goldfield Consolidated Mines Company, George Wingfield, president, Box 2520, Reno, Nevada.

Offices of the Mountain Copper Company, Ltd., William F. Kett, general manager, have been moved from 351 California Street to 216 Pine Street, San Francisco, California. The company operates at Matheson, California.

A road has been opened and machinery and lumber are being moved in to cinnabar deposits of the Perini Mines Corporation, S. L. Perini, president, Bodie, California. The property is located at the head of Rough Creek in the Masonic Hills and is being operated under lease by J. P. and E. L. Jones and G. M. Proctor, all of Los Angeles. Work will be stepped up as soon as weather conditions permit.

The milling plant of the Western Tungsten Corporation near Bishop, California, has been enlarged to a capacity of 150 tons daily and is to be placed in operation during March. The company is headed by Clifford H. Marker, president, 1919 South Santa Fe Avenue, Los Angeles, California, and John L. Rowe, secretary, 215 West Seventh Street, Los Angeles.

G. G. Iseminger, Star Route 1, Porterville, California, is offering for sale the complete mine and mill equipment at his Iseminger mine located 2½ miles south of White River, Tulare County, California. The equipment is to be sold "as is, where is" on the property, and includes ball mill, crusher, flotation cell, classifier, jig, plates, conveyors, power unit, pumps, tanks, retort, grizzly, gold pans, shafting, compressor, hammer, stoper, mine rail, pipe, ore car, and camp equipment.

At the property of the Ballard Mother Lode Mines, Inc., Plymouth, California, crosscuts are being run from the 300-foot level for the purpose of contacting the footwall and hanging wall veins which are east and west of the shaft. John F. Ratto, Sutter Creek, California, is president and general manager of the company, and Albert Raggio, Jackson, California, is assistant general manager.

Drifting is continuing on the Lone Pine claim of the Hayden Hill Gold Corporation, Adin, California, and four men are employed under the direction of F. H. Brown, general superintendent. The Hayden Hill is under lease to the King of Pine Creek Mining Company, Ltd., Carl Halstrom, president and general manager, 419 Symons Building, Spokane, Washington. The property is equipped with a 40-ton cyanide plant and future plans include reconditioning of the mill and increasing its capacity to 80 tons daily. It also is planned to explore the North Star claim later.

Milling operations are again averaging 125 tons of ore daily at the Shaw mine six miles north of Placerville, California, following a setback caused by heavy storms in mid-January. The Shaw is operated by

the Volo Mining Company, headed by F. V. Phillips, president and general manager. The milling plant has a capacity of 300 tons and it is planned to bring the cyanide recovery tanks up to that capacity by spring. Old workings of the mine have been opened up and glory hole operations also are being carried on. The mine train at present consists of four ¾-ton cars which are powered by a gasoline engine, but plans contemplate an early replacement of the gas engine by an electric battery-driven locomotive and the acquisition of larger ore cars. Milling equipment includes a 300-ton Hardinge ball mill; a 36-inch Pan-American jig; a Hardinge classifier; four 35-foot thickeners; three 12 by 14-foot agitators; and other solution, clarifying, and water tanks. Addition of two thickeners is contemplated to step up the production this spring. Operating personnel at the mine includes Gilbert Gardner, general superintendent; Earl Hamilton, mine superintendent; and George Phillips, mill superintendent. A crew of 12 men is employed.

A high-grade quartz pocket valued at approximately \$20,000 was opened recently at the Quartz Hill gold mine near Scott Bar, California, operated by George Noonan of Scott Bar. The mine has been a producer for many years and a small crew is employed steadily.

Fred Creith, Randsburg, California, recently made the first shipment of ore from his antimony claims near Skidoo in the Panamint Mountains. The ore was hauled to Los Angeles and from there was shipped to a Texas smelter. It is understood that additional shipments will be made soon.



The Anglo-Saxon Mines, Inc., expects to start production this spring after a development program carried on for the past three years. The property is a gold-silver mine in Clear Creek County near Georgetown, Colorado. Walter V. Berry, 7742 Eighteenth Northeast, Seattle, Washington, is president and Robert J. Silva, Box 445, Georgetown, is foreman. About nine men are employed.

The Rico Argentine Mining Company has installed three compressors and other equipment at the Pelleyre group of 250 patented and unpatented claims and will continue to add machinery from time to time. The company acquired the ground, which was without equipment, last October and to date activity there has been confined to deadwork. The company mined and milled 35,720 tons of ore during 1941 from its holdings at Rico, Colorado, and while this was below the 1940 figure in tonnage, a greater quantity of metal was extracted. Recovery amounted to 4,818,991 pounds of lead and 6,170,073 pounds of zinc. The Argentine shaft is being reopened and diamond drilling is projected for several portions of the com-

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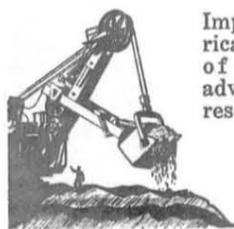
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tianson of Spanish Fork, Utah, was re-elected president and general manager. Other officials for the current year are Emil Ostlund of Springville, vice-president, and William C. Beckstrom of Spanish Fork, secretary-treasurer.

Development and exploratory operations have been started by the U. S. Vanadium Corporation in Beaver County about 10 miles west of Beaver, Utah. The company holds a 10-year lease on a group of four unpatented claims from A. E. McGarry of Beaver and Hartley G. Dewey of California. Clarence H. Hall, company engineer with headquarters at 121 Thirteenth Street, Manhattan Beach, California, is directing the work, with Alex Ranson in local charge at Beaver. Others at Beaver include Ward Aspes, recently transferred from the company work at Bishop, California, who will have charge of drilling; Sam Martin, lately of Luning, Nevada, who will assist Aspes; and Otto Von Sill. Blair Burwell of Uran, Colorado, is general superintendent of the company's Colorado and Utah units.

Development of a Missouri property is planned by the Park City Consolidated Mines Company, Gloyd M. Wiles of Park City, Utah, vice-president. The company holds the property under bond and lease.

WASHINGTON

A group of Spokane and Seattle business men, including Paul H. Graves, 908 Overbluff, Spokane, Washington, W. M. Marshall, also of Spokane, and Charles F. Clise and J. O. Gallagher, both of Seattle, is said to have leased extensive magnesite property near Valley north of Spokane. The leases cover 680 acres. The property leased includes the Double Eagle claim of 300 acres owned by the Double Eagle Mining Company, Mike Kulzer of Valley, president; 160 acres and a mill site north of the Double Eagle and owned by Kulzer; three claims, comprising 60 acres, owned by J. Richard Brown, 409 Metals Building, Spokane; two claims which cover 40 acres and are known as the Brown and Carr property; and six claims located between the Double Eagle and Kulzer property, comprising 120 acres. The group has been incorporated under the laws of the State of Washington and will be known as the Columbia Metals Corporation.

CHROME PRODUCERS GROUP IS ORGANIZED IN OREGON

AN ASSOCIATION of chromite producers, known as the Grant County Chrome Association, was formed recently in Oregon, and Frank B. Prescott of John Day, Oregon, was named president of the group. Other officers elected include John Liviera of Canyon City, secretary; and James Wyllie, John Day, George Ray, Jr., Prairie City, I. B. Hazeltine, Canyon City, and C. L. Smith, John Day, members of the executive committee. The new organization has sent recommendations to the Metals Reserve Company regarding the production and purchase of chromite ore in Oregon.

SEEKS TO INVESTIGATE P-56 PRIORITY AMENDMENT BY WPB

A RESOLUTION calling for a special congressional investigation with respect to the origin and need for amendment to Preference Rating Order P-56 by the War Production Board, excluding mines producing more than 30 per cent of their values in gold and silver from its benefits, has been introduced into the United States Senate by Senator McCarran of Nevada. It has been referred to the committee on mines and mining.

The resolution provides that the investigating committee shall determine the extent to which consideration was given to the effect of the amendment on: (1) the mining industry in general; (2) the economy of mining communities; (3) creation of unemployment; (4) the extent to which silver may be used in the war effort as a substitute for strategic minerals; (5) the activities of prospectors searching for strategic minerals for the war effort; and (6) the losses in tax revenues to the federal, state, and local governments resulting from the closing of mining enterprises unable to secure equipment for their continued operation.

ZINC INSTITUTE WILL HOLD ANNUAL MEETING IN ST. LOUIS

THE twenty-fourth annual meeting of the American Zinc Institute will be held April 20 and 21 in St. Louis, Missouri. Washington agencies concerned in the war effort have welcomed the opportunity to participate in this meeting and expect to send representatives to St. Louis to discuss and advise on various phases of the industry's part in the Victory program.

Among the important subjects to be covered are slab zinc production and distribution; mine production, quotas, and priorities. A comparative study of the world's supply of strategic metals is also scheduled. Special speakers will discuss current trends in national policy towards taxation, labor, and other vital problems.

ARGONAUT AND EMPIRE MINES SHUT DOWN FOR DURATION OF WAR

THE Argonaut Mining Company, Ltd., Alex F. Ross, superintendent, Jackson, California, discontinued operations at its Argonaut mine at the end of March for the duration of the war. All the water originating above the 5,700-foot level will be handled as usual, but the small amount below that will be allowed to accumulate.

The Plymouth Empire mine will discontinue work at the end of April, also for the duration of the war. The Plymouth Tails Plant will continue, however, in the hope that it will be possible to secure necessary supplies, even during the war emergency.

It is believed that the income from security holdings, together with the Plymouth Tails Plant depreciation and overhead charges and profit, and a reduction in inventory, especially of timber and iron and steel, should leave intact the company's cash balance so that when peace comes, operations can be resumed at both the Argonaut and Empire mines.

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additional shaking conveyors which were installed underground.

Full electrification of the open-pit mine at Santa Rita, the New Mexico Division or Chino mines, was completed with the purchase of additional locomotives to replace the last of the steam motive power. Other new mine equipment included one five-yard electric shovel and 20 dump cars. Sixteen new houses and a theater were built at Santa Rita and eight houses and a teachers' dormitory at Hurley. Installation of a 230-foot diameter Dorr thickener tank was started at the mill and smelter at Hurley, about eight miles from Santa Rita, and a new lime burning plant was nearly completed at the end of 1941. Four wells were drilled there to augment the water supply, and developed an initial flow of 800 gallons per minute. This additional gallage, together with the water that will be saved through the Dorr thickener installation, should provide sufficient water to treat present ore tonnages in seasons of normal rainfall.

In Chile, Kennecott's Braden Copper Company mined and milled 8,316,084 tons of ore averaging 2.11 per cent copper, the largest in the property's history. During the first half of the year labor shortage coupled with sub-normal-grade ore reduced production considerably, but conditions improved in the later months. Total copper production amounted to 290,358,872 pounds, which compares with 240,714,866 pounds in 1940.

All three of the company's fabricating plants were operating almost entirely on defense work during the year and the new defense plant being built for the Defense Plant Corporation is expected to be completed and in operation before the middle of 1942.

The Alaska Steamship Company, Kennecott controlled, handled the largest volume of traffic in all of its many years of service. The entire fleet was in steady operation throughout the year, as contrasted with the customary lull during the winter months.

ROGUE RIVER GROUP TIGHTENS MUD DUMPING RESTRICTIONS

THE Rogue River Coordinating Board has announced that mud dumping restrictions for gold miners will go into effect April 15, 1942, 45 days earlier than last year. Mining was not restricted in 1941 until May 30.

The board notices state that after midnight April 15 water which contains mud or tailings may not be discharged into any of the streams emptying into the Rogue River if the turbidity of the water at the point of the stream's junction with the river is more than 1,000 parts per million by weight of suspended matter. The same ruling is reported to apply to the Illinois and Applegate rivers as well as the Rogue River. The points chosen for determination of the muddiness of the water is understood to be where the Illinois and the Applegate rivers cross the Redwood highway. All three of the rivers are in southwestern Oregon and northwestern California.

AMERICAN ZINC REPORTS INCREASED PROFITS FOR 1941

THE American Zinc, Lead and Smelting Company, in its annual report for the year ended December 31, 1941, shows a net profit of \$766,500 after federal income and excess profits taxes, etc. This represented an increase of \$27,832 over the net profit of the preceding year. Net sales for the year amounted to \$21,143,714, which is an increase over 1940 of \$6,683,765. Tonnage shipped for the year was 17.91 per cent higher than that of the year before.

At the Dumas, Texas, plant, which American Zinc operates under joint account, three furnace blocks and a Cottrell precipitator to collect the cadmium-bearing dust from its sintering plant, together with the necessary plant facilities for converting this dust into metallic cadmium, were installed. Slab zinc capacity of the plant was increased 150 per cent in 1941.

At the company's Mascot mine in Tennessee an all-time high was reported for production during 1941, tonnage milled totaling 1,017,451 tons. The Jarnagin property in Tennessee was placed in production during the second quarter of the year and produced 6,026 tons of concentrates, while the New Market-Grasselli mine was run at maximum capacity on a six-day-per-week basis throughout the year.

The Metaline Mining and Leasing Company's mine at Metaline Falls, Washington, which is operated under lease agreement by American Zinc, Lead and Smelting Company, was run on a small scale throughout the year. Total tonnage amounted to 65,157 tons of ore from which were produced 6,668 tons of zinc and lead concentrates. Development work consisted of 3,450 feet of underground drifting, incline, and raises, and 21,490 feet of diamond drilling, results of which were reported to be disappointing. The Grandview Mining Company property, also located at Metaline Falls and operated under lease by American Zinc, produced 76,049 tons of ore from which 7,690 tons of zinc and lead concentrates were produced. It is reported that 3,312 feet of diamond drilling and 1,295 feet of drifts and inclines were completed during the year, and the outlook for continued profitable operations at the mine were encouraging.

The use of the M. B. I. (Heavy Density) process of mineral concentration was further expanded in 1941 by the addition of a unit at the garnet property in New York and a tin property in Bolivia. Through a new contract the American Zinc company acquired a world-wide interest in all royalties collected from the process and has arranged with the American Cyanamid Company of New York, New York, to act as sales and technical agent. The American Cyanamid concern has provided modern testing equipment at Stamford, Connecticut, where ores from many sections of the world are being shipped for testing.

At the end of the year the American Zinc, Lead and Smelting Company had a total of 2,403 employes at all its properties, and total expenditures for wages,

MAGMA REPORTS INCREASED PRODUCTION TO MEET WAR NEED

A NET profit of \$1,492,255 for the year 1941 is reported by the Magma Copper Company, 14 Wall Street, New York, after all deductions except depletion. The company's mine at Superior, Arizona, operated continuously on a production basis except for the regular summer shutdown. From October 1 to the end of the year the mine produced approximately 15 per cent, on an annual basis, in excess of the production of the previous two years.

Three Carrier centrifugal refrigerating machines, together with the necessary auxiliary equipment, were purchased and installed during the first half of the year. These machines have the same cooling capacity as those purchased in 1937 and 1939 but are designed to use condenser water having a temperature of 117 degrees Fahrenheit, which is the temperature at which the water leaves the condensers in the three old machines. This makes it possible to double the amount of cooled ventilating air by operating each of the new machines in series with one of the old machines.

The mill operated on full production except for a summer shutdown of about a month. The company treated 245,885 tons of copper ore, assaying 5.26 per cent copper, and 80,810 tons of copper-zinc ore, assaying 1.77 per cent copper and 8.16 per cent zinc. The overall tailings averaged 0.23 per cent copper, and the overall recovery was 91.12 per cent. The zinc section of the mill, except for the summer shutdown and a few minor interruptions, operated continuously throughout the year. A satisfactory zinc concentrate was made and some improvement in recovery over the previous year was attained. There were produced and shipped to a zinc smelter during the year 9,137 tons of zinc concentrates, assaying 49.67 per cent zinc.

Smelter production was carried on continuously during the year except for the summer shutdown for major repairs and two other brief shutdowns for minor furnace repairs. The smelter metal production for the year, after deducting all losses, including refinery, was as follows: Magma mine: 37,152,224 pounds copper; 631,189 ounces silver; 11,740 ounces gold; and 7,715,313 pounds of zinc. Superior mine:

59,679 pounds copper; 2,591 ounces silver; 1,139 ounces gold. Other sources: 129,664 pounds copper; 132,454 ounces silver; 1,480 ounces gold. Total production: 37,341,567 pounds copper; 766,234 ounces silver; 14,360 ounces gold; 7,715,313 pounds zinc.

The Magma mine produced during the year 405,540 tons of ore, assaying 5.23 per cent copper, 1.79 ounces silver, and 0.024 ounce gold. In this tonnage is included 324,555 tons of copper ore assaying 6.1 per cent copper and 80,985 tons copper-zinc ore, assaying 1.77 per cent copper and 8.17 per cent zinc. During 1942 the company's Superior mine produced 4,765 tons of siliceous gold ore, assaying 0.67 per cent copper; 0.564 ounce silver; and 0.239 ounce gold. Magma purchased from shippers and treated at the smelter 10,052 tons of ore and concentrates.

Rainfall was evenly distributed throughout the year and sufficient water was pumped from the mine to take care of all operations, making it unnecessary to draw on the smelter storage reservoir.

Early in September, at the request of the government and for defense purposes, production in the mine was increased to the capacity of the shafts and their equipment. In order to treat the additional output of the Magma mine, the amount of gold and silver custom ore which the smelter had been treating was reduced to approximately 25 per cent of the amount treated during the first half of the year.

IDAHO MARYLAND REPORTS INCREASE IN GRADE OF ORE

A 36 PER CENT gain in average grade of ore mined by Idaho Maryland Mines Corporation, Grass Valley, California, in 1941 was offset by a 35 per cent drop in ore tonnage resulting from a shutdown during May 1941 because of a jurisdictional dispute between members of the two unions. Net profit for the year, amounting to \$1,008,315, represented a decrease of 14.8 per cent from the previous year, which totaled \$1,183,159. Both figures are after provision for depletion, depreciation, and income taxes.

Dividends paid in 1941 totaled \$1,074,021, or 60 cents a share. Early in 1942 the company made a radical change in its dividend policy, going from a monthly

to a quarterly basis because of uncertainties caused by the war emergency.

During 1941 the company purchased properties of Grass Valley Bullion Mines and the latter company was dissolved. The agreed purchase price was credited on indebtedness of Grass Valley to Idaho Maryland. Balance of the properties are now carried on Idaho Maryland books at cost less depletion and depreciation accrued to Grass Valley. The balance of the indebtedness of the Grass Valley company has been written off as a bad debt.

The largest producer of gold from quartz in California for the third successive year, and second largest in the United States, being exceeded only by Homestake in South Dakota, Idaho Maryland continued development work successfully in 1941, locating new ore shoots and veins in the upper horizons as well as at lower levels. Tonnage and grade of new ore developed are satisfactory and there apparently is more ore in sight than at the beginning of the year.

MEXICAN RESOURCES ARE TO BE DEVELOPED WITH AMERICAN AID

A \$50,000,000 program to develop Mexican resources vital to the United States' war effort will be formulated by American and Mexican officials. Funds for this three-point drive would be expended for the following purposes:

The sum of \$20,000,000 is to be used to increase production in existing zinc, lead and copper mines in northern Mexico, and to open new ones, with primary importance being given to American-owned properties. Another \$20,000,000 to be used for rehabilitation of Mexico's national railways. Most of this fund will go into the purchase of new rolling stock, principally locomotives and freight cars. The balance of \$10,000,000 would be used to build feeder highways which would connect the mines with important shipping centers.

In addition to the above there is pending a project for the development of low-grade ores in the Cananea district, which, if proper facilities can be obtained from the Mexican government and the United States, would be financed by advances from the Greene Cananea Copper Company of New York on the purchase of the copper to be produced.

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Increased Output of Strategic Metals

LARGE increases in domestic production of strategic metals vital to the war effort have been effected by Metals Reserve Company, in cooperation with the Reconstruction Finance Corporation and Defense Plant Corporation, according to a report prepared by Charles B. Henderson, Metals Reserve president, for Jesse Jones, secretary of commerce. Zinc smelting capacity has been increased, arrangements have been made for greater copper output, and marked gains in the output of aluminum, chromium, manganese, tungsten, vanadium, and other metals, have resulted from the work.

Excerpts from Henderson's memorandum, outlining the details for the program, follow.

Aluminum and Bauxite

Arkansas—Contracts have been made with American Cyanamid and Chemical Corporation and with Reynolds Mining Company for production of 540,000 and 300,000 long tons per annum, respectively, of low-grade bauxite. Republic Mining and Manufacturing Company, a subsidiary of Aluminum Company of America, is proceeding with stripping operations preliminary to increased production, and with several small producers will supply the balance of approximately 840,000 long tons per annum required for the million-pound alumina plant now under construction in Arkansas. Plans are proceeding for possible increase in production of high-grade bauxite in Arkansas to 2,000,000 long tons per annum, and for stockpiling any excess of current production over consumption. The program represents a total increase of approximately 200 per cent over 1941 domestic production of bauxite, and is scheduled to keep pace with increasing requirements for aluminum.

In addition, our engineers are making studies on the ground in Arkansas in connection with possible emergency production from Arkansas far in excess of the above program.

Antimony

Idaho—Negotiations are in process with Sunshine Mining Company for a metal contract in connection with expansion of production at its new property from 30,000 pounds to 150,000 pounds of antimony per month. Discussions are proceeding with the Bradley Mining Company for possible production from the large low-grade antimony deposit surrounding its rich tungsten mine.

Texas—Contracts made with the Texas Mining and Smelting Company have permitted that company to make a large increase in imports of Mexican antimony ores, for metal production in Texas.

Domestic production of antimony continues to supply only a small proportion of domestic requirements.

Cadmium

The increase in facilities for electrolytic zinc production, being made in Montana

In an official report, Metals Reserve Company summarizes the steps which it, in cooperation with other government agencies, has taken to increase the domestic production and reserves of the metals essential to the prosecution of the war. Increases as high as 200 per cent are expected in some instances.

and Missouri, will permit the recovery of substantial amounts of cadmium contained in zinc concentrates.

Chrome

Alaska—A contract has been made for delivery of 20,000 tons of high-grade ore during the summer of 1942. Cooperation has been extended to the same producer for production of 400 to 500 tons per day of milling-grade ore and arrangements made to mill this tonnage in Alaska.

California—The Grey Eagle mill in Glenn County started operations in March 1942, under arrangement with Reconstruction Finance Corporation and Metals Reserve Company, at the rate of 15,000 tons of metallurgical-grade concentrates per annum.

California-Oregon—Arrangements have been made for purchase of chrome ores from small operators in truck-load lots from the numerous small chrome deposits of northern California and southern Oregon.

crease in capacity in 1943. Still another property is expected to be in production at the rate of 60,000 tons per annum by the end of 1942. Prospecting and development of other areas will be carried forward this year as soon as weather permits. This production rate of 360,000 short tons per annum from these three Montana properties alone by the end of 1942 compares with the previous peak United States production figure of 92,400 short tons achieved in 1918.

Oregon—A mill for recovering chromite from beach gravels is well under way, under contract to deliver 30,000 tons of chemical-grade concentrates per annum to Metals Reserve Company.

Wyoming—Arrangements have been made for erection of a 400-ton mill by private interests involving production of 35,000 tons of concentrates per annum under contract with Metals Reserve Company.

Copper

At the request of the War Production Board and with the approval of the President, Metals Reserve Company has agreed to pay a premium of 5 cents per pound for "over-quota" production of domestic copper. It is expected that this will enable some mines to operate which could not operate profitably at the ceiling price of 12 cents per pound, and will permit numerous small individual operators to expand their production greatly.

Arrangements have been made for expansion of domestic copper production as follows:

Company	Location	Production Tons Per Year	Government Capital Commitment
Bagdad Copper Company	Arizona	10,200	\$2,500,000
Calumet and Hecla Cons. Copper Co.....	Michigan	1,250	.....
Gray Eagle Mining Company.....	California	6,800	.....
Miami Copper Company (DPC).....	Arizona	23,000	9,000,000
National Tunnel and Mines Company.....	Utah	5,000	.....
Phelps Dodge Corporation (DPC).....	Arizona	60,000	28,000,000
Total.....		106,250	\$39,500,000

Stockpiles and sampling facilities will be available at numerous locations in this relatively inaccessible area.

Montana—A major development and production program is being carried out by Defense Plant Corporation and Metals Reserve Company, with Anaconda Copper Mining Company in charge of construction and operations. One mill went into operation March 1, 1942, on a basis of 60,000 short tons of concentrates per annum, and plans are under way for increasing present capacity by 150 per cent before the end of 1942. Another mill is expected to be in operation before the end of this year on a basis of 150,000 tons of concentrates per annum, with the possibility of further in-

The aggregate increase in domestic copper production may well be 200,000 tons per annum.

Lead

Arrangements have been made to pay a premium of 2½ cents per pound on over-quota production of lead, for a period of 2½ years from February 1, 1942. Substantial stimulation of small mine production may be expected to result from the premium price of 9.25 cents per pound, which is in excess of the highest average price level for lead in 50 years.

Manganese

Arizona—The owners of the major portion of the large manganese reserves in Arizona are carrying out experimental

HARRY A. THORNE RETIRES AS CHINO MINES SUPERINTENDENT

AFTER a record of 36 years of continuous service, Harry A. Thorne retired April 1 as mine superintendent of Chino Mines, Nevada Consolidated Copper Corporation, Santa Rita, New Mexico, and has gone to San Diego, California, where he will make his home.



Harry A. Thorne

The retirement of "Cap" Thorne brings to an end a career which has been outstanding in southwest mining operations. Even before the original

Chino Copper Company was organized, following extensive reports and examinations by the late John M. Sully, Thorne was one of a group of mining engineers who were convinced of the existence of extensive low-grade copper deposits in the Silver City area.

When Sully's exhaustive reports were received unfavorably by eastern capitalists, it was W. H. Wiley, an uncle of Mrs. Thorne, who, after thorough examination of the Sully report, submitted a favorable recommendation to the syndicate, and thereafter Sully was told to go ahead with development work, under the general supervision of Col. D. C. Jackling.

Thorne, who was educated at the Colorado School of Mines and received his actual mining experience in Utah, Arizona, and Mexico, became an associate of Sully and of Horace Moses, now general manager of Chino operations. These three engineers subsequently made mining history in southwest New Mexico. Today, Chino ranks as one of the largest open-pit copper properties in the world, with mine at Santa Rita and mill and smelter at Hurley, New Mexico.

In 1916 Thorne was made assistant mine superintendent, then advanced to the position of mine superintendent in 1922, succeeding Horace Moses who was made general manager of the Gallup-American Coal Company that year. Thorne served continuously in this position until his retirement.

Under Thorne's supervision the low-grade porphyry ore body at Santa Rita was developed and the huge open-pit mine became a major and profitable copper-producing property. Diamond drilling operations, pioneered by Thorne, revealed the extent and richness of an almost inexhaustible ore reserve which insures continuation of mining over a period of 50 years or more. Construction of the smelter in 1939 was the most recent major improvement.

Serving under three general managers, John Sully, R. B. Tempest, and Horace Moses, he won their regard and commendation for his outstanding ability to "deliver the goods." He also won the lasting respect and admiration of Anglo and Mexican workers alike for his sympathetic un-

derstanding, and their loyalty to "Cap" never wavered.

He inaugurated diversified forms of amusement and recreation for the employes and their families, with baseball as one of the principal sports. He also was a leader in community activities, serving as a member of the Santa Rita Board of Education and as a director of the Community Church.

Although he has retired, Thorne will continue his interest in the mine and he plans to make periodical visits to the property for consultation with officials.

He is succeeded at Santa Rita by William H. Goodrich, widely known and experienced engineer, who has served under him as assistant mine superintendent.



Wm. H. Goodrich

OLD GROUP OF IDAHO CLAIMS TO BE OPENED BY TRUSTEES

A GROUP of gold claims, originally located in the early 1900's, is the property now known as the Lone Pine Sulphide mine in Elmore County one mile west of Pine, Idaho. Efforts are being made at the present time to open this ground under a trusteeship of which Thomas Potter and Aileene Potter of Pine are the trustees. Principal values are in gold and silver. The property includes the Owens group, comprising the Oh Mama, Gonyon, Rex, Idaho, Crown, Copenhagen, Hazel, Pick, Zenith, and Last Chance claims, and the Eugene claims, deeded to the Lone Pine Sulphide Mine Trust by the Potters.

The mining plan devised by Thomas Potter, who is manager, consists of running an open cut up Gold Hill Gulch from the portal of the Hazel tunnel a distance of about 200 feet, preparatory to open-pit mining. An alternate plan is to reach the ore body by crosscutting and using underground mining methods.

AGED MEXICAN MINES BUILDING TO BE RESTORED

THE aged building of the Mexican School of Mining, Mexico, D. F., a department of the National University of Mexico, is to be reconditioned and reinforced as a result of a cash gift of 100,000 pesos (\$22,500 U. S.) for the purpose. The building has been in a precarious condition for some time because of the soggy soil upon which it stands. The gift was made by General Maximino Avila Camacho, minister of communications and public works, and brother of the president of Mexico.

The school is the third oldest of its kind in the world, ranked in age only by those of Paris, France, and Moscow, Russia. It celebrated its 152nd birthday last January.

\$50,850 VOTED TO ARIZONA MINERAL RESOURCES BOARD

AN appropriation of \$50,850 for the Arizona Department of Mineral Resources was made during a recent special session of the Arizona Legislature. The department had been without state funds since June 30, 1941, because the appropriation made for its work at the legislature's regular session was vetoed by the governor after the lawmakers had adjourned.

The recent law, enacted to provide state funds for department activities, was approved by the house of representatives by a vote of 44 to 6 and it passed the senate 17 to 1. Legislative leaders claimed they had sufficient strength (a three-quarters majority) to override a veto by the governor should he take such action again. However, he allowed it to become a law without his signature.

The department has outlined a program for stimulation of war mineral production in Arizona. Mining leaders in the state and the Mineral Resources Board met in Phoenix on April 25, 26, and 27 to work out plans and map future activities.

DECISION ON MILL TAILINGS RENDERED IN CALIFORNIA CASE

A DECISION handed down recently by the Ninth Circuit Court of Appeals, in the case of the Internal Revenue Department versus the Kennedy Mining and Milling Company, Jackson, California, establishes the right of a mining firm to charge off percentage depletion on metal produced by reworking mill tailings, even though in years prior to 1934 the company had received unit depletion on the ore mined and milled.

The decision states, in part: "The tailings from which the taxpayer derived part of its gross income and all of its net income during 1935 and 1936 were ores just as were the newly mined ores. Income derived from the ores called tailings, as well as that derived from the newly mined ores, was income from the mine. The mining of ores and the receipt of income therefrom are seldom, if ever, simultaneous. The two events are not infrequently years apart."

TRADE AGREEMENTS MAY PUT MANY MINERALS ON FREE LIST

THE State Department has made announcement of its intention to negotiate trade agreements with Mexico and Bolivia in which the reduction of the duties on a number of minerals is to be given consideration. Hearings will be held by the department on May 18 while the closing date for filing briefs and applications for appearance at the hearings is May 4.

Zinc oxides, fluorspar, graphite, molybdenum ores and concentrates, antimony, quicksilver, lead and its ores and related materials, zinc and its ores and related materials, sulphuric acid, antimony ore, and arsenic will be subject to negotiation and placing on the free list in the negotiations with Mexico. The Bolivian discussions will deal with tungsten ores and concentrates, lead ores, zinc ores, antimony ores, and tin ores.

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GOLDEN FEATHER CONTINUES STEADY DREDGING OPERATIONS

THE Golden Feather Dredging Company, which has been operating its dredge on bench land along the Feather River across from Oroville, California, during the winter months, will continue there until about July 15, when dredging operations will be shifted to the channel of the river, according to H. Kumle, general superintendent.

The bench-land area is comprised of 17 acres of gold-bearing ground, of which three acres remain to be worked. When dredging operations are resumed in the river, the boat will complete a small amount of work remaining on the north side of the stream before beginning operations on the Oroville side of the river.

The dragline dredge, which is fed by a 3½-yard bucket, is handling from 5,000 to 6,000 yards of gravel daily. The mining operation is within the city limits of Oroville and the city receives a 10 per cent royalty on all gold recovered from property owned by the municipality.

The company is said to have an adequate supply of equipment on hand and it is not anticipated that priorities will have any effect on the operations. There is said to be sufficient acreage available for a long period of dredging.

As a result of Golden Feather dredging, Oroville will have a park on the levee along the city side of the river. The dredge will pile gravel and rock along the levee and when the desired width and depth is obtained it is the plan of the city engineering department to cover the area with soil and plant trees and shrubs.

E. A. Wiltsee, Room 1003, Wells Fargo Bank Building, 14 Montgomery Street, San Francisco, California, is general manager.

NEWMONT REPORTS ON 1941 MINING ACTIVITIES

NEWMONT MINING CORPORATION, Charles F. Ayer, president, 14 Wall Street, New York, reports for the year 1941 a net profit of \$1,784,649. Cash dividends aggregating \$2 per share were paid during the year, totaling \$2,126,580.

The company continued its efforts for the acquisition of new mining properties and the net loss on such ventures examined and abandoned during the year was \$13,433. A loss of \$865,946 was taken on the liquidation of the Gray Rock Mining Company, Jarbidge, Nevada, which was dissolved late in the year. The development work in the 1,000-foot level of the Gray Rock mine was not sufficiently encouraging to warrant further exploration of the mine against the handicap of the continuous and heavy flow of warm water. Further prospecting, therefore, was abandoned early in September. During the conduct of the undertaking the Gray Rock company pumped to the surface more than 888,000,000 gallons of water.

Empire Star Mines Company, Ltd., produced from its Grass Valley, California, properties 87,662 ounces of gold in 1941. New development work resulted in a small increased tonnage of ore in reserve in spite of extraction. The Murchie mine was abandoned during the year and, owing to

tailings disposal difficulties and shortage of miners in the district, its Zeibright mine was allowed to fill with water to prevent decay of timber and oxidation of broken ore. The company's Browns Valley mill is being operated successfully on ore from its Danebroge mine. Empire Star paid dividends aggregating \$5.50 a share in 1941 as compared with \$8 in 1940.

Development work in the Northern Ontario mine of Northern Empire Mines Company, Ltd., 53.7 per cent owned by Empire Star, failed to disclose any new ore and the mine was abandoned in August.

Tombill Gold Mines, Ltd., 42.8 per cent owned by Newmont, operated throughout the year at a net profit of \$148,360 (Canadian) after all taxes, compared with \$278,658 (Canadian) in 1940. Berens River Mines, Ltd., in which Newmont owns a 74.9 per cent interest, produced \$1,572,192 (Canadian) in gold, silver, and lead, showing a net profit of \$434,272 (Canadian) in 1941. Island Mountain Mines Company, Ltd., 58.7 per cent Newmont owned, had a gross production of \$954,248 (Canadian), and distributed dividends aggregating \$189,129 (Canadian).

O'Okiep Copper Company, Ltd., 66.3 per cent owned by Newmont, operated its copper property in Namaqualand, South Africa, at capacity throughout the year and steps are being taken to somewhat increase capacity. Aguilar Corporation continued to operate its lead-zinc-silver property in Argentina at capacity throughout the year and purchased 30 per cent

of its outstanding 7 per cent preferred stock during 1941 at the call price of 115 plus accrued dividends.

In the Leadville, Colorado, district the Resurrection Mining Company continued development with favorable results. A one-third interest in Resurrection is held by Newmont. The property has been equipped with a 250-ton flotation plant which went into operation in January 1942. Largely to provide convenient haulage to this mill the historic Yak Tunnel was acquired. For these facilities Newmont contributed an additional \$180,000 to what is believed to be the final capital expansion of this company.

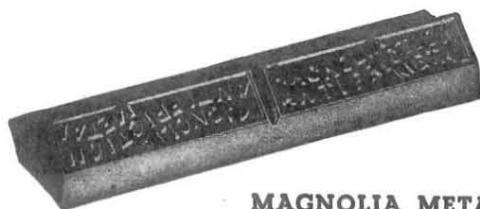
Getchell Mine, Inc., in Nevada, in which Newmont continues to hold an 18.6 per cent interest, milled 355,600 tons with a recovery of \$5.66 per ton. Dividends paid during the year amounted to 30 cents per share and totaled \$450,000.

At the request of an agency of the United States government, the Gray Eagle Copper Company, 98.9 per cent owned by Newmont, executed a contract on December 24, 1941, for the production of approximately 6,800 tons of copper per annum for a period of three years, beginning about January 1943, from its mine near Happy Camp, Siskiyou County, California. The production plan contemplates exhaustion of all ore which, under existing conditions, appears to be of commercial grade. Commitment has been made by Newmont to provide the necessary capital of about \$1,000,000 for the undertaking.



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MAGNOLIA BEARING METALS

Nuggets from the Western States

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



A 30-ton milling plant has been purchased by the Falls Creek Mining and Development Company for its States property in the Falls Creek district near Moose Pass, Alaska, and will be installed as soon as weather permits. A new caterpillar tractor and spare parts for the air compressor also have been taken to the mine. Wyman Anderson is in charge of operations at Moose Pass, assisted by Arthur Liening. The property is a gold lode where about six men are employed in normal operations.

Production of chrome is scheduled to be started next August by the Red Mountain Chromite, Inc., of Seldovia, Alaska. At present development and construction work are being carried on by the company and the diamond drilling is conducted by the U. S. Bureau of Mines. Holdings consist of the Red Mountain and Claim Point mines. K. A. Hamblen, 302 Lumbermans Building, Portland, Oregon, is manager of operations and is associated with John W. Blodgett, Jr., and others in the company. Frederick L. Knouse is resident manager at Seldovia and Perry N. Taylor is superintendent.

Paul Drazenovich, Jim Zukoff, and Nick Kupoff, all of Fairbanks, Alaska, are reported to have secured a lay from Mike Stepovich of Fairbanks on the Stepovich property on Fish Creek near Fairbanks. General preparations for production are under way, with mining to start in the near future.

The American Tin Fields, Inc., 419 Vance Building, Seattle, Washington, produced over 60 tons of placer tin last year from its holdings near Tin City, Alaska, where an average of 25 men is employed. The production was sent to Pittsburgh, Pennsylvania, for treatment.



The War Metals Syndicate of Phoenix, Arizona, headed by Robert W. Dickey, 311 West Jefferson Street, Phoenix, and Jack Graham, has been organized to produce copper, molybdenum, and other necessary war metals. Operations are under way on a series of closely spaced parallel veins and stockworks carrying high values in molybdenite. The property is located in Caliente Canyon, Santa Cruz County, seven miles from Amado, Arizona. Preparations are being completed for installa-

tion of an air compressor plant and necessary equipment for driving a crosscut through the series of parallel molybdenum ore bodies. C. W. Gabrielson, Box 279, Bisbee, Arizona, is in charge at the mine.

The Phelps Dodge Corporation has signed contracts with the Defense Plant Corporation for a \$28,000,000 expansion program at Morenci, Arizona, and El Paso, Texas, according to an announcement by James F. McClelland, vice-president of Phelps Dodge. The program includes an 80 per cent expansion of the reduction works and erection of dams to provide water for the enlarged plant at Morenci, and enlargement of the copper refinery at El Paso.

At a special meeting of stockholders of the Van Dyke Copper Company, held at the company offices in Miami, Arizona, resolutions were passed authorizing the officers to proceed with plans for reopening and operating the mine. Van Dyke workings at present are under water. Cleve W. Van Dyke, Miami, is president of the company.

A contract has been let by the Bagdad Copper Corporation, Hillside, Arizona, for construction of a 10-inch pipe line to supply water for the company's new 2,500-ton mill. Sinking on the new three-compartment shaft is advancing at the rate of approximately five feet daily and it is now down more than 120 feet. It is to be extended to a depth of 480 feet. Power from the Colorado River is to be supplied to Bagdad as a part of its \$2,500,000 expansion program, and surveys for the transmission line are being run by the U. S. Bureau of Reclamation. It will be a branch off the present line from Parker to Phoenix, and will extend approximately 65 miles. Estimated cost of the line is \$325,000. Excavation is getting under way also for the new 2,500-ton mill, designed to treat low-grade copper ore. J. W. Still, Hillside, is general manager at the property.

The Hackberry mine north of Mayer, Arizona, is reported to have been taken over by the Liberty Hill Gold Mines, Ltd., R. P. M. Davis, president, 2356 Hollyridge Drive, Hollywood, California. It is understood that Liberty Hill plans to use the Golden Turkey mill at Cordes, Arizona, to treat the Hackberry ore, which carries values in copper, lead, and zinc. Liberty Hill at present operates the Alvarado mine at Congress, Arizona, and the C. O. D.

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.

mine north of Kingman, Arizona. The Hackberry mine is controlled by Fred Gibbs of Prescott.

Fred Sherrer has acquired a lease on the Commercial mine at Skull Valley, Arizona, owned by the Phelps Dodge Corporation. He plans to ship 100 tons of copper ore daily to the Phelps Dodge smelter at Clarkdale, Arizona.

Engineers for the American Smelting and Refining Company are reported to be examining the Bullard mine in Yavapai County eight miles north of Aguila, Arizona. Principal values are in copper with some gold.

E. P. Hilton, Box 1308, Tucson, Arizona, is shipping 110 tons of zinc ore monthly from his State of Maine and Lone Mountain groups in the Empire mining district 16 miles southeast of Vail, Arizona. He also is developing a considerable amount of lead ore and lead shipments will begin shortly. A crew of seven men is employed. Hilton plans to extract several thousand tons of low-grade lead-silver milling ore.

A 50-ton mill, equipped with crusher, rolls, and tables, is being installed at the old Montezuma mine of the Arizona Lead Company, 3 1/2 miles west of Morristown, Arizona, in the Vulture mining district. The plant is arranged in such a way that it can be increased easily to a capacity of 100 tons daily. A pump is being installed on the Hassayampa River and a pipe line is being run to a storage tank on the property. For the past six months, hand-picked ore has been shipped from the dump but this work has been discontinued pending completion of the mill. The new plant is expected to be ready for operation during April. The company has more than 100,000 tons of ore on the dump and there is said to be a considerable amount of ore with good values available in old workings. George L. Dillard, Wickenburg, is general superintendent at the mine.



The Oriental mine near Alleghany, California, is being closed down for the duration of the war, due to difficulty in obtaining supplies. The mine has been operated since 1939 by the Dickey Exploration Company, Mrs. Florence V. V. Dickey, president, Twin Peaks Ranch, Ojai, California, under sublease from F. F. Cassidy of Grass Valley, California.

Work is being resumed at the Spanish mine north of Washington, California, following the winter shutdown. The mine is operated under lease by the Industrial Minerals and Chemical Company, Sixth and Gilman Streets, Berkeley, California, and more than 20,000 tons of barite have been shipped from the property during the past four years. It is estimated that the company will ship over 30,000 tons this year to Berkeley and Modesto for defense purposes. Approximately 15 men are employed at the mine under the direction of

D. K. Ribble, superintendent. The property is owned by the Bradley Mining Company.

Floyd Dunlap, Frank Haab, and Charles Smith, all of Bakersfield, have leased the I Guess group of tungsten claims near Randsburg, California, and are engaged in prospecting the ground. A compressor and hoist have been installed, along with other equipment brought from Pine Tree Canyon where these men formerly operated a gold property. The I Guess claims are opened by several shafts, one of which is 100 feet deep. Frank Feldman is the owner of the property.

A 425-foot drift is to be run at the property of the Mono Molybdenum Company, William Williams, superintendent, Mariposa, California. From that point it is planned to crosscut to open up five veins. Alexander S. Wyner, 180 Los Angeles Boulevard, San Anselmo, California, is general manager of the company. Arthur Green, 23 Union Street, Boston, Massachusetts, heads the organization.

Commercial deposits are said to be in sight at the Little Castle Creek chrome mine near Dunsmuir, California, which is being operated by James Davis, Yreka, California, and Leonard J. Buck of New York City. The mine, owned by Mrs. Margaret Graham, was explored extensively by the U. S. Bureau of Mines last fall. Equipment is being installed to permit the handling of 50 to 100 tons of ore daily.

High-grade cinnabar is reported showing on the 160-foot level of the Altoona mine 24 miles west of Castella, California, owned

and operated by C. W. Erickson. Work is proceeding in unexplored ground. The mine is reported to have produced a substantial amount of quicksilver in earlier operations.

Ground originally mined in 1908 by the old Calaveras Dredge is being reworked by the Wolhall Dredging Company, Albert Hall, superintendent, on the outskirts of Jenny Lind, California. The dredge is operating below the bridge between Milton and Jenny Lind and will work approximately 1½ miles of the old stream bed. Edward Wolin, former partner, has sold his interest in the firm to Hall. The General Dredging Company is said to own a 20 per cent interest in the project.

J. K. Latta, Downieville, California, is preparing to work the bed of Indian Creek 16 miles west of Downieville under a lease from Mrs. Mabelle Dyer and Howard Smith and associates of Los Angeles, owners of the Indian Hill mine. Indian Creek has for many years carried away the debris of the Indian Hill hydraulic mine and it is believed that the present creek bed has been enriched from the hydraulic tailings. Latta will use a bulldozer to gather the gravel.

Work is nearing completion on construction of the 23-mile electric power line from Seiad Valley to the property of the Gray Eagle Copper Company seven miles north of Happy Camp, California. Mining operations are being expanded and it is understood that early construction of a 600-ton concentrating plant is contem-

plated. The property, in which the Newmont Mining Corporation holds a controlling interest, is developed by extensive adits and underground workings and is said to contain 1,500,000 tons of ore averaging 6 per cent copper. The gossan capping carries gold. Robert J. Hendricks, manager for the Empire Star Mines Company, another Newmont holding, is directing work at Happy Camp.

Mining interests are attempting to secure government financial assistance in reopening the old Cajalco tin mine about seven miles from Corona, California, in Temescal Canyon. Certain necessary tests are being made at the property and preliminary discussions have been held regarding the supply of electrical power which would be needed. The operation is expected to be tremendously costly because of the low-grade ore involved. Following a recent exhaustive study of the Temescal district by Geological Survey and Bureau of Mines engineers, it was reported that there are probably several hundred outcropping veins, mostly one to two feet wide, which contain from 0.03 to 0.15 per cent tin (0.6 to three pounds per ton). The only shoot which has justified mining, the Cajalco, from 1890-92 produced 7,000 tons of crude ore which yielded about 150 tons of tin. When the mine was reopened again in 1927-29, at a cost of several hundred thousand dollars, no more ore was found and the plant was dismantled.

Mill equipment at the Eagle Shawmut gold mine, Chinese Camp, California, is being dismantled preparatory to shipment to

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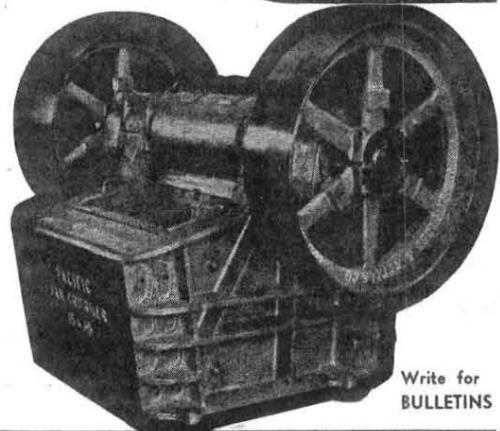
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the Southwestern Graphite Company at Burnet, Texas, where Miller and Clemson, owners of the Eagle Shawmut, are preparing for the production of graphite in cooperation with the Defense Plant Corporation. The equipment being sent to Texas is not needed at the present time at the Eagle Shawmut and will not affect the continued operation of the property. A crew of 60 men is employed and production is averaging more than 500 tons daily. The Eagle Shawmut produces an iron pyrite concentrate which is shipped to the Selby smelter, where it is treated in conjunction with lead ore. D. C. Peacock, Chinese Camp, is manager at the property. Horace G. Miller is addressed at 4800 Santa Fe Avenue, and George W. Clemson at 311 South Spring Street, Los Angeles.

The 100-ton chrome concentrating plant under construction at Goldtree Siding, San Luis Obispo, California, for **Castro Chrome Associates**, is expected to be completed and ready for operation about May 1. The company, which is operating the Castro Extension mine on the range behind Camp San Luis Obispo, has been hauling ore from the mine for the past month. Work at the property is directed by L. E. Putnam, superintendent.

Due to a shortage of skilled miners, operations were discontinued March 28, 1942, at the **Golden Center** mine, Grass Valley, California, for the duration of the war. The mine, which had sufficient material on hand to continue operation for a year, normally employs 100 men, but in recent weeks men have been leaving for defense work and the company could not obtain sufficient qualified miners to take their places. Pumps below the 1,650 level at the Scotia shaft will be pulled, but the shaft above that level will be kept dewatered. The crew at the Scotia has been reduced to 15 for the dewatering and for pump and rail pulling. William H. Carey is mine foreman. The Golden Center is owned by Cooley Butler, 745 Rowan Building, Los Angeles, California.

Development and production will be resumed at the **Wilbur** mine near Darwin, California, as soon as weather and other conditions permit. Development may include a 250-foot working tunnel to facilitate access to more than 200 feet of ore backs. Two oreshoots have been exposed on the 30-foot level. The mine is equipped with a headframe, bunkers, and trackage. In the fall of 1941 there were produced and milled 220 tons of ore which averaged approximately 1.16 per cent WO_3 . Paul Wilbur, Box 72, Darwin, is general manager of the property.

Five of the 15 stamps of the **King Solomon** mill, Randsburg, California, are being used in an experiment to determine the feasibility of using stamps for scheelite ore. In the event that the test is satisfactory, the 10 stamps held in reserve at the King Solomon may be recommissioned. George Kirkbride of the M. and N. Mining Company holds a sublease on the mill for the duration of the war. He obtained the lease from the King Solomon Mines Lease, composed of Hess, Nossner, Christensen, and Schultz.

Lawrence Smith is building a small mill at the Sierra Queen mine to treat 80 to 100 tons of ore mined at the **Midnight** property, Nevada City, California. The mill will have a capacity of 10 tons per 24 hours but probably will be operated only one shift daily. The Midnight was shut down recently for the duration of the war.

The **Quail Hill** mine four miles southwest of Copperopolis, California, is to resume operation soon. The mine, first opened in 1860, was purchased recently at a tax sale by G. Ivan Smith, Bell, California, for \$5,100. The mine was last worked in 1915 by the Eagle Gold and Copper Company and will be operated by the new owner primarily for copper and zinc. Byron Rowe, formerly superintendent of the Mountain King mine near Copperopolis, has been engaged as superintendent for the Quail Hill. It is anticipated that 40 or 50 men will be employed soon. Dewatering of the 170-foot shaft will begin immediately.

Bond Brothers and Company, Inc., 310 California Street, San Francisco, California, has leased mining rights on the French Ranch in the Lone Tree district of San Benito County. The property, to be known as San Benito Mines, is said to carry values in antimony. Operations were started during April. The property was operated more than 60 years ago and old workings still remain. It is understood that several of the old tunnels are still open, one extending 875 feet into the hillside. The project is being examined by L. G. Blakemore, company engineer, and active work will be directed by Rupert Bond.

Manganese, Inc., Laurance Huntington, president, and general manager, 1202 Haas Building, Los Angeles, California, is engaged in constructing a new 300-ton milling and sintering plant in Windgate Wash, Death Valley, to treat manganese and barium. The plant will be equipped for flotation and sulphur dioxide methods of treatment. At present work at the mine is confined to development. The operating personnel includes: L. G. Hayford, assistant general manager; Robert J. Cobden, general superintendent; Leon Mower, mine and mill superintendent; Charles S. Howard, chief mechanical and construction engineer; John J. Jeffrey, master mechanic; Dean Garver, chief electrician; George F. Ransom, chief chemist; and Stephen P. DeRonde, secretary and chief clerk. Samuel H. Dolbear, 17 Battery Place, New York City, is consulting engineer for the company. When the plant is completed, the company will have an operating crew of 67 men in mine and mill. An additional 24 men will handle trucking to the railroad.

The **Rustless Mining Corporation** is shipping approximately 50 tons of chrome concentrates daily from its **Gray Eagle** chrome property in Glenn County near Willows, California. C. E. Osborn, Star Route, Orland, California, is general superintendent at the Gray Eagle. The property is equipped with a 200-ton gravity concentration plant.

The American Smelting and Refining Company is reported to be planning to open up the Liberty mine, a copper-gold property located on the north side of the Siskiyou Mountains in California near the California-Oregon state line. The property is said to have 200,000 tons of ore blocked out, running as high as 6 per cent copper and \$2 in gold. J. D. MacKenzie, 405 Montgomery Street, San Francisco, is general manager of the California department of A. S. and R.

Property of the Summit Lime Company four miles south of Tehachapi, Kern County, California, is to be developed by the B. C. M. Mines under the direction of R. D. Carse, Box 214, Tehachapi, California. The property totals 5,700 acres and a portion of it will be sub-leased to operators. The entire project is being examined by M. E. Pratt, 1030 Euclid Avenue, Tucson, Arizona, for Pittsburgh capital. Two shipments of high-grade tungsten have been made from the property, one averaging 19 per cent and the other 45 per cent.

The Diesel generating plant of the Universal Placer Mining Corporation at Atolia, California, has been sold to the Industrial Equipment Company of Los Angeles, and the D7 Caterpillar tractor was sold to M. F. McCaffery of Los Angeles. The recovery units of the Universal company have been stored with A. A. Turner for the duration of the war. W. C. Colhoun, Box 1110, Santa Fe, New Mexico, is manager and treasurer of the company. Universal formerly operated the Atolia Rand placers at Atolia.

Milling operations were resumed April 1 at the property of the Kennedy Mining and Milling Company, Jackson, California, after having been temporarily suspended while necessary repair work was completed in the main shaft. A crew of 75 men is employed. Mark Eudey, Martell, California, is superintendent at the property.



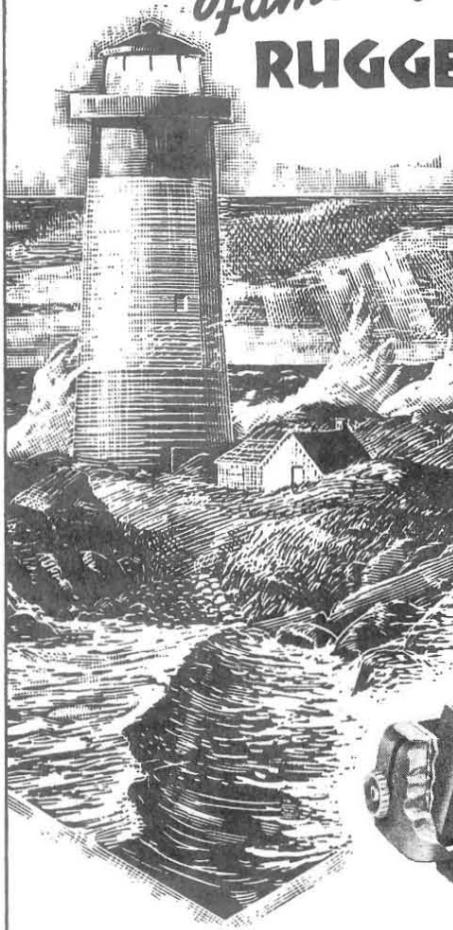
A New York group is stated to have acquired a 10-year lease on the properties of the Silver Plume Mines, Inc., in Clear Creek County near Silver Plume, Colorado. John A. Smith of Silver Plume is president and general manager of the Silver Plume concern and has been retained as general superintendent by the new operators. The ground involved includes the Terrible, Mendota, Seven Thirty, and Dives-Pelican groups of claims, with values in gold, silver, lead, and zinc. The same interests also leased for 10 years the 100-ton flotation mill of the Commonwealth Tunnel Transportation Company and are installing additional equipment to increase its capacity. A zinc and a lead-silver concentrate will be produced. The property, with its 100,000 feet of underground workings, is said to contain much zinc ore left by former operators when it was not profitable to mine. Three shifts of men are

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line from the base station for that line. In running stations along a profile line, one electrode was kept fixed on the base station and the second electrode was moved from station to station. The potential differences measured at successive stations were, therefore, independent of each other and were referred directly to the base station for that particular profile line.

A Leads-Northrop potentiometer with non-polarizable electrodes was used. These electrodes consist of a super-saturated copper sulphate solution in porous pots in which were immersed copper rods. Differences in potential between the electrodes were checked at the beginning and end of each profile line. This drift was kept to less than two millivolts so that the accuracy of the observations was extremely high. In taking a reading the pots were buried to a uniform depth in moistened earth.

A plane table survey was carried on simultaneously with the spontaneous polarization measurements. A rod reading was taken at each spontaneous polarization station while the potential was being recorded, and the location plotted on the plane table sheet. The equipment used is shown in the accompanying photograph.

An Askania vertical magnetometer with a sensitivity of 25 gammas per scale division was used for the magnetic survey. Stations were read at the points previously occupied in the spontaneous polarization survey. An arbitrary value of zero was assumed for the base station located at the northeast corner of the Old Dougherty claim.

FIGURES 2 and 3 illustrate the vein systems on the first and second levels respectively and the positions of the stronger spontaneous polarization and magnetic anomalies. Of importance is the eastern spontaneous polarization low which lies directly over the intersection of two veins on the first level where rich concentrations were found. The strong spontaneous polarization low to the west (see Fig. 3) is displaced to the south of the N. 87° E. vein and probably represents a junction with the vein striking to the northwest. In general, the trend of the spontaneous polarization minimum is along the strike of the veins, where the test pits are on the outcrops of the veins. The small low in the extreme northwest corner of the map is an exception, no surface indications being found. A slight break in the low trend may be partially due to the effect of Excelsior Gulch; otherwise the rugged topography does not seem to affect the survey.

A comparison of the vertical intensity magnetic map with the local geology indicates that the porphyry dike crossing the claims appears as a high trend along the southern edge of the surveyed area. The magnetic low on the eastern end of the Old Dougherty seems to bear a rather indistinct relation to the mineralization as indicated by the test pits. The magnetic high to the north may represent an invasion of the country rock by the porphyry, this irregularity in the shape of the dike giving rise to extensive fracturing and valuable mineralization. It must



J. E. Hawkins using the vertical magnetometer in the Old Dougherty survey.

be remembered, however, that the interpretation of magnetic work in regions of intensive metamorphism is rendered difficult by the wide variation of susceptibilities within a small area. A more extensive magnetic survey would allow more intelligent interpretation of the magnetic survey since it would then be possible to evaluate the regional effect.

In the past, most spontaneous polarization surveys have been conducted where the galvanic activity is relatively large and anomalies of 100 millivolts or greater are encountered. This survey indicates that with reasonable care in the taking of observations and by obtaining good contact between electrodes and the ground, anomalies of 20 to 30 millivolts are indicated.

WORK CONTINUES ON SOUTHERN CALIFORNIA IRON PROJECT

A CREW of 50 men is employed and four diamond drills are running two shifts daily at the Iron Chief ore deposits in the Eagle Mountains of Riverside County, California. The U. S. Bureau of Mines is carrying on an extensive exploration of mineral claims in the district where more than 100,000,000 tons of iron ore are reported to be available.

The Riverside Iron and Steel Corporation, Harlan H. Bradt, president, 550 Woodland Road, Pasadena, California, has contracted to purchase the property, which consists of 140 patented mining claims, from the Southern Pacific Land Company, a wholly owned subsidiary of the railroad firm.

The Kaiser Iron and Steel Company, headed by Henry J. Kaiser, Latham Square Building, Oakland, California, is negotiating for delivery of the iron ore. Kaiser is reported to have made application to the San Bernardino County Board of Supervisors for a permit to establish a \$50,000,000 steel manufacturing project, probably in the Fontana, California, area. The plant would cost an estimated \$40,000,000 and another \$10,000,000 would be required for development of raw materials.

METALS RESERVE COMPANY GUARANTEES TUNGSTEN PRICE

IN A MOVE to stimulate production of tungsten by small domestic producers, Metals Reserve Company has announced that it will guarantee a price of \$24 per short ton unit of tungsten trioxide (WO₃) f.o.b. New York to those who will undertake to produce at maximum capacity until December 31, 1943. This 20-month price guarantee was announced by Charles B. Henderson, president of Metals Reserve Company.

The plan is available to "eligible" and "new" producers, Henderson stated, a "new" producer being defined as one with a domestic output in 1941 of less than 10 tons of 60 per cent WO₃, having a recoverable content of less than 600 units of WO₃. An "eligible" producer is one with a 1941 output of from 10 to 100 tons of 60 per cent WO₃, or who produced lower grade material having a recoverable content of not less than 600 nor more than 6,000 units of WO₃.

In order to obtain the benefits of the plan, a producer would have to enter into an agreement with Metals Reserve Company to produce tungsten ores at maximum capacity until the end of 1943. With respect to "new" producers, the stipulated price will remain in effect until December 31, 1943, but Metals Reserve Company reserves the right to terminate this program as far as "eligible" producers are concerned at any time by giving 30-day notice and paying indemnification.

Aside from the price guarantee, the plan grants no new concessions to the small producer. The \$24-per-unit price which Metals Reserve Company offers, f.o.b. New York, is identical with the price that has been in effect along the Atlantic seaboard for some time. It is available to tungsten concentrates meeting the following specifications:

	Scheelite Concentrates Per Cent	Wolframite, Hubnerite, & Ferberite Concentrates Per Cent
Tungsten trioxide (WO ₃) (Min.)	60.00	65.00
Copper (Max.)	0.05	0.03
Phosphorus (Max.)	0.05	0.03
Arsenic (Max.)	0.10	0.25
Bismuth (Max.)	0.50	0.50
Molybdenum (Max.)	0.40	0.40
Tin (Max.)	0.10	1.50
Sulphur (Max.)	0.50	0.50
Antimony (Max.)	0.10	0.50
Manganese (Max.)	1.00	.....
Lead (Max.)	0.10	0.10

Tungsten concentrates containing the stipulated minimum WO₃ content, but otherwise failing to meet the above specifications, will be penalized by deductions from the base price for any impurities contained in excess of those allowed. The penalties charged are indicated in the following table, the deduction from the base price being 10 cents per short ton unit for each designated percentage of impurity.

Impurity	Designated Percentage
Copper	0.01
Phosphorus	0.01
Arsenic	0.10
Bismuth	0.50
Molybdenum	0.10
Tin	0.10
Sulphur	0.10
Antimony	0.10
Manganese*	1.00
Lead	0.10

*Scheelite only.

Mill Heads from the Western States

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



Preparations have been completed for production to be started this season by the **Pedro Mining Company**, which holds the discovery claim in the Fairbanks district of Alaska. The property has not been extensively developed. Water is brought from Twin Creek. Deisel power is used and mining will be done by stripping and hydraulicking. Henry Spall and George Sampson, both of Fairbanks and members of the company, are in charge of operations. Harry Chenoff is foreman.

The **Chichagof Mining Company**, which normally operates its gold lode mine and mill with a crew of 15 men, is closed down and expects to remain closed for the present at least. Being a gold producer makes it difficult for the company to secure adequate supplies and the labor question is also difficult. J. E. Littlepage is vice-president and general manager of the company.

According to reports, Norman C. Stines, 1810 Russ Building, San Francisco, California, is planning to build crew buildings, a radio station, and an airport at his mining property on Bird Creek, tributary of Peters Creek in the Cache Creek section of Alaska. Stines, a mining engineer, has done extensive mining work in Alaska, Nevada, and California. Lately he has been interested in a project near Winnemucca, Nevada.

The **Hi Yu Mining Company** is reported to be shutting down its Hi Yu mine near Fairbanks, Alaska, and its Mastadon mine in the Circle district northeast of Fairbanks for the duration of the war, because of labor shortage. Both properties are gold producers. Effort will be made by the company to continue operations at its Red Top mine near Mt. McKinley Park southwest of Fairbanks. D. R. Gustafson is president and general manager and Don Fowler is consulting and chief mining engineer, both of Fairbanks. John Erickson, Fairbanks, is general superintendent.



The **Southwestern Strategic Metals Company**, Box 3855, Phoenix, Arizona, a partnership composed of Anthony Corica, Irving Annis, and Martin David, has acquired a lease on the Hardy mine in the Ash Peak mining district 11 miles west of Duncan, Arizona, and preparations are being made for active operations. The Duncan address for the company is Box 262.

J. C. Kater of Quijotoa, Arizona, and associates are opening up a copper property in the Quijotoa mining district. They plan to let a contract for mining and hauling the ore on a large tonnage basis.

Pinto Tungsten Mines, Floyd W. Davis, president, El Dorado, Kansas, has been organized to develop the Red Bird and Friend in Need groups of tungsten claims near Globe, Arizona. Davis and associates acquired the 14 claims recently from Victor Wagner of Miami, Arizona, who had been developing the property for the past four years.

A net income of \$266,594 is reported by the **Magma Copper Company**, Superior, Arizona, for the three months ended March 31, 1942. A total of 10,218,346 pounds of copper was produced at an average net production cost of 8.76 cents per pound. The average production cost is taken after deducting for gold, silver, and zinc concentrate values and includes all operating costs, state taxes, federal social security taxes, depreciation, and administrative expenses, but does not include any allowance for mine depletion, capital stock tax, or federal income and excess profits taxes.

The **Cleopatra** group of claims near Alamo Crossing on the Williams River north of Aguila, Arizona, has been leased for three years to Strong and Harris of Vanadium, New Mexico. The lessees have built five miles of road to connect with the county highway, have installed a gas power shovel, and are using a fleet of trucks to haul ore to the railroad for shipment to the Clarkdale smelter. David Strong is in charge of operations at the mine and it is the plan of the lessees to produce and ship a carload of ore daily. The property carries a blanket vein, practically all surface ore, and there are said to be approximately 700,000 tons available. The Cleopatra is controlled by W. Stewart Thompson, majority owner, Kingman, Arizona.

Douglas C. Corner, Box 157, Mayer, Arizona, has purchased the **Crown King**, **Wildflower**, and **Tiger** properties formerly held by R. C. Jones of Cushing, Oklahoma. Also included in the purchase are the 75-ton flotation plant and necessary mining equipment. It is planned to operate the mill on ore from the Tiger at first, and also as a custom plant. Ore from the Crown King district will be treated, including that from the Gladiator, Del Pasco, Philadelphia, and other properties. Corner also operates the Belcher and Wizard mines

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.

in the Big Bug district eight miles north of Mayer. He designed and built most of the large section tunnel power loading equipment which helped make so many progress records on recent aqueduct and hydroelectric tunnel jobs.

The **Reynolds Falls** asbestos mines 55 miles northwest of Globe, Arizona, in the Fluorine mining district of the Sierra Ancha Mountains, are being developed under the direction of Arthur Enders, superintendent, Box 362, Globe. The property, comprising 25 claims, is owned by J. E. B. Wells, 625 National Bank of Tulsa Building, Tulsa, Oklahoma, and W. H. Hazlett, Box 226, Independence, Kansas, who are planning an expansion program. Application has been made for an RFC development loan. Six men are employed at present and approximately five tons of ore are shipped monthly to the Kyle mill at Globe.

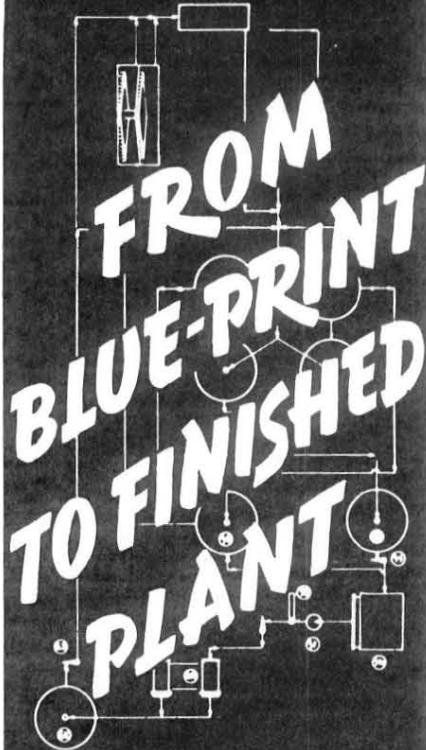


The **Keystone** mine at Amador City, California, has been returned to the **Keystone Mining Company**, owner, by the **Keystone Mines Syndicate**, lessee. The mine has been closed down, throwing approximately 100 men out of work. According to Ralph McGee, attorney, a \$10,000 attachment for supplies has been filed against the syndicate by James Chichizola of Jackson. In addition, it is understood that attachments totaling \$3,000 have been filed by the Jackson Lumber Yard and the Oneta Brothers Garage of Sutter Creek.

Louis Kientz and associates of Auberry, Fresno County, California, have opened a tungsten property midway between Auberry and Tollhouse. It is planned to install a mill and fully develop the property.

Ledges of gold quartz, varying in width from five to 50 feet, are reported exposed in old workings of the **Mountain King** mine near Hodson, via Copperopolis, California. The property was reopened recently by Lester L. Robinson, 315 West Fifth Street, Los Angeles, and associates, who organized **El Gabilan Corporation** to work the mine. Previously unexplored ground is being developed and it is planned to place the property on a steady, productive basis unless priority restrictions prevent purchase of essential equipment and supplies. Maurice Calzasia, Angels Camp, California, is general superintendent at the mine.

Tungstar Corporation, operating at Bishop, California, is milling approximately 150 tons of ore daily. Work also is progressing on the new development tunnel being driven to contact the ore body 350 feet below the main workings. Operating personnel at the mine includes W. B. Phelps, general superintendent; W. A. Lindesty, mill superintendent; Ernest Kinney, chief chemist; and Malcolm Harmon, purchasing agent, all of Bishop. P. N. Stev-



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ens, 6233 Hollywood Boulevard, Hollywood, California, is general manager.

Two shifts, with a total of 35 men, are working at the Relief Hill hydraulic mine near Bloomfield, California, according to C. E. Clark, superintendent. They are operating two seven-inch monitors.

Construction of the new 350-ton reduction plant of Madre de Oro Gold Mines, Inc., El Dorado, California, is nearing completion and it will be placed on a production basis soon. The mill, installed at the historic Church gold property four miles west of El Dorado, includes a 20-stamp mill, two ball mills, two classifiers, two jigs, 14 flotation cells, thickener, filter, concentrating table, and amalgamation barrel. Three strongly defined ledges are reported exposed in the main workings with a total width of 80 feet. The shaft is 1,200 feet deep and ore has been developed to a further depth of 130 feet by means of a winze. Forrest Riley, Corcoran, California, is president of the Madre de Oro company.

The Surcease mine, Oroville, California, is continuing gold-silver production as a means to an end, rather than an end itself. With the organization committed to a policy of conversion to strategic mineral production, the mine operation provides finances, technical staff, and a base from which intensive search for war mineral sources is carried on. In one phase of the program a field test-unit has been set up in southern California to examine a unique tungsten deposit and to study the special problems of recovery involved. Hoefling Brothers, Box 786, Sacramento, California, operate the Surcease.

The Keystone Copper Company, which recently acquired a 20-year lease on a portion of the Calaveras Consolidated Copper Company property at Copperopolis, California, is seeking a \$50,000 RFC mine loan to cover further development, milling equipment, and operating expenses. The Keystone company is composed of Stewart and Ness, contractors of Fresno, California, and H. E. Bush and F. W. H. Beauchamp, both of Copperopolis. Bush is in charge of work at the mine.

S. P. Brownlee, building contractor, has acquired gravel deposits in the New River district which he plans to dredge. He is making his headquarters at Salyer, California, where he is addressed in care of W. Browning.

Oscar J. Henry, Medford, Oregon, has made application for a permit to divert 3 cubic feet of water per second to open a hydraulic mining project on Blue Jay Creek, a tributary of Scott River, in Siskiyou County, California.

The California Division of Water Resources, Sacramento, California, has issued the following water permits: Monte Christo Mining Company, Mammoth Lakes, California, 10,000 gallons per day from Cold Water Creek for mining and domestic purposes; Marie Martin, 1829 San Lorenzo Avenue, Berkeley, California, 150 cubic feet per second from Sailor, Little Sailor, and New York canyons for mining and domestic purposes, estimated cost \$20,000;

George L. Costa, Castella, California, 0.5 cubic foot per second from Crow Creek for mining and domestic purposes.

The Associated Mining Contractors have taken over the Baltimore mine, one of the properties of the Mayflower Gravel Mining Company, at Foresthill, California. The mill is being remodeled and ditches are being cleaned out, preparatory to drifting. Twelve men are employed. Richard Detert, 1715 Mills Tower, San Francisco, is president of the Mayflower company.

It is reported that the Rosekrip Mines Company, F. J. Hartnett, general manager, Bodie, California, has been closed down for the duration of the war. Inability to obtain equipment and material is given as the reason for the shutdown. A few men will remain for possibly a month or more, it is said, in order to finish the run of material in the tanks and to clean up around the mill. The 500-ton cyanide plant has been running on low-grade ores of the Standard and other old mines at the camp and on dump ores and mineralized overburden. It was enlarged last year.

The Idaho Maryland Mines Corporation, Albert Crase, general manager, Grass Valley, California, is reported to have acquired a sampling option on a 600-acre tract in Nevada County owned by Luke Williams, 226 South Church Street, Grass Valley. The ground is said to carry a deposit containing commercial values in lead and zinc.

N. T. McKee of Caliente, California, who has been milling scheelite since August 1940, has shipped approximately 1,000 tons of concentrates. His mill will handle 10 tons in an eight-hour shift.

E. G. Cahill, San Francisco utilities manager, is reported to have negotiated a tentative agreement with the federal government for construction of a \$12,000,000 plant for production of alumina. The plant, to be built under government sponsorship, may be located in the Livermore Valley in Alameda County because of the availability of Hetch Hetchy power.

At the annual meeting of stockholders of the Central Eureka Mining Company, C. C. Prior, president, told the group that it will be possible to operate for several months at least, and this period of operation may be further extended under favorable circumstances. However, it may be shortened if the critical labor shortage becomes more acute. During March the company had a turnover of 47 workers out of an underground crew totaling 150. Closing of some Mother Lode mines may partially relieve the situation. For the first quarter of 1942 the company reported an operating profit of \$22,379 before depletion, depreciation, and taxes, which compares with an operating profit of \$94,118 on an identical basis for the corresponding period of last year. Production totaled \$176,631 from 12,335 tons of ore, compared with \$240,343 from 14,559 tons in 1941. Average net return for the three months was \$14.32 per ton, against \$16.50 per ton in the like period of last year. The company's properties are located at Sutter Creek, California.

Burton Brothers, Rosamond, California, who operate the **Tropico** mine and mill near Rosamond, the **Ruth** gold mine north of Trona, California, and the **Fortuna** gold mine near Yuma, Arizona, have denied rumors that they have shut down the Ruth and are planning to shut down at Tropico. Clifford Burton states that the report is without foundation. The Ruth is running at just about the full capacity of the 100-ton mill. One shift has been discontinued at the Tropico and that mine is now averaging about 100 tons of ore daily. At the Fortuna the search is being continued for the lost ore body. Inasmuch as the Fortuna ore is high in silica, which is needed as a flux for the copper smelters, that mine probably will continue in operation, if and when the ore body is located.

Bruce Minard, Box 414, Mojave, California, co-owner of **Galena Mines** located 10 miles north of Mojave, reports that a body of high-grade lead ore has been opened up and a carload shipment of ore will be made soon. Associated with Minard are his brother, Bill Minard, and Ted Roe. The latter two have been developing the property for the past month.

It is reported that shipments of manganese ore are being made from the **Lakeview** mine near Crescent Mills, California, and also from other mines in the district.

An additional rotary furnace is being installed at the property of **Sonoma Quick-silver Mines, Inc.**, Guerneville, Sonoma County, California, which will make possible the treatment of more than 150 tons of ore daily. Shaft sinking is proceeding and is nearing the 500-foot level. A 100-horsepower hoist has been installed to handle the increased tonnage, and the capacity of the crushing plant has been increased also with the installation of a new No. 50 Kue-Ken crusher. S. F. Wickham, Box 1374, Guerneville, is superintendent at the mine. Ben Thomas is mine foreman, and H. F. Larsen is furnace foreman and assayer.

Due to a shortage of miners, work has been suspended temporarily on the 600-foot level of the **Diltz** mine 10 miles north-east of Mariposa, California. However, an oreshoot has been opened up near the surface which gives promise of maintaining the mine as a producer. The property is being worked by Earl R. Baker, Mariposa, one of the owners.

It is reported that the **Sheepbranch** mine at Sheepbranch, California, operated by the **St. Joseph Lead Company**, will be closed down by the first of May, due to lack of ore. It is understood that the closing will be final, since the company is pulling the pumps, allowing the workings to fill with water. An early day gold producer, the Sheepbranch was reopened in 1937 by St. Joseph Lead, and the operation has given employment to more than 150 men. Some of the miners will be transferred to the company's properties at Hughesville, Montana.

Walker Mining Company, Walkermine, California, produced 7,248,128 pounds of recoverable copper, 166,581 ounces of silver, and 10,938 ounces of gold in 1941 before the mine was shut down October 24,

according to the annual report of the **Anaconda Copper Mining Company**. Anaconda holds the controlling interest in Walker through its subsidiary, **International Smelting and Refining Company**. In 1940 Walker Mining Company produced 10,524,345 pounds of copper, 237,891 ounces of silver, and 14,176 ounces of gold, and reported a net loss of \$290,295. The decrease in ore reserves, causing an unavoidable decrease in production, resulted in an increase of cost to such an extent above the price fixed by the Office of Price Administration that, after full consideration of the situation, it was decided by the management to suspend operations.

The drift mine of **Ruby Mines Company**, L. L. Huelsdonk, general superintendent,

Goodyears Bar, California, is being closed down and will carry only a skeleton crew of five men for the time being. C. L. Best, owner of the property, is in the east, and exact plans for the mine will not be known until he returns. Difficulty in securing miners is given as one of the reasons for the closing of the property, and it is understood also that Best is considering plans for entering the chrome mining field. The small crew at the Ruby will explore the ground for another channel, according to Huelsdonk.

A crew of nine men is employed at the **Moroney Chrome Mines** near Hamburg, California, under the direction of Elmer Weeks, mine superintendent, and daily production is averaging 50 tons. A new road

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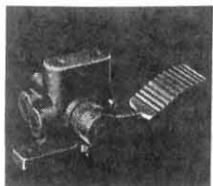
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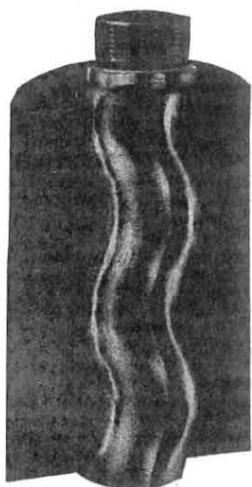
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and a new 60-ton bunker are among the construction projects under way at the mine. The properties are owned by Dorothea Reddy Moroney, Hamburg, and Michael Reddy, Yreka, California.

Mining and milling operations will be resumed soon at the **Sulphide Queen** mine, Mountain Pass, via Nipton, California. The property has been shut down since last May when a lease held by J. C. Howard of Long Beach was cancelled. Values are chiefly in gold and the mine is equipped with a 100-ton cyanide plant. Between 25 and 30 men will be employed when operations get under way. The mine is owned by Fred B. Piehl, Mountain Pass, via Nipton, California. Harry L. Martin, 117 West Ninth Street, Los Angeles, is business representative and purchasing agent for the mine.

Walter F. Lineberger, 85 El Bosque Road, and Harold S. Chase, 1012 State Street, Santa Barbara, California, are reported to be operating the **Pat** tungsten mine located at Dawes Station between Cima and Kelso, California. Twenty tons of ore are shipped every other day by truck to a tungsten mill in Los Angeles. They also control the Standard No. 2 group of scheelite claims between the Walter W. Hartman tungsten operations near Cima, and the Liveoak tungsten, zinc, and copper mine near Barnwell. None of the latter are on production, although development work is being carried on. Lineberger and Chase formerly operated the Colosseum gold mine, now inactive.

A. W. Holmes, Benton, California, now has the **Comanche** mine near Benton on a production basis. Ore is treated at the plant of the Mineral Reduction Company, located on Comanche ground and operated by C. W. Jones, Benton. The Comanche is owned by the United States Metals Corporation, Philip J. Barnes, president, 510 West Sixth Street, Los Angeles, California, and is under lease to Holmes. U. S. Metals acquired the property from the Comanche Mining and Reduction Company. It is comprised of 56 claims, 36 of which are patented. Metal values are in silver, gold, lead, and copper. U. S. Metals also owns properties in Arizona, Nevada, and elsewhere in California. One of these is the Kaibab copper property in the Kaibab forest of Coconino County, Arizona, which is under lease to H. G. Snyder, Box 493, Salt Lake City, Utah. Snyder plans to begin development work as soon as snow is off the ground. The Kaibab property is made up of 25 claims, 15 of which are patented. Open-pit methods will be employed in working this property. Roy S. Gangestad, 510 West Sixth Street, Los Angeles, is vice-president and general manager of U. S. Metals.

Shaft sinking and driving of a crosscut tunnel are under way at the **Walsh** group of 10 manganese claims located five miles northwest of Ludlow, San Bernardino County, California. J. M. Elmer, consulting engineer of Valdez, Alaska, is at Ludlow directing work for the operating group. The mine is owned by W. T. Walsh, mining engineer, 930 Clement Street, San Francisco, California, A. N. Rabe of San Francisco, and a Chinese syndicate repre-

sented by L. W. Yim of Ludlow. The operating group holds a 15-year lease on the ground. The deposit is said to be remarkable by reason of the fact that the manganese ore contains no copper, lead, or zinc. Sufficient development work has been done in past operations to expose the ore body, which is said to be extensive.

Approximately 100 tons of copper-silver-gold ore are being shipped daily from the **Pacific** mines, formerly known as the **Bagdad Chase**, near Ludlow, San Bernardino County, California. The ore is going to the American Smelting and Refining Company's plant at Hayden, Arizona, for treatment. The mines, owned by John H. Hobbs of Ludlow, are being operated under lease by Frank W. Royer of Red Mountain, California.

The **Del Norte Mining Company**, J. W. Stivers, resident manager, Mojave, California, is operating under lease the old Skidoo group of gold claims, owned by Roy C. Troeger, 942 Fourth Avenue, Los Angeles, and associates. A crew of 10 men is employed and ore is treated in the 30-ton milling plant.

Production of high-grade manganese ore is being increased gradually at the **Whedon Manganese Mines** in the Paymaster district of Imperial County near Glamis, California, and a crew of 14 men is employed. Seven cars of ore have been shipped to the Metals Reserve Company stockpile at Phoenix, Arizona. Since the deposit consists principally of vertical outcropping veins, a hand-sorting method is employed, making a treatment plant at the site unnecessary. V. B. Whedon, Bank of America Building, 9470 Santa Monica Boulevard, Beverly Hills, California, operates the property.

Property of the **Lodestar Mining Company** near Mojave, California, has been sold to the **Golden Queen Mining Company**, Mojave, California, and the Lodestar company is in process of liquidation and dissolution.

Thomas A. Wood, Citizens National Bank Building, Los Angeles, California, and associates have acquired a 20-year lease on the **Governor** gold mine at Acton, California. The new interests are operating as the **Governor Mine Company** and a crew of 20 men is employed under the direction of Granville Moore, superintendent. Francis Gage, former manager, disposed of his interest in the property due to ill health which followed an injury suffered last year.

Work is nearing completion on installation of a 250-ton mill at the **Darwin** lead mine near Darwin, California, and a crew of 100 men is employed. **Imperial Metals, Inc.**, headed by Sam B. Mosher, Signal Oil Building, Los Angeles, has been organized to operate properties in the Darwin district formerly worked by Imperial Smelting and Refining Company, now inactive. The company holds an option on the **Estelle** mine at Darwin and controls adjacent properties. H. E. Olund, 611 Geneva Street, Glendale, California, is consulting engineer for Imperial Metals; J. D. Williams,

Darwin, is manager; and S. A. Spellmeyer, also of Darwin, is mine superintendent.

The 50-ton pilot mill under construction at the property of the Oregon Hill Mining Company, Inc., Placerville, California, is expected to be ready for operation by May 1, according to L. F. S. Holland, secretary and manager, Box 191, Placerville. Ore for the plant will be taken from a 320-foot shaft and a tunnel near the shaft. At present, drifting, raising, and crosscutting are being carried on in the shaft and drifting and crosscutting are proceeding in the tunnel. Below the 320-foot level of the two-compartment shaft is a 40-foot sump and an ore and waste pocket. The mill is to be operated on a three-shift basis, and exploration and development work in the mine will be carried on also.

The Golden Queen Mining Company, Mojave, California, is reported to be considering a plan for conversion of its present gold and silver mill to handle scheelite ore, or construction of a new mill in the heart of the tungsten area in the upper Kern River valley. The company's Mojave milling plant has a capacity of 500 tons of ore daily. W. C. Browning, 1211 Pacific Mutual Building, Los Angeles, California, is general manager of the Golden Queen.

The Volo Mining Company, Placerville, California, has started operations at the River View mine in the Gold Hill section overlooking the American River Canyon, and the early yield is said to be sufficient to warrant increasing the crew from three men to six. Ore from the River View is trucked to the company's mill at the Shaw mine six miles north of Placerville. Present operations at the River View are centered on driving a 300-foot crosscut. The ore is reported to assay from \$22 to \$60 per ton in gold. At the company's principal operations at the Shaw mine, a battery locomotive has been put into service, replacing the one driven by a gas engine. Two additional 35-foot thickeners are being installed as a part of the company's plan to bring the capacity of the cyanide plant up to 300 tons daily. F. V. Phillips is president and general manager of the company and operating personnel includes Gilbert Gardner, general superintendent; Earl Hamilton, mine superintendent; and George Phillips, mill superintendent.

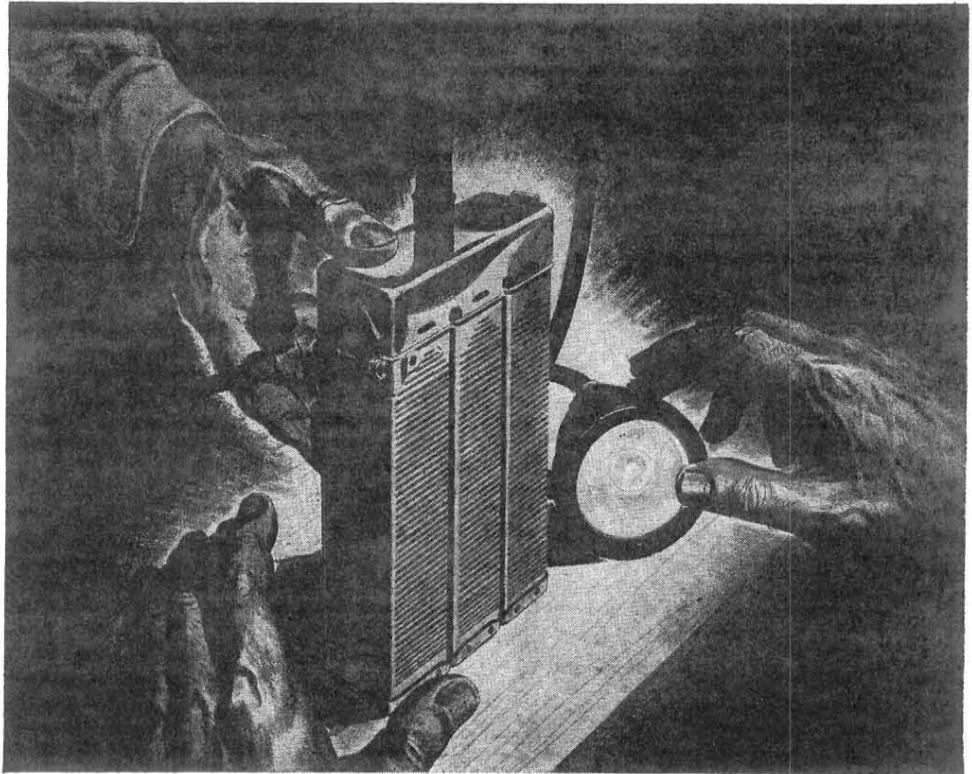
The Lava Cap Gold Mining Corporation, O. E. Schiffner, general manager, Nevada City, California, has been reclassified by the War Production Board and has been given a priority rating as a strategic minerals producer. The new classification places the mine in the same class as copper, lead, or iron producers. The company received the higher rating because its concentrates, which are sent to the Selby smelter, are necessary for fluxing purposes. Lava Cap had been handicapped recently by a shortage of experienced personnel and has been running with 40 men less than needed for normal operations. Production, however, has been kept close to normal by moving men out of the smaller stopes to the larger ones in order to keep up the tonnage.

COLORADO

With the rebuilding of the Pride of the West, Inc., milling plant near Silverton, Colorado, capacity of the mill is being increased to 100 tons of ore daily. A two-foot extension on the ball mill and two additional flotation units, one for zinc and one for lead, are being installed. A new forge, drill sharpener, and compressor have been installed, replacing the equipment lost in the fire that destroyed the mill last fall. T. B. Stearns of 1716 Cali-

fornia Street, Denver, is president of the company and Fred A. Brinker, 734 Third Avenue, Durango, is general manager. Ralph Shimmin, Silverton, is mill superintendent.

Dredging operations will be started soon by the Timberline Dredging Company at its new No. 2 dredge on the Snowstorm placers between Fairplay and Alma, Colorado. The dredge will handle 10,000 yards of gravel daily. The No. 1 or Continental dredge which the company operates handles 4,000 yards daily. E. J. Cunningham, Engineers Building, Denver, is vice-president and general manager and H. J. Ackley, Fairplay, is superintendent. The company is headed by F. M. Lebold of Chicago.



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METROPOLITAN POWER IS TO BE USED BY BASIC MAGNESIUM, INC.

A LARGE block of power will be fur-
nished Basic Magnesium, Inc., by the
Metropolitan Water District, with lesser
amounts coming from Parker Dam and
from the Nevada allotment of Boulder
Dam power. Agreements with the Metro-
politan district provide that the district
will supply power, a large amount of which
it has contracted to buy from the federal
government for pumping operations on the
Colorado River aqueduct, but which it does
not need at present. In addition, it is
proposed that electric energy to be gen-
erated at Parker Dam be used by the
magnesium company.

Parker Dam was built by the United
States Bureau of Reclamation with funds
supplied by the Metropolitan Water Dis-
trict and the district holds the right to
one-half the generating capacity of the
dam. The Parker Dam power plant, which
will have 90 000 kw. in installations, is
nearing completion. The present plan is
that the Metropolitan district will release
at current cost a large block of firm en-
ergy for the first three years the magne-
sium plant operates. The district also
will permit the transmission of power from
Parker Dam over its line to Boulder. Dur-
ing this period the district will be relieved
of practically all charges for unused en-
ergy, and there will be a substantial re-
duction of its generating charges at
Boulder Dam in addition to credits for
Parker power used. The total credits for
the proposed three-year contract period
would amount to several million dollars.

One of the reasons for the present choice
of the Basic Magnesium plant site is that
a large part of the two 82,500-kw. gen-
erators installed for the district at Boulder
Dam is available to serve the magnesium
plant. One additional generator of 82,500-
kw. capacity is to be installed.

NEVADA CONSOLIDATED LOSES SUPREME COURT DECISION

THE supreme court has upheld an order
of the War Labor Board directing the
Chino Mines Division of the Nevada Con-
solidated Copper Corporation, Hurley and
Santa Rita, New Mexico, to offer employ-
ment to a group of men which the board
held had been denied work because of
union activity or union membership. The
court acted in an order in which it said
that it was incumbent upon the courts to
uphold the board's determination.

The company contended that the men
had been denied employment when
work was resumed in 1936 following a
shutdown because it was "honestly be-
lieved" that if they were hired such a
course would "invite resumption of terror
and turmoil."

In reply, the labor board held that 67
persons were denied employment because
of their connection with the International
Union of Mine, Mill and Smelter Workers
(A. F. of L.) which had been seeking to
organize the company's employees. When
the company resumed operations in 1936,
the board said, a "blacklist" was compiled
of former employees who were not to be
rehired.

The company said the shutdown from
1934 to 1936 was due to market condi-
tions which prevented disposal of their
product. Enforcement of the labor board's
order had been denied previously in cir-
cuit court on the grounds that it was just
as reasonable to accept the explanation of
the company as to accept that of the board.

MINE COMPANY WANTS OLD ROAD REPAIRED; NEW ONE UNNECESSARY

DISAGREEMENTS as to the proper lo-
cation of the road into the Yellow
Pine district of Valley County, Idaho, were
temporarily settled by a compromise
whereby \$38,000 will be spent to recondi-
tion the present road, leaving the question
of the permanent route unsolved for the
time being. The proposed road, known
in the controversy as the McCall road, is
estimated to cost about \$750,000 and will
connect McCall and Stibnite, a distance of
about 60 miles, passing over one 6,300-
foot summit. While it has not been defi-
nitely announced, it is believed that this
route could be finished in a single season,
the present road to be used during con-
struction of the new one.

The present road is 79 miles long and
goes to the railhead at Cascade, crossing
two summits, 6,800 and 7,300 feet in ele-
vation. It has been kept free of snow all
winter and has been in constant use by
the Bradley Mining Company, principal
producer of the district. Officials of the
Bradley company contend that the pro-
posed road would not be completed dur-
ing the emergency and its construction
would divert funds which might otherwise
be spent in the maintenance, repair, and
some re-routing of the present highway.
The mining company is using 20 trucks
to haul tungsten and antimony over the
present road to the railroad at Cascade
and plans to double this number in time.

It is, perhaps, a unique situation when
mine operators do not want a new road
into their property and the state authori-
ties insist that it is necessary to allow the
operators to maintain uninterrupted pro-
duction. While repairs to the present Cas-
cade route are being made state and fed-
eral engineers will canvass the possibili-
ties of alternate routes, including not only
the McCall road, but one by-passing the
Warm Lakes and Big Creek summits into
Cascade.

BULLETIN ON OREGON MINING LAWS IS BROUGHT UP-TO-DATE

THE Oregon State Department of Ge-
ology and Mineral Industries has an-
nounced the publication of Oregon mining
regulations in the revised edition Bulletin
No. 1. Included in the new bulletin are
the laws passed by the 1939 and 1941
legislatures, as well as a reprint of the
United States Bureau of Mines Technical
Paper 591 which gives an outline of the
federal placer mining laws, which apply in
all cases where state laws have not been
passed to modify the federal regulations.
This bulletin may be obtained for 20 cents
postpaid from the department's head of-
fices at 702 Woodlark Building, Portland,
Oregon.

PAGE
CUT

average exposed width is about four feet. Sufficient evidence is present to indicate that such a width may persist the entire 27 miles."

In the Red Lodge area an ultrabasic zone was intruded into the surrounding rock, probably during pre-Cambrian times. Since the intrusion there have been several periods of folding and faulting and later intrusion. The latest stage of diastrophism was faulting. At both the High Line and Pick claims a syenite porphyry cuts the ultrabasic zone. The contact is a fault plane. At the High Line the west side of the porphyry shows a vertical slip; the east side has a horizontal slip; and the porphyry has been cut off to the south by an oblique movement. On this porphyry three sets of faulting can be observed and each one is in a different direction. Slickensided surfaces are prominent throughout the serpentine zone. A large part of the slickensides are probably more the result of flowage than true faulting.

Slickensides also may be evidence of strike faulting that has no other expression. The chrome ore shows evidence of faulting in the irregular blocky shape of the ore. Faults have cut off ore-shoots. The metamorphic minerals and the chrome have reacted differently to the strains and stresses. Metamorphism has developed minerals with good cleavage and which flow easily when subjected to strain. The chromite has been less affected and, even if recrystallized, it is harder and more resistant than the surrounding rock. Since chromite is more resistant, it would assume the role of the competent bed and transmit stresses. The serpentine schist would be the incompetent bed and flow into relieved areas.

With this role of a competent bed assigned to the chrome ore, folding and faulting will have special effects. Assume that the chromite is a magmatic segregation in a medial position in the ultrabasic zone; that originally it was fairly continuous; that the ore acted as a competent bed; and that the waste rock of the zone flowed under pressure as an incompetent bed on each side of the ore. Folding would have inclined the chromite to thicken on the crest of folds, and thin on the limbs. (Folds are important in igneous rock, but often are concealed because of homogeneity of the rock or are not unraveled because of their complexity.) Folding may have played an important part in the present form of the rocks in this area. In faulting, the chrome would break while the schist would flow into relieved areas. Fault mechanics could either separate the blocks of chrome ore or bring them closer together. It would be possible by the mechanics of folding and faulting to increase the thickness of the vein or lenses to blocks several times their original size and also have disconnected stringers, and large areas with no showings of chrome ore. (Large blocks of chromite, 150 feet by 80 feet, are found with the area between them filled by serpentine schist.)

A hypothetical case might explain the occurrence of chrome ore at the High Line:

A basic intrusion invaded the country rock; in cooling, the magma differentiated and chromite was segregated into a medial position in the intrusion. Then metamorphism changed the minerals into the micas, serpentine, and chlorite. The chromite was affected slightly. (At this time the chromite would act as a thin competent bed.) Then a period of folding followed and the chromite thickened over the fold crests and thinned along the limbs so that the thickness of the crests may have increased double or more its original width. Faulting followed in which the ore was separated into isolated blocks.

Thus one would expect and does find at the High Line two or more blocks from the fold crest shoved together to form a large ore body plus irregularly shaped pockets, isolated stringers, and large areas within the zone with no chromite. The flowage of the metamorphosed basic rock would cover up evidence of faulting within the bed and only at the contact of the zone would it be possible to pick up conclusive fault evidence. Evidence of strike faulting within the zone would be completely erased. In the actual formation of ore shoots these processes proceeded somewhat concurrently.

In conclusion, it might be said that:

1. Chromite occurs as a magmatic segregation in a medial position in a zone of serpentine rock, chlorite, mica, and hornblende schist.
2. The chromite bearing zone originally was a basic intrusion which has been metamorphosed into its present form.
3. The zone could be mapped as a geological unit.
4. After metamorphism the chromite assumed the role of a competent member in the zone and has acted accordingly in subsequent folding and faulting.
5. The extent of local folding and faulting has influenced the spot concentration of ore. That is—in an area of little or minor local flexures, the ore will occur as a long narrow vein, or as lenses, while in an area that has been subjected to greater local movement, the ore will occur as isolated blocks.

CALIFORNIA COMPILES DATA ON STATE'S TUNGSTEN RESOURCES

THE California Bureau of War Minerals Production, headed by Bruce McDonell, 304 State Office Building, Sacramento, California, has completed a survey of the tungsten mining possibilities in a strip eight miles wide extending from a point 10 miles southeast of Mariposa, California, through Mariposa, Madera, Fresno, and Tulare counties to a point near Isabella in Kern County. The 35-page mimeographed report, compiled by a field crew headed by Quenton L. Brewer, will be available to the public.

The belt is described as one of the largest undeveloped tungsten belts in the state, second only in development possibilities to the better known Bishop district in Inyo and Mono counties. It is stated that of nearly 50 properties investigated, not more than five are being worked on a commercial scale.

DPC TUNGSTEN PLANT GOES TO U. S. VANADIUM CONCERN

TUNGSTEN ores and concentrates carrying as low as 3 per cent tungsten will be handled in a new \$350,000 plant at Salt Lake City, Utah, to be built by United States Vanadium Corporation as agent for Metals Reserve Company. The 100-ton daily capacity plant will be financed by Defense Plant Corporation. Contract for the construction work has been awarded to Stearns-Roger Manufacturing Company of Denver. A small plant of similar design is now in operation at the United States Vanadium Corporation's plant near Bishop, California.

It is expected that concentrates will be received at the proposed plant from many mines in the western states. It is possible that a concentrating mill will be built near Midvale to handle ore on a custom basis.

David D. Baker, previously of U. S. Vanadium's San Francisco office, will be in charge of the work in Salt Lake City. The plant will be located at 568 West Eighth South Street.

AURORA CONSOLIDATED CLAIMS AND EQUIPMENT ARE LEASED

ALL the holdings of the Goldfield Consolidated Mines Company in the Aurora district of Nevada have been acquired under lease and option by H. B. Chessher, 333 Gazette Building, Reno, Nevada. These include the Juniata mine, once owned by the now dissolved Aurora Consolidated Mining Company and held until recently by the Evans, Stickney, Nell and Kingsbury partnership of San Francisco. Chessher will purchase all mining and milling equipment installed in 1939 and 1940 by the former operators. Mill capacity is 50 to 60 tons of ore daily.

At the present time full power facilities are not available, the machinery being connected to the Mineral County power system line upon which there are heavy defense demands. Plans for the installation of a large Diesel unit are being considered, in the event that the flotation mill is used to process strategic ores. The area has been noted for the production of gold and silver and the mines will not be operated by Chessher until after the war.

ALASKA MINERS PROPOSE PLAN TO FIGHT POSSIBLE INVADERS

ALASKA miners are urging that the United States Army furnish far-flung mining camps in isolated localities of the territory with machine guns to be used in the event of any invasion. According to advice, the Alaska Miners' Association has requested the army not only to furnish mining camps with modern war weapons, but to assign at least one trained soldier to each camp to teach the miners how to handle the arms. A resolution of the territorial mining association was expedited to General Simon Bolivar Buckner, commander of the Alaska Defense Command, and to A. J. Dimond, territorial delegate to Congress, and to the governor of Alaska, Ernest Gruening. The resolution further stated that the miners could be organized for guerrilla warfare which would be valuable in case of enemy invasion.

Concentrates from Western States

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



Preparations are being completed for the resumption of production by the **New York Alaska Gold Dredging Corporation**, James Crowder of Nyc, Alaska, superintendent. The company operates two dredges on the Tuluksak River in the Bethel district and a dragline and washing plant on Bear Creek in the same district, with a total crew of around 50 men.

The **Goodnews Bay Mining Company** is reopening for the season at its holdings near Platinum, Alaska, under the management of Charles J. Johnston of Platinum. Edward Olson is superintendent. The company has an eight-foot Yuba dredge, capable of operating 50 feet below water level, and two dragline outfits in the vicinity of Goodnews Bay.

The **Nabesna Mining Corporation**, Carl F. Whitham of Nabesna, Alaska, president and general manager, has decided not to reopen for the season, but to remain shut down for the duration of the war. The company has been employing about 45 men and is equipped with mining and milling facilities to handle 100 tons of ore daily.

A new company, known as the **Alaska Copper Corporation**, has been organized to carry on prospecting and mining in the Territory of Alaska. Main offices will be established at Fidalgo Bay, which is not a post office. Edward F. Medley, attorney with offices in the American Bank Building, Seattle, Washington, and Herbert W. Haughland, attorney, Arctic Building, Seattle, are the incorporators. The company, capitalized at \$50,000, is headed by L. A. Levensaler, Hoge Building, Seattle.



Hugh R. Meadows, contractor, 2815 North Central Avenue, Phoenix, Arizona, has been awarded a contract for construction of 40 additional homes near the Morenci Open-Pit mine of the **Phelps Dodge Corporation**, Morenci, Arizona. Contract for furnishing the lumber and asbestos roofing for the new houses went to the Jennings Lumber Company of Safford, Arizona. The houses will cost approximately \$200,000. Twenty of the new homes will be single houses with two and three bedrooms, and 20 will be duplexes. Plans and specifications were prepared by Lescher and Mahoney, Phoenix architects.

The power plant and shaft of the Bunker Hill mine at Sombrero Butte, Ari-

zona, were destroyed by fire recently, with damage estimated at \$75,000. The loss is not covered by insurance. The Bunker Hill is operated by the **Ari-Butte Operating Company**, O. W. Blevins, president and general manager, Sombrero Butte. No plans have been made for rebuilding.

Pockets of high-grade tungsten ore are reported to have been encountered in the Culver-Murphy holdings in the Dragoon Mountains 13 miles east of Benson, Arizona, the ore running from 10 per cent up in WO₃, with some samples assaying from 50 to 70 per cent in hubnerite. The properties are being opened up by the **Culver-Murphy Company**, Harry H. Culver, president, 326 Heard Building, Phoenix, Arizona, and government funds will be sought to carry on large-scale production. The ground under development formerly was owned by J. J. Wien of Benson, Arizona.

It is reported that a large loan has been authorized for development work and plant expansion at the Hillside mine of the **Boulder Mining Company**, Hillside, Arizona. The property has been closed down since January of this year and has been on a standby pumping basis pending completion of arrangements for doubling the capacity of the 100-ton flotation plant. Pitt W. Hyde, Hillside, is general manager of the company. James W. England, Jr., of Philadelphia is president of the company and Colonel Percy E. Barbour of New York City is consulting engineer.

E. M. Moores, president of the **Gladiator Mining Company**, Crown King, Arizona, has taken over the mill of **Golden Belt Mines, Inc.**, at Cordes, Arizona, and is re-vamping the plant preparatory to treating Gladiator ore. Values are in gold, silver, copper, lead, and zinc.

Phelps Dodge Corporation, Louis S. Cates, president, 40 Wall Street, New York City, has declared a dividend of 40 cents a share, payable June 10 to stock of record May 22. The dividend will amount to \$2,028,040.

The **Bagdad Copper Corporation**, J. W. Still, general manager, Hillside, Arizona, has acquired an extensive acreage through purchase of the Cofer interests in Mohave and Yavapai counties. The property formerly was owned by the Burro Creek Cattle Company. Bagdad is carrying on an extensive expansion program, financed by a \$2,500,000 Reconstruction Finance Corporation loan.

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.

Officials of the **Tennessee Schuylkill Corporation**, Chloride, Arizona, are reported to be working on plans for doubling the capacity of the company's 150-ton lead-zinc flotation plant. Proposed enlargement of the plant is a result of the government's policy of paying premium prices for zinc produced in excess of 1941 output. **American Venture Corporation**, Nye A. Wimer, president, recently acquired a majority interest in the Tennessee Schuylkill Corporation and it is reported that the latter may be merged completely with the former company. **American Venture** has controlled 43 per cent of the TSC stock for several years. Wimer is also president of Tennessee Schuylkill.



The **Roseklip Mines Company**, F. J. Hartnett, general manager, Bodie, California, will maintain a skeleton crew at its property indefinitely, as it is planned to continue treatment of mine tailings. The company also has a small crew engaged in development work at the Alta quick-silver property, about seven miles from Bodie, which is said to show encouraging possibilities. Mining operations at Bodie were discontinued recently for the duration of the war, due to inability to obtain equipment and material. The 500-ton cyanide plant has been running for some time on low-grade ore from the Standard and other old mines at the camp and on dump ore and mineralized overburden.

A. L. Mecham, Box 262, Santa Barbara, California, and G. C. Bowman have acquired a group of chrome claims along the Klamath River near Orleans, California, and are preparing to open up the property.

The **Golden Eagle Mining Company** of Seattle has completed a 900-foot pipe line to serve the Bumble Bee mine on Indian Creek about 12 miles from Happy Camp, California. The new line is 14 gauge, 26 inches, reducing at the penstock to 12 inches, and has a fall of 183 feet. Holdings of the company, some of which are owned and some leased, include the Classic Hill, Bumble Bee or County, and the Blue Channel. E. Schuyten, Room 5, 208 Columbine Street, Seattle, Washington, is president of the company.

The **Napoleon copper mine** in the Telegraph City district of Calaveras County, California, is being reopened by the **Mountain Copper Company, Ltd.**, William F. Kett, general manager, 216 Pine Street, San Francisco, California. J. M. Basham, Shingle, California, is superintendent for the company and James H. Wren is mine foreman at the property.

The **Tungsten Chief Mining Company**, operating scheelite properties near Caliente, California, is expanding its mining operations, according to . . . T. McKee, who directs mining. Tom McKee, who operates the mill, is turning out a 70 per cent concentrate from garnet ore. The mill has a capacity of 10 tons per eight-hour shift.

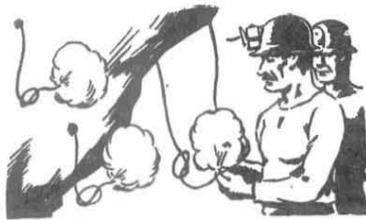
The company handles milling for nearby mines in addition to its own output.

Production is averaging in excess of 1,000 tons of gold ore daily at the property of the Carson Hill Gold Mining Corporation, Melones, California, with recovery averaging \$2.15 per ton. The company completed purchase of the Finnegan mine last year and is mining commercial ore bodies in the Carson Hill, Finnegan, and other adjacent properties, and a crew of approximately 160 men is employed. John A. Burgess is general manager at Melones.

Plans are reported in progress for a resumption of production on a fairly large scale at the McCormick mine about 10 miles west of Sonora, California. A substantial tonnage of chromite was shipped from the McCormick during the first world war and high-grade ore is reported to be exposed in the main workings. Commercial chrome also is said to be exposed in the Jasper property in the same district.

The Governor Mine Company, Acton, California, is engaged in extending the mine workings from the 900 to the 1,100-foot level, and an exploratory drift is being run to the south of proven ore bodies where it is believed additional ore will be encountered. The property was acquired recently by Thomas A. Wood, Citizens National Bank Building, Los Angeles, and associates. It is equipped with a 150-ton milling plant.

It is reported that plans are progressing for intensive development of the Whitmore



tungsten claims near Randsburg, California. Three shifts are working and a body of milling ore has been developed.

Charles Hopper Brown and associates have organized the Victory Chrome Company to operate in the Foresthill, California, district of Placer County. The company has virtually completed installation of a washing plant, including a trommel 16 feet long and 54 inches in diameter, jigs, and a picking belt for hand sorting. The plant will have a daily capacity of 400 cubic yards.

A partnership, composed of W. L. Braden and H. A. Dart of Roseville, California, is developing a chrome property in the Foresthill, California, district and more than 20 tons of chromite concentrate have been produced by the washing method. It is planned to install additional equipment in the near future.

D. D. Pettigrew, Foresthill, California, is prospecting a chromite deposit near Foresthill, using a bulldozer, power shovel, and trucks.

John Hampton Lashbaugh of Nevada City, California, has a contract with the

Metals Reserve Company to ship 125 tons of chrome ore monthly to the government stockpile. He holds options on several properties, including the Grass Valley Extension in the Deer Creek district, the Nick Pello property in the same area, chrome property in the Washington district, the Maben mine below Grass Valley and 17 acres in the Lady Jane Manor section. He also has chrome property in the Foresthill district.

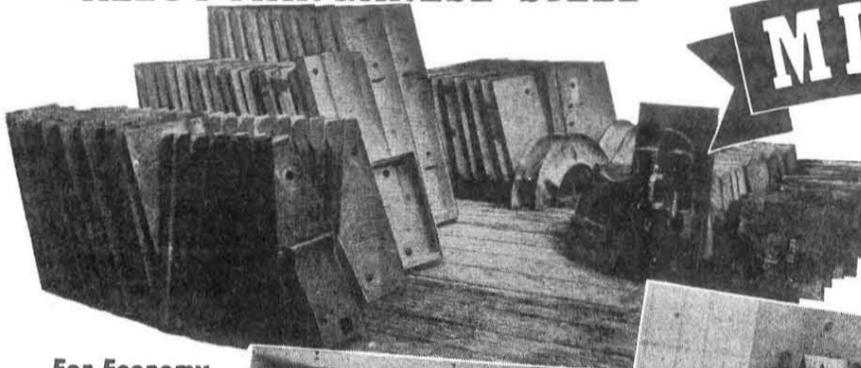
The war department has approved expenditure of \$210,000 to rebuild the Klamath River highway to facilitate the hauling of strategic minerals to Yreka, California. Work is expected to start in the near future. The project provides for widening and improving a 58-mile stretch of the highway. Chief minerals to be trucked out will be copper and chrome. Most of the copper will come from the Gray Eagle Copper Company at Happy Camp, California, while more than a score of small chrome producers will furnish the chrome ore.

Construction work is being rushed to completion at the Gray Eagle Copper Company, Happy Camp, California, with two shifts of men employed. Personnel at the mine includes Robert Hendricks, manager; Arthur Swanson, superintendent; W. M. Horton and Walter Hilberg, mining engineers; W. E. Lane, construction engineer; and Duncan L. King, mill superintendent.

The West End Development Company, J. C. Ballard, president, 2689 West Pico Street, Los Angeles, California, has started

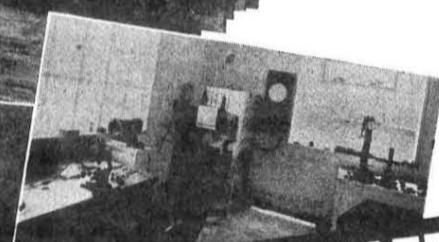
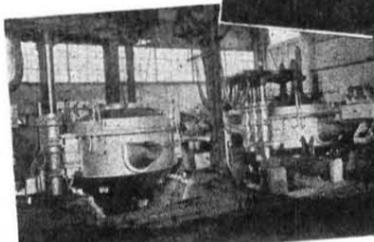
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operations at a silver-lead property several miles from Baker, California, with a crew of five men employed. It is an open-pit project and the company plans to ship two cars of ore weekly.

Operations have been suspended by the Baker and McCowan Dredging Company, John McCowan, manager, Quincy, California, and the dredge has been dismantled and stored. The company has been operating for the past two years in the old China Town district in Meadow Valley.

The Volo Mining Company, F. V. Phillips, president, Box 586, Placerville, California, has announced that if a sufficient supply of chrome ore can be made available for the firm's mill, it will be altered to handle that type of ore for the duration of the war. The company's 200-ton plant at the Shaw mine is shut down at present while two new tanks are being added to the recovery system. Phillips indicated that the company's main objective will continue to be the mining of gold until a sufficient quantity of chrome deposits is available to warrant transfer of the milling operations to the strategic mineral field.

The Montrose Mining and Milling Company is being organized to carry on chrome mining in the Dunsuir, California, district. Heim Goldman, 251 Parrott Drive, San Mateo, California, and associates are incorporating the company, and Goldman will take an active part in the management of the firm.

Salvaging operations at the Murchie mine have been completed by the Empire Star Mines Company, Ltd., Grass Valley, California, and all but two of the crew of 15 men which has been employed in the work for the past several months have been transferred to the Gray Eagle Copper Mine at Happy Camp, California. Both Empire Star and Gray Eagle are controlled by the Newmont Mining Corporation.

The milling plant of Alhambra-Shumway Mines, Inc., El Dorado, California, consisting of a 25-ton ball mill and amalgamation and flotation units, is operating on a two-shift basis. One shift is working in the mine with principal activity on the 150-foot level of the 400-foot shaft. Eleven men are employed under the direction of W. J. Loring, managing engineer.

Veins and shoots sampling from \$5 to \$22 per ton are reported to have been opened up in the old Davidson gold mine two miles north of El Dorado, California. Operation of the property has been carried on during the past year under the direction of the Alto Development Company, B. J. McManus, president and manager, El Dorado.

Shafter Howard, 1524 Anacapa Street, Santa Barbara, California, and associates, Harry Roberts, E. D. Bacon, and P. Morgan Fremlin, have assembled three properties in the Figueroa Mountain region of Santa Barbara County, and development work has been under way since last November. The properties are leased to Howard, who has a contract with Metals Reserve Company for the delivery of chrome ore to the stockpile at Phoenix, Arizona. The first carload shipment is being made in May and after June 1 it is planned to ship at least two cars monthly, averaging from 30 to 40 tons of high-grade ore per car. The chrome deposits are 40 miles from the shipping point, half of that distance being highway and the other half dirt roads and trails.



The Molybdenum Corporation of America is reported to have received a Reconstruction Finance Corporation loan to open and put into production the Urad mine on Red Mountain in the Daly district of Clear Creek County, about 11 miles from Empire, Colorado. The company acquired the ground late in 1939 from the Vanadium Corporation of America, but has done little besides some maintenance and clean-up work until the present. During the last war the mine was a high-grade molybdenum producer, but buildings were razed and equipment moved during its long period of idleness. O. R. Whitaker, 932 Equitable Building, Denver, is consulting engineer for the company and Walter J. Eaton, Box 213, San Juan Capistrano, California, will be the engineer in charge of operations.

Harry J. Doyle of 503 South York Street, Denver, Colorado, is reported to be

interested in mining property in the Apex district of Gilpin County near Central City. It is understood that Doyle and associates have acquired claims in the locality.

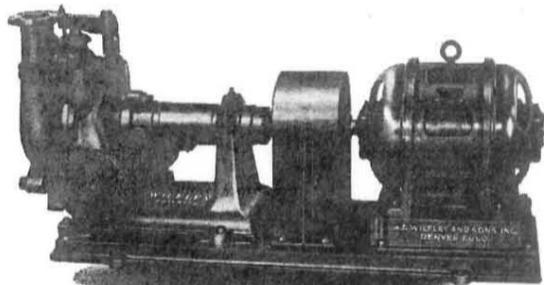
It is reported that a milling and smelting concern of Salt Lake City, Utah, is interested in the zinc property of Milbank Franz of Clark, Colorado, and is seeking federal aid for its development. The claims are located in the Greenville district of Routt County east of Clark. A test shipment of about one ton of dump ore to Salt Lake City is stated to have run \$18.38, with a bonus of \$10.80, making the total shipment worth \$29.18. Franz has a small crew engaged in cleaning out the old tunnel and preparing the mine for production. Present work is of a very shallow nature.

Work of the Diamond Mountain Mines, Inc., is being expanded and arrangements made for a priority rating. The company is headed by Christie Schelb of Montpelier, Ohio, who at present is making headquarters at 821 Galapago Street, Denver, Colorado, and is in direct charge of company operations. It is stated that the 700-foot main tunnel has opened ore. Values are in gold, silver, lead, zinc, and copper, and some antimony has been opened, it is reported. The property is the Lanning group of four claims in the Trail Creek district near Idaho Springs, held under lease from Mrs. Anna J. Gartrell.

The Great Western Silver Mines Corporation recently shipped the first concentrates from its new 25-ton flotation plant. The company, Walter A. Moore of Gold Hill, Colorado, president and general manager, is operating the Blue Bird mine near Nederland. It is said that a vein containing commercial values in silver was recently opened from the upper tunnel. Besides newly mined ore, the company is using dumps and stope fills for mill feed.

The Midnight Mining Company reports that operations are equal to or above last year's figures in monthly production. Ore is averaging 30 ounces of silver to the ton and 4 per cent lead and 4 per cent zinc. F. D. Willoughby, Box 188, Aspen, Colorado, is president and general manager, employing three shifts. Recently a battery-driven locomotive was installed, replacing mine mules, and a diamond drilling outfit was purchased. The company ex-

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Smelter Production

The smelter production of primary copper from domestic sources during 1941 amounted to 1,932,144,953 pounds, an increase of approximately 6 per cent. The value of smelter production increased approximately 11 per cent in 1941. The average price of copper was 11.8 cents a pound, f.o.b. refinery.

In the following table the production is apportioned to the states in which the copper was mined. The figures represent the content of fine copper in the blister produced and the smelter output of ingot copper from Michigan.

Copper Produced in the United States from Domestic Ores, 1939-1941
(Smelter Output, in Pounds Fine)

State	1939	1940	1941
Alaska	304,000	128,001	190,003
Arizona	525,410,905	574,533,050	657,100,101
California	8,490,872	13,091,643	8,029,066
Colorado	25,548,762	26,372,851	12,966,327
Georgia		25,917	
Idaho	4,632,415	7,379,389	7,101,877
Michigan	89,402,464	91,486,806	93,503,895
Missouri	1,020,000	1,638,000	1,546,526
Montana	203,512,107	258,141,139	257,424,059
Nevada	128,844,525	157,241,576	161,035,989
New Mexico	74,083,586	140,968,734	147,696,312
North Carolina	*	*	*
Oregon	95,557	202,527	167,899
Pennsylvania	*	*	*
South Carolina	66		
South Dakota		12,037	
Tennessee	*	*	*
Texas	66,000	66,000	14,000
Utah	326,117,467	497,463,560	541,293,973
Virginia	741		
Washington	16,756,007	21,022,000	17,334,000
Wyoming		4,018	8,000
Undistributed	21,064,014	28,390,268	26,732,926
	1,425,349,488	1,818,167,516	1,932,144,953

* Included under "Undistributed." Bureau not at liberty to publish.

Refined Copper

The total production of new refined copper in 1941 was 2,790,617,388 pounds, an increase of 164,000,000 pounds, or 6 per cent over that in 1940.

Primary and Secondary Copper Produced by Regular Refining Plants and Imported, 1939-1941, in Pounds

	1939	1940	1941
Primary:			
Domestic:*			
Electrolytic**	1,324,817,430	1,767,219,614	1,859,421,387
Lake**	84,928,386	87,259,382	91,395,293
Casting			
	1,409,745,816	1,854,478,996	1,950,816,680
Foreign:*			
Electrolytic	609,284,939	772,633,048	839,800,708
Casting			
Refinery production of new copper..	2,019,030,755	2,627,112,044	2,790,617,388
Imports of refined copper	32,527,473	136,674,143	***
Total new refined copper made available	2,051,558,228	2,763,786,187	***
Secondary			
Electrolytic†	233,225,695	235,337,792	190,873,847
Casting			8,476,000
	233,225,695	235,337,792	199,349,847
Grand total	2,284,783,923	2,999,123,979	***

* The separation of refined copper into metal of domestic and foreign origin is only approximate, as an accurate separation of the amounts at this stage of manufacture is not possible.

** Some copper from Michigan is electrolytically refined at an eastern refinery and is included as electrolytic copper.

*** Foreign trade figures are confidential after September 1941; therefore, cannot be published.

† Includes some secondary lake copper.

(Continued on page 40)

U. S. VANADIUM WILL SEEK

SOUTHWESTERN DEPOSITS

THE U. S. Vanadium Corporation, subsidiary of Union Carbide and Carbon Corporation, has established offices at 68 East Congress Street, Tucson, Arizona, to serve as headquarters for a survey of lead vanadate sources in the Southwest. G. Donald Emigh, formerly with the company's Pine Creek tungsten mine at Bishop, California, has been placed in charge of the office, and Arthur L. Flagg, consulting mining engineer, Box 2345, Phoenix, Arizona, will direct the field work.

The Tucson office will serve as headquarters for the region embracing New Mexico, Arizona, Nevada, and Southern California and will be operated under government subsidy. The U. S. Vanadium Corporation is acting as an agent for the Metals Reserve Company, maintained by the War Production Board to increase the production of strategic minerals.

If it is found necessary, U. S. Vanadium will go into the mining and milling of the deposits found in the survey, but first an effort will be made to encourage local mining men to enter the field. Preliminary surveys indicate several good lead vanadate sources in the area, according to Flagg, sources which in normal times it would not pay to work.

CALIFORNIA SITE SELECTED

FOR NEW ALUMINUM PLANT

REPRESENTATIVES of the Reconstruction Finance Corporation and the Defense Plant Corporation have announced plans for immediate construction of a \$12,000,000 plant to produce 100,000,000 tons of aluminum annually. The plant will be located in Stanislaus County, California, and surplus power from the Hetch Hetchy Dam will be used. The new plant will require at least 100,000 kilowatts of power to process the ore.

Selection of the Stanislaus site was announced after five months of study. Construction of the plant is expected to begin this month and production is scheduled for February 1943. The Aluminum Company of America will operate the plant. Some 320 acres of farmland are being purchased for the factory and approximately 1,000 men will be employed in the completed plant.

CONTRACT LET FOR EXPANSION

OF PHELPS DODGE REFINERY

A \$2,650,000 contract for expansion of the electrolytic copper refinery of the Phelps Dodge Refining Corporation, El Paso, Texas, has been awarded to J. E. Morgan and Sons, El Paso contractors. Both furnace and tank house capacities are to be increased and work on the project is expected to start immediately. Wilbur Jurden, consulting engineer for Phelps Dodge Corporation, will go to El Paso to direct the work.

Enlargement of the plant is a part of the \$26,000,000 expansion program, undertaken recently by Phelps Dodge, which also includes an 80 per cent increase in the Morenci reduction plant and erection of dams to provide water for the enlarged Morenci plant.

WPB AND METALS RESERVE CO. APPOINT WESTERN CONSULTANTS

A NEED for field representatives has developed as a result of the program for procurement of essential minerals by the War Production Board and the Metals Reserve Company. Therefore, the War Production Board, Minerals Branches, has appointed the following consulting mining engineers: Earl K. Nixon, Portland, Oregon; Ira Joralemon, San Francisco, California; and Olaf Rove, Washington, D. C. Other consultants will be added in the near future.

In addition, Metals Reserve Company has appointed a staff of consultants who are available to confer with mineral producers in connection with the development, production, and sale of strategic, critical, and essential minerals being sought to aid the war effort. The consultants now named and who will be available at their respective addresses are: Charles F. Willis, Phoenix, Arizona; Robert Linton, Los Angeles, California; Ira Joralemon, San Francisco, California; Orville Whittaker, Denver, Colorado; R. D. Leisk, Wallace, Idaho; Francis A. Thomson, Butte, Montana; Jay A. Carpenter, Reno, Nevada; Earl K. Nixon, Portland, Oregon; M. W. Hayward, El Paso, Texas; James W. Wade, Salt Lake City, Utah; and Milnor Roberts, Seattle, Washington.

These consultants will function in two capacities for Metals Reserve Company, serving without compensation. First, they will act as observers to receive criticism,

complaints, and suggestions regarding present policies of the company in their respective areas, and regarding further assistance which may be rendered the mining industry in encouraging the production of strategic metals and minerals. They also will serve as liaison representatives to inform producers of the facilities available through Metals Reserve Company and what that government agency can and cannot do in the war metals program.

WESTERN SAFETY ENGINEERS ATTEND LONG BEACH MEETING

SAFETY engineers from many branches of industry attended the Western Safety Conference held June 1 to 5, inclusive, at the Municipal Auditorium, Long Beach, California. Of special interest to mining men in the southwest was the program for the mining section, presented June 2, when a number of interesting subjects were covered.

The program for the mining section was as follows: "Effect on Industry of War-time Explosives Regulations," Dan Harrington, U. S. Bureau of Mines; "War Gases and Gas Masks," Dr. H. H. Schrenk, senior chemist, U. S. Bureau of Mines, Pittsburgh, Pennsylvania; "Safety's Responsibility in America's War," A. H. Zeilinger, Colorado Fuel and Iron Corporation, Pueblo, Colorado; "Modern Practice in Storing and Handling Explosives," R. W. Crabtree, Hercules Powder Company.

Motion pictures of operations at the Pine Creek tungsten mine of the U. S.

Vanadium Corporation at Bishop, California, were shown by Hollis H. Joy, safety inspector for the company's Bishop properties.

DENVER OFFICE OF RFC HAS INCREASED PERSONNEL

PERSONNEL of the Denver, Colorado, office of the Reconstruction Finance Corporation was increased recently by the addition of several representatives of the mining division of the corporation. Ross L. Hudson is manager of the office, which is located at 410 Boston Building, and Carl I. Dismant, engineer examiner, is in charge of the additional activity.

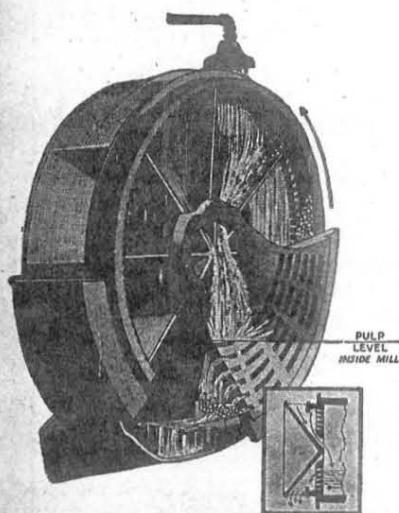
Though applications for mining loans will continue to be passed upon in the Washington office, they will be expedited greatly through the assistance that the local RFC office will be able to give applicants.

BUTTE MINERS GIVE UP HOLIDAY TO CONTINUE WAR PRODUCTION

BUTTE Miners' Day, a day set aside in 1933 as an annual holiday for the miners at Butte, Montana, will be observed in 1942 by "continuing production of copper to end the present war as soon as possible." The date on which the usual parade and program is held is June 13, but this year the copper miners continued mining as they had done on Memorial Day. The decision not to suspend operations on Butte Miners' Day was reached at a conference of company and union officials.

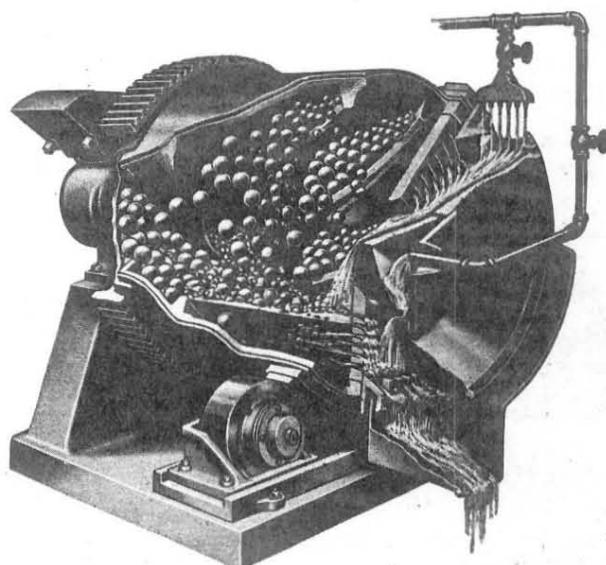
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A cutaway view of the Rib-cone Mill, with screen classifier attached. Note the high lift and perfect cascade of the ball charge. Spiral rib liners plow balls away from discharge grid.

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ings in the Navajo country of northern Arizona with Ken Garard of Monticello, Colorado, directing the work. At present the property can be reached only by car through Cortez, Colorado, and Shiprock, New Mexico, but the company will soon construct a tram across the San Juan River in Utah over which all ore will be transported, then trucked 36 miles to the new mill under construction at Monticello.

Assurance has been given the Bagdad Copper Corporation, J. W. Still, general manager, Hillside, Arizona, that an allotment will be made for construction of a road to serve the Bagdad camp, 28 miles west of Hillside. The allotment is to be made out of funds set aside to provide "access roads" to new defense plants. A \$2,500,000 expansion program, financed by an RFC loan, is under way at the Bagdad property. At first it was planned to build a spur from Hillside to Bagdad, but it is understood that consideration is being given now to a new highway, by way of Bagdad, from Kingman to a point between Wickenburg and Congress. Such a road would permit the opening of a large mineralized area now inaccessible.

The Dutchman mine five miles west of Bouse, Arizona, has been sold by Louis E. Graner, Los Angeles, to P. G. Flumerfelt of Bouse. The property consists of 24 claims and an 80-acre mill site. It has been developed by a 440-foot shaft and many drifts, exposing values in gold and copper. Immediate installation of a Ragood-Broy chemical plant for gold recovery is planned at a cost of approximately \$25,000. A leaching plant also will be built for recovery of the copper values.

The Arizona Lead Company, 160 Main Street, Yuma, Arizona, K. A. Holmes, mill manager, and George Holmes, mine manager, is mining lead ore at its Castle Dome group of claims 41 miles northeast of Yuma, and the ore is being hauled to the company's mill in the Gila Valley for treatment.

Charles H. Dunning, Route 1, Phoenix, Arizona, has leased the tailings and gleanings from the old Humboldt smelter at Humboldt, Arizona. The material includes the tailings, smelter refuse, and ore previously put aside because it was too low in value to be handled. The latter is

being shipped to the Phelps Dodge smelter at Clarkdale, Arizona. Dunning is building a 240-ton mill to regrind and refloat the tailings, of which there are some 50,000 tons available. The metallurgical laboratory of the Arizona Bureau of Mines assisted in working out the recovery process.

Capacity of the New Cornelia plant of the Phelps Dodge Corporation, Ajo, Arizona, is being increased from 22,500 to 25,000 tons per day, which will increase the copper production from the New Cornelia Branch by approximately 6,000 tons per year. The cost of the increase will be borne entirely by the corporation. A letter of appreciation for the company's

action has been received from the War Production Board. H. M. Lavender, Douglas, Arizona, is general manager of Phelps Dodge Corporation.

B. E. Joy, Box 1323, Prescott, Arizona, has been granted a \$20,000 RFC mine loan for development of his Mary D tungsten mine 12 miles southwest of Camp Wood, Arizona. The property is comprised of 10 claims.

A \$20,000 RFC mine loan has been granted to Joe H. Kline and associates of Payson, Arizona, for development of the Joelene group of tungsten claims in the Four Peaks mining district. A similar loan has been granted to Paul J., H. Grady, and Ernest R. Harrison, and Bern Swensk, all of Payson, for development of the El Oso tungsten property, three miles south of the Joelene group.

H. Grady Harrison, Tom Russell, and Tyree Trobaugh, all of Payson, Arizona, have secured a lease and option on the Ord mercury mine in the Sunflower district. A Diesel engine has been moved in to the property and both mine and mill are being placed in operation. Trobaugh has been operating the mine under a general lease with three groups of two men each working on a cooperative basis. Ore from these operations was treated in a two-tube retort on the property.

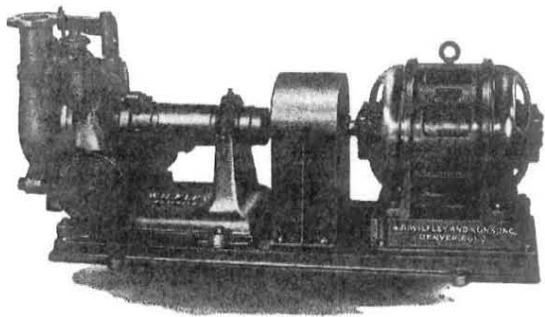


Mine buildings and homes are being moved from the Mount Tobin quicksilver property, 56 miles south of Winnemucca, Nevada, to the property of Klau Mines, Inc., Paso Robles, California. Buildings being moved include a cook house, bunk house, superintendent's house, and foreman's house. All are of frame construction and they are being transported by means of Diesel truck. The Mount Tobin mine was closed down late in February due to the exhaustion of ore bodies. Richard J. Bell, construction superintendent for H. W. Gould and Company, Mills Building, San Francisco, is directing the work. Both the Klau and Mount Tobin are Gould properties. John W. Judy is

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
1913	15.52	4.40	5.61	59.79
1914	13.31	3.87	5.11	54.81
1915	17.47	4.67	14.16	49.68
1916	28.46	6.83	13.57	65.66
1917	29.19	8.71	8.93	81.42
1918	24.68	7.46	8.04	96.78
1919	18.90	5.81	7.04	111.12
1920	18.05	8.08	7.77	100.90
1921	12.83	4.55	4.67	62.65
1922	13.67	5.71	5.74	67.52
1923	14.75	7.25	6.66	64.87
1924	13.28	8.08	6.35	66.78
1925	14.30	9.02	7.66	69.06
1926	14.05	8.42	7.37	62.11
1927	13.17	6.75	6.25	56.37
1928	14.81	6.31	6.03	58.18
1929	18.35	6.83	6.49	52.99
1930	13.23	5.52	4.56	38.15
1931	8.37	4.24	3.64	28.70
1932	5.79	3.18	2.88	27.89
1933	7.28	3.87	4.03	34.73
1934	8.66	3.86	4.16	47.97
1935	8.88	4.06	4.33	64.27
1936	9.71	4.71	4.90	45.09
1937	13.39	6.01	6.52	44.80
1938	10.22	4.74	4.61	43.22
1939	11.20	5.05	5.12	39.08
1940	11.53	5.18	6.34	34.77
1941	12.00	5.79	7.48	34.78
1941				
Jan.	12.00	5.50	7.25	34.75
Feb.	12.00	5.60	7.25	34.75
Mar.	12.00	5.77	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	34.77
Dec.	12.00	5.85	8.25	35.13
Av. 1941	12.00	5.79	7.48	34.78
1942				
Jan.	12.00	6.28	8.25	35.13
Feb.	12.00	6.50	8.25	35.13
Mar.	12.00	6.50	8.25	35.13
Apr.	12.00	6.50	8.25	35.13
May	12.00	6.50	8.25	35.13

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general mine superintendent for Klau Mines, Inc. A 20-ton Gould rotary furnace remaining at the Mount Tobin is to be moved to another property at some future date.

Directors of the Central Eureka Mining Company, C. C. Prior, president, 111 Sutter Street, San Francisco, California, have deferred dividend action "due to the emergency curtailment of supplies and the scarcity of labor, which has seriously handicapped operations." The last dividend payment was made in March 1942, amounting to 6 cents a share. From April 1940 through December 1941 dividends were on a regular 8-cent bi-monthly basis with a total of 48 cents paid last year. The company operates mining properties at Sutter Creek, California.

Final cleanup work has been completed at the property of the Virgilia Mining Corporation, Virgilia, California. Although exploration was discontinued several months ago, the ore which had been blocked and binned was run through the mill and the resulting concentrates have been sent to the reduction plant. The mine had been operating for several years and had given employment to around 120 men. William Cannon, 712 de Young Building, San Francisco, is president of the company.

Offices of the Atlas Gold Dredging Corporation, formerly located in the Edison Building, have been moved to Room 453, 727 West Seventh Street, Los Angeles, California. The company, headed by Frank E. Ford, has carried on dredging operations in both California and Oregon.

Rumors that the Golden Queen Mining Company, Mojave, California, will convert its milling plant to permit the handling of scheelite ore have been denied by W. C. Browning, general manager, 1211 Pacific Mutual Building, Los Angeles, California. The company plans to continue its gold mining operations as long as possible, or until such time as the government decides that the work should cease. However, the company is investigating reports that a number of tungsten properties in Kern County are not being operated because of a lack of facilities for treating the ore. If it is found that there is a sufficient tonnage of ore available to warrant construction of a milling plant, the company plans to add a tungsten unit to the present mill, to be operated principally as a custom plant.

Engineers for the Idaho Maryland Mines Corporation, Albert Crase, general manager, Grass Valley, California, are engaged in examining mineral deposits with a view to augmenting gold production by entry into the war minerals field. Rollin Farmin, chief engineer, has examined claims along Bear River owned by Luke Williams and others, and a chrome deposit on Champion ground below Nevada City also has been investigated. However, no options have been taken yet. The New Brunswick mill has been closed down pending completion of new concrete ore bins and other surface improvements. The New Brunswick ore is hoisted through the Old Brunswick shaft and trucked to the Idaho Maryland mill for treatment.

The Lost Camp Mining Company, operating in Blue Canyon near Auburn, California, expects to hydraulic approximately 200,000 cubic yards of gravel this season. Two monitors are in operation. With a good supply of water available, the hydraulicking season is expected to extend into June. V. P. Maxwell, Box 666, Napa, California, is secretary of the company.

Leo J. and Clarence Cooley, Nevada City, California, have opened up two ledges on their property, the Tennessee Flat mine, 12 miles northeast of Nevada City. The ledges vary in width from four inches to four feet. The sulphide base ores are high in free gold, values running from \$6 to \$50 a ton. The veins were encountered in the 500-foot shaft, sunk recently. The

property is comprised of 123 acres of patented land and two claims.

F. E. Denton of Blairsden, California, is carrying on dragline operations on property along Jamison Creek in Plumas County. George J. Flach, 130 Sutter Street, San Francisco, is interested in the project.

The Victory Chrome Company, Charles Hopper Brown, manager, Box 326, Auburn, California, has made application to the California Division of Water Resources for a permit to divert two cubic feet of water per second from Sugar Pine Canyon and Mountain Chief Creek, tributary to the North Fork of the American River. Work is nearing completion on construction of a washing plant for the company,

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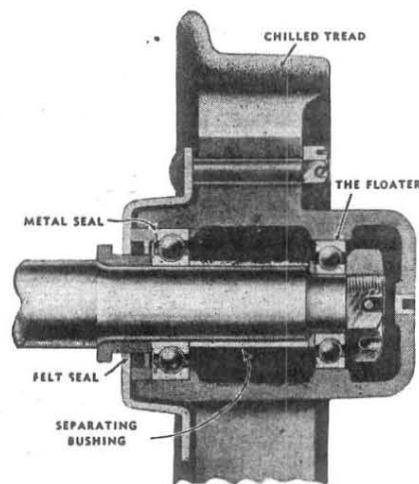
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Zack Anderson, Box 162, Middleton, California, owner and operator of the Oat Hill Extension quicksilver mine, has been authorized to divert 0.25 cubic foot of water per second from James Creek at an estimated cost of \$3,000.

Robert W. Kelso, Bishop, California, plans construction of a mill to treat ore from his tungsten property in Shannon Canyon near Bishop. He has made application for a permit to divert 0.375 cubic foot of water per second from Shannon Canyon Creek, tributary to the Owens River Valley.

All equipment of the Sierra Consolidated Mines, Inc., at the Silverado mine in the Sweetwater district of California, with the exception of the power plant and the 22-mile power line, has been sold to the United Pipe and Machinery Company, 925 Del Paso, North Sacramento, California. Included in the sale is a 150-ton flotation-cyanide plant together with the mine and mill buildings and mining and milling equipment. According to Samuel Platt, Box 1063, Reno, Nevada, secretary of Sierra Consolidated, the mill was too large for the volume of ore available for treatment, and it is understood that the directors have under consideration the installation of a smaller plant to treat ores remaining in the mine and on the dumps.

The McCormick mine property in Tuolumne County has been purchased at tax sale by Frank Paradis, 1110 Ninth Street, Modesto, California. The property formerly was held by M. McCormick Company of Stockton, California.

The new 100-ton chrome concentrating plant of the Castro Chrome Associates, San Luis Obispo, California, has been completed and placed in operation. The plant, built at a cost of \$60,000, has been under construction for the past three months, and for the past two months ore has been hauled from the mine to the stockpile near the plant. It is estimated that approximately 50 tons of concentrates will be produced daily. L. E. Putnam is superintendent for Castro Chrome Associates.

Natomas Company, Thomas McCormack, president, Forum Building, Sacramento, California, has declared the regular quarterly dividend of 25 cents a share on

capital stock, payable July 1 to stock of record June 12. The company operates seven dredges in the Folsom district.

Construction is progressing on the new 600-ton reduction plant for the Gray Eagle Copper Company, seven miles north of Happy Camp, California, with a crew of 50 men employed. Concentrates from the new plant are to be trucked 90 miles over the Klamath River highway to Yreka, California, for shipment by rail to a Utah smelter. Mining has been resumed in the main workings and plans have been completed for additional development from the lower levels. The Gray Eagle, embracing 32 claims, is said to contain approximately 1,500,000 tons of ore averaging 6 per cent copper with substantial values in gold.

A new shaft is being sunk on the East vein of the Diltz mine, 10 miles northeast of Mariposa, California. The new development is about 200 feet east of the old workings and the shaft now is down more than 75 feet. The formation and mineralization are said to be identical with that encountered in the earlier workings, which proved to be exceptionally good. It is estimated that three months will be required to sink the shaft to the desired depth. The mill has been operating intermittently on ore taken out as development proceeds. The property is operated by Earl R. Baker, Mariposa.

The 60-ton amalgamation-flotation mill of the Brown Bear Mining and Development Company, in the Deadwood district near French Gulch, California, is operating at capacity on dump ore. The dumps are reported to contain more than 100,000 tons of commercial material and substantial reserves are said to have been located underground. Work is progressing on exploration and development of promising ground in the main levels. Old workings were reconditioned last year following reopening of the property after a long period of idleness. J. R. Westlund, Lewiston, California, is general superintendent at the mine. The company is headed by Dr. S. A. Jelte, president, 703 Central Bank Building, Oakland, California.

Secretary of the Interior Harold L. Ickes has authorized Basic Magnesium, Inc., to extract salt from fields in the Death Valley National Monument in California by waiving the ban on commercial

exploitation of an area under national park service regulations. The salt to be mined in the Death Valley region will be used by the company in the production of magnesium at its new plant under construction near Las Vegas, Nevada. H. C. Mann of Las Vegas is project manager for the company. Headquarters for the firm are at 845 Hanna Building, Cleveland, Ohio.

COLORADO

Legal difficulties are reported to have been settled, leaving the Rogers tungsten properties near Boulder, Colorado, clear and the ground has been opened for leasing. Joseph H. Rodgers, who has offices in the Sullivan Building, Boulder, has been appointed agent for the Rogers ground. Leases on several claims in the group have been let to the Slide Mines, Inc., of which Rodgers is general manager.

According to reports, the United States Vanadium Corporation is planning the immediate construction of two 150-ton vanadium mills, one at Grand Junction and the other at Durango, Colorado. The company already operates a 300-ton plant at Uravan and a 200-ton vanadium plant at Rifle, Colorado; a 1,300-ton plant at Bishop, California; and is building a 100-ton chemical refinery at Salt Lake City, Utah, under agreement with the Defense Plant Corporation. The plant at Durango will be on the site of the old AS&R smelter, equipment from which was sold and dismantled some time ago, and production is expected within three months. C. J. Moynihan, Jr., will be chief clerk of the Durango unit. Blair Burwell of the New York office is general superintendent of the company's operations which include the production of vanadium, uranium, and tungsten ores from claims in California, Colorado, Nevada, and Utah; and chrome production from Red Lodge, Montana.

C. M. Lyon of Idaho Springs, Colorado, is reopening the Paymaster mine near Idaho Springs and plans to ship ore shortly to the Silver Spruce mill in the same area. The Paymaster tunnel is being regraded

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Increased 1 cent per unit for each 1 per cent increase in manganese content over 45 per cent. These prices are for free deliveries discharged onto stockpiles at Laredo or El Paso, Texas, or Nogales, Arizona. The present charges for delivering ore to stockpiles are:

	Laredo	El Paso
Switching, per car	\$7.70	\$3.96
Weighing, per car	2.76	2.76
Loading, per natural long ton	0.60	0.45
Sampling and analysis, per dry long ton	0.25	0.25

At Laredo, there is an additional switching charge of \$4.40 if fumigation is required by the U. S. Department of Agriculture. This charge is subject to change. The U. S. duty and one-half the charge for sampling and analysis will be paid by Metals Reserve Company as buyer while all other charges are for account of the shipper.

In regard to Mexican tungsten, Metals Reserve Company will enter into minimum contracts for 1,000 short-ton units of contained WO_3 , deliverable in lots of not less than 5 short tons of ore or concentrates, packed in suitable containers.

The base price per short ton unit of contained tungsten trioxide (WO_3), delivered f.o.b. railroad cars at the plant of Wab Chang Trading Corporation, Staten Island, New York, or at such other point in the New York area as Metals Reserve Company may designate, varies with the percentage of WO_3 content as listed in the table below. These prices are subject to penalties for detrimental elements.

Per Cent of Tungsten Trioxide (WO_3)	Scheelite Ores and Concentrates	Wolframite Ores (Hubnerite-Ferberite) and Concentrates
85 and over	\$21.00	\$21.00
84	21.00	20.95
83	21.00	20.91
82	21.00	20.86
81	21.00	20.82
80	21.00	20.77
79	20.91	20.68
78	20.82	20.59
77	20.73	20.50
76	20.64	20.41
75	20.55	20.32
74	19.46	19.23
73	19.37	19.14
72	19.28	19.05
71	19.19	18.96
70	19.10	18.87
69	19.01	18.78
68	18.92	18.69
67	18.83	18.60
66	18.74	18.51
65	18.65	18.42
64	18.56	18.33
63	18.47	18.24
62	18.38	18.15
61	18.29	18.06
60	18.20	17.97

If a shipment consists of mixed scheelite and wolframite, it will be classified under the scheelite schedule if its WO_3 content is predominantly scheelite, and under the wolframite schedule if its content is predominantly of the wolfram type.

Following are the penalties charged on detrimental elements in the case of scheelite ores and concentrates:

Detrimental Element	Amount	Penalty per Short Ton Unit WO_3
Arsenic	Over 0.5%, but less than 1%	\$0.15
	Over 1%	0.30
Sulphur	Over 1%, but less than 1.5%	1.00
	Over 1.5%	1.25
Copper	Over 0.2%, but less than 0.5%	1.00
	Over 0.5%	1.25
Tin	For each 0.1% above 0.5%	0.03

In the case of wolframite (hubnerite-ferberite) ores and concentrates, the following penalties are levied:

Detrimental Element	Amount	Penalty per Short Ton Unit WO_3
Arsenic	Over 1.0%, but less than 1.5%	\$0.15
	Over 1.5%, but less than 2.0%	0.20
	Over 2.0%, but less than 3.0%	1.00
	Over 3.0%	1.25
Sulphur	Over 1.5%, but less than 2.0%	1.00
	Over 2.0%	1.25
Copper	Over 0.8%, but less than 1.6%	1.00
	Over 1.6%	1.25
Tin	For each 0.1% tin above 1.5%	0.03

Requests for contracts for both manganese and tungsten ores should be sent to Metals Reserve Company, Apartado Postal 590, Mexico, D. F., and should include the name of applicant with business references, and a statement of experience in connection with mining. Also required is a description of the mining property from which the production is to be obtained, data to show that the ore is available or can be made so, and a statement of the tonnage offered for sale, rate of delivery, complete analysis, location of ports from which shipments will be made, and the port of entry into the United States.

Metals Reserve Company reports that it occasionally receives inquiries relative to the disposal of Mexican antimony ore. While Metals Reserve is not buying antimony at present, the following concerns will purchase these ores:

Texas Mining and Smelting Company, Laredo, Texas;

American Smelting and Refining Company, Monterrey, Mexico;

Harshaw Chemical Company, El Segundo, California;

Metals Traders, Inc., 67 Wall Street, New York, New York;

Overseas Trading Agency Company, 15 Williams Street, New York, New York;

Phillips Brothers, Inc., 70 Pine Street, New York, New York.

When a sales contract for antimony ore is negotiated, it is necessary to obtain a clearance under Import Order No. M-63 from H. P. Henderson, chief, Antimony Section, Tungsten Branch, War Production Board, Washington, D. C.

CARSON HILL CORPORATION CLOSES DOWN AFTER MILL FIRE

A SKELETON crew will be maintained at the property of the Carson Hill Gold Mining Corporation, Melones, California, to keep the mine unwatered and to carry on maintenance work, according to a statement by Lawrence MonteVerda, vice-president. The 1,000-ton mill at the property was destroyed by fire recently, necessitating a shutdown.

Although no decision has been made as to rebuilding, it is not likely that materials can be obtained for such a step at this time. "There is a large quantity of ore in the mine," declared MonteVerda, "and if we could get materials, the mill warrants rebuilding." It is understood that the plant will be rebuilt as soon as possible.

The fire was confined to the mill proper and no other buildings were damaged. Loss is estimated at \$400,000. The plant included 30 one-ton stamps, three pebble mills, one ball mill, three tube mills, and 48 concentrating tables. Approximately 200 men were thrown out of work by the mine shutdown.

WPB STARTS DRIVE FOR MINE LABOR-MANAGEMENT GROUPS

ESTABLISHMENT of local labor-management committees throughout the non-ferrous metal mining areas has been started by the War Production Board as an extension of its drive into the non-ferrous metal mining industry in an all-out effort to step-up production of base metals, according to an announcement by WPB Chairman Donald M. Nelson. To facilitate the program, the WPB materials division has formed a non-ferrous metals committee to integrate the work of the copper, lead, and zinc branches and work jointly with the labor production division in the formation of the labor-management or "victory" committees.

A. I. Henderson, director of the materials division, reports that H. O. King, chief of the copper branch, George Heikes, chief of the zinc branch, and Erwin Vogelsang, chief of the lead branch, will make up the personnel of the non-ferrous metals committee. King will be chairman. Henderson stated that he expects labor-management committees to be functioning in all the non-ferrous metal mining areas at an early date.

The drive was launched at a joint labor-management rally on June 13 (Miner's Day) at Butte, Montana, center of an important copper and zinc producing district. The program being established puts into effect many of the recommendations submitted to the WPB by the Mine, Mill and Smelter Workers Union (C.I.O.) in its "Production for Victory" plan. Wendell Lund, director of the WPB Labor Production Division, states that labor groups, both in the C.I.O. and A. F. of L., are enthusiastic in their support of the plan and that their "cooperation in the production drive is assured."

Participants in the send-off rally at Butte included officials of the Anaconda Copper Mining Company, the International Union of Mine, Mill and Smelter Workers, and the various craft unions in the mining industry affiliated with the American Federation of Labor. Representatives of the materials and labor production divisions of the War Production Board also were present.

VANADIUM STOCKPILES STARTED BY UNITED STATES VANADIUM

ACTING as agent for the Metals Reserve Company, the United States Vanadium Corporation is reported to have started stockpiles for vanadium ore at Moab and Thompsons in Grand County, Utah, at Gateway in Mesa County, Colorado, and Dove Creek in Dolores County, Colorado. The plan is designed to encourage development of small properties not now producing and to provide a reserve supply of vanadium ores.

Grinding and sampling equipment will be installed at Moab and producers will be paid for their ore upon delivery. H. W. Balsey of Moab will handle purchases there. At Thompsons, J. F. Brenton and Vern Perry have been named to handle purchases.

RFC REVISES DEVELOPMENT MINE LOAN PROCEDURE

The Reconstruction Finance Corporation has revised its mine loan procedure to provide for preliminary development loans of not to exceed \$5,000 to finance unwatering, retimbering, making accessible, sampling, and assaying of ores when it appears that such a loan will be advantageous to the national defense and will warrant a larger Class B development loan. The new procedure is outlined in a supplement to RFC circular 14 which has just been issued.

The purpose of the preliminary development loan is to facilitate a more rapid expansion of production of strategic and critical materials at small mining properties. Those desiring to apply for one can obtain the necessary blanks and full information from the Washington, D. C., office of the RFC or from any of its loan agencies.

An applicant must be a U. S. citizen, partnership, or corporation and the owner or lessee of record of the mining property. Examination of the mine will be made by the RFC, and, if a loan is authorized, the only security required is a note payable out of the production proceeds. However, a chattel mortgage may be demanded to secure any equipment purchased with loan funds.

All available information regarding the property should be given by anyone seeking a loan, together with maps, a proposed plan of development, and cost estimates. All applications are filed with the RFC Washington office.

MONTANA BRINGS TO DATE DIRECTORY OF ITS MINES

The State of Montana has brought up-to-date "Memoir 20," which is the directory of mining properties in the state. The directory was published in 1940 and was a cooperative publication of the Montana Bureau of Mines and Geology, the Montana School of Mines, the Mining Association of Montana, and the Mineral Resources Survey. The latter, being a WPA project, furnished most of the workers that compiled and printed both the 1940 directory and the 1942 supplement. The original directory and the supplement were compiled mainly under the direction of Carl J. Trauerman, former supervisor of the project. Cecil R. Waldron, present supervisor, wrote the introduction for the new supplement. Roy H. Earhart is assistant supervisor.

There was a large demand for "Memoir 20" both in the United States and abroad, and those who purchased copies of it will receive a free copy of the 1942 supplement within a short time. If supplements are not received by owners of "Memoir 20" they should apply for a copy at the president's office, Montana School of Mines, Butte, Montana. A limited number of copies of "Memoir 20" are available at \$1.00 a copy, which price includes the supplement.

"Memoir 20" contains detailed information on some 500 Montana mining properties and detailed maps of 28 counties, showing mining districts, roads, trails, and

towns. The publication contains four indexes and a map of Montana showing areal distribution of the various mineral resources in the state. One of the indexes in "Memoir 20" and in the supplement gives a list of all the individuals mentioned in the publications.

DELTA TAILINGS COMPANY HAS INTERESTING OPERATION

MATERIAL once mined for its gold content in the early days of quartz mining near Jackson, California, is being treated again to secure the gold left by the previous operators. The Delta Tailings Company, composed of Glenn T. O'Brien, Sutter Creek, California, and F. A. Beauchamp and F. E. Woodworth of San Francisco, is operating a cyanide plant on Jackson Creek near Ione, California.

When the quartz mines first operated in California the tailings were allowed to flow down the creeks. Along a certain area of Jackson Creek south of Ione these tailings settled, filling the old channel and spreading out over the adjacent fields to a depth of about 2½ feet. In 1934 O'Brien decided to undertake the treatment of the tailings. Woodworth and Beauchamp, cyanide plant experts, entered into the project with him and in April 1935 they started construction of a cyanide plant which went into operation in August of the same year.

Gold-bearing sands adjacent to the cyanide tanks were treated first, but as the recovery machinery progressed down the creek to the point where the material was spread over a large area, the company was faced with the problem of getting the sands to the processing plant. The problem was worked out in an interesting and unusual manner.

A Caterpillar with giant carryalls scrapes up the material from the fields and takes it to a large grizzly screen where rocks, limbs, and other materials larger than eight inches are taken out. The sands then go into a feeder and onto a belt which carries them to a pulper. A vibrating screen eliminates all substances larger than ¼ inch and from there the sands go to a pump which starts them on a 1½-mile course through a 6-inch pipe line to the cyanide plant. They pass through one more pump before reaching the plant.

The pumps, originally built to send out 360 gallons of water a minute at a pressure of 45 pounds per square inch, were adjusted to pump 720 gallons a minute at 125 pounds pressure.

Upon reaching the plant, the material is sent first to the tower in which the classifier is located. There the sands are separated from the slimes, the former going to the leaching vats and the latter to a counter-current thickener system. In both places the gold is dissolved by the cyanide process. The solution is then collected and taken to a precipitation plant where the gold is recovered.

The plant is comprised of ten 12 by 40-foot leaching tanks, four 12 by 50-foot thickener tanks, three 14 by 24-foot agitator tanks, and other smaller ones for solution storage. The firm has several years of operation ahead of it.

Metal and Mineral Prices

METALS	
Aluminum, per lb. f.o.b. New York, 99.98%	15c
Antimony, per lb. f.o.b. Laredo, Texas, domestic, bulk	14.50c
Bismuth, per lb. in ton lots, f.o.b. New York	\$1.25
Copper, per lb., electrolytic, f.o.b. Connecticut Valley	12c
Export f.a.s. New York (in bond)	11.75c
Gold, per ounce, United States market	\$35
Lead, per lb. f.o.b. New York	6.50c
f.o.b. East St. Louis	6.35c
Magnesium, per lb. 99.95%	
in ingots, l.c.l.	24.5c
in carloads	22.5c
Manganese, per lb., 96-98% f.o.b. New York	40c
Molybdenum, per lb. in 10 to 49 lb. lots, 99%	\$2.60-3.00
in ferro-molybdenum	95c
in calcium molybdate	80c
Nickel, per lb. electrolytic cathodes	35c
Platinum, per oz., refined	\$34.50-36.00
Quicksilver, per 76-lb. flask f.o.b. far western shipping points	\$191
Silver, per oz., f.o.b. U.S. Mints	71.11c
World price, f.o.b. N. Y.	35.125c
Tin, per lb. f.o.b. N.Y., 99%	52c
Tungsten, per lb., in ton lots 98% to 99%, powdered	\$2.60-3.00
Zinc, per lb. f.o.b. East St. Louis, prime Western	8.25c
ORES OF METALS	
Antimony Ore, per unit, c.i.f. Atlantic ports, 50 to 60% Sb.	\$2.00-2.05
65 to 73% Sb.	\$2.25-2.35
Beryllium Ore, per ton, f.o.b. mines, minimum 10% BeO	\$30
minimum 12% BeO	\$35
Chrome Ore, per long ton at domestic mines, 45% Cr ₂ O ₃ , carload lots	\$40.50
Galena, per short ton, f.o.b. Joplin, Mo., average settling price 80%	\$76.55
Manganese Ore, Domestic, per long ton at mines, carload lots	
43%	\$48
44%	\$35.20
40%	\$25
35%	\$19.50
Molybdenum Ore, f.o.b. mines maximum 0.65% Cu: Per lb. contained MoS ₂ , minimum 90 concentrate	45c
Tungsten Ore, per unit WO ₃ , domestic	
Scheelite, 60%, f.o.b. New York	\$24
Wolframite, Hubnerite, Ferberite, 65%, f.o.b. New York	\$24
Hubnerite, f.o.b. Tucson	\$22
Vanadium Ore, per lb. V ₂ O ₅ contained, f.o.b. mines, minimum 9% concentrate	27.5c
Zinc Blende, per short ton, f.o.b. Joplin, Mo., average settling price 60%	\$55.28
NON-METALLICS	
Barytes, per long ton, f.o.b. Georgia mines, bags extra, Crude	\$9
Borax, per ton, contract, in bags	\$48
in barrels	\$51
Diatomite, per ton, f.o.b. mines Nevada, crude, dried in bulk	\$7
High temperature	\$30
Feldspar, per ton, f.o.b. North Carolina, 200 mesh white potash feldspar, in bulk	\$17
Soda feldspar	\$19
Fluorspar, per net ton, f.o.b. Kentucky and Illinois mines	
Metallurgical grade, minimum 85% CaF ₂ , and maximum 5% SiO ₂	\$23-25
Colorado, f.o.b. mines, minimum 82% CaF ₂ , and maximum 6% SiO ₂	\$16.50
Gilsonite, per ton, f.o.b. Colo. mines Brilliant black	\$22.90
Selects	\$30.50
Seconds	\$25.50
Mica, per ton, f.o.b. New Mexico, scrap, white	\$16
Potash, per unit K ₂ O, Domestic muriate, 80-97 per cent KCl	58c
Manure salt	60c
Quartz Rock Crystals, per ton, for fusing, all sizes	\$100-150
(Prisms for piezo-electrical and optical use command premium.)	
Sulphur, per long ton, f.o.b. Texas mines for domestic market	\$16

The above prices are for large lot shipments and regular contracts. Small lots purchased f.o.b. mines in west range from 25 to 40 per cent less.

Quotations on foreign ores show wide variations because of shipping difficulties due to the war.

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The Arizona quicksilver mine in the Sunflower district northeast of Mesa, Arizona, also known as the Saddle Mountain mine, has been sold by T. J. Long, Globe, Arizona, to Shirley D. Parker of Yakima, Washington, and 716 North Palm Drive, Beverly Hills, California. The shaft is to be sunk an additional 100 feet and extensive development work also is planned. The mine is expected to be on a production basis very shortly. Arthur J. Theis, who is associated with Parker in the Boaz mine in Montana, will be in charge of operations. Vic L. Smith of Parker, Arizona, and P. J. Flumerfelt of Bouse, Arizona, were associated with Parker in closing the deal.

G. T. Alley, Box 1007, Ajo, Arizona, and associates, who for the past two years have been carrying on development work at the 85 mine, have uncovered a 20-foot vein which runs one-half ounce gold and 4 per cent copper. The property also has a large vein carrying 3 per cent molybdenum. The mine is equipped with a small mill and ample water has been developed. A drill hole is reported to have shown 16 per cent copper at 180 feet. The property is comprised of 12 claims.

Dye and Bathrick, Box 1069, Kingman, Arizona, are engaged in opening up the old Copper Giant mine south of Hackberry, Arizona. According to Raymond L. Dye, the road to the property is being improved to facilitate the transportation of ore from the mine to the highway. Ore shipments are expected to begin shortly.



Directors of the Lava Cap Gold Mining Corporation, Nevada City, California, have declared a dividend of 2 cents per share, payable June 30 to stockholders of record June 20. Otto E. Schiffner is general manager of the company.

Argonaut Mining Co., Ltd., Alex F. Ross, superintendent, Jackson, California, reports a net profit of \$998 for the four months ended April 30, 1942. Net profit includes other income of \$8,737, principally dividends and interest from security holdings, and is after \$5,643 Argonaut shutdown expense. Comparative figures for the corresponding period of last year are not available. All mining operations were discontinued as of March 31, last, and the company now is carrying on only the cyanide operations at the Plymouth tails plant. During the four months ended April 30, Argonaut mined 18,100 tons and milled 18,200 tons of ore. During the first quarter of 1941 the company mined 25,300 tons and milled 25,000 tons of ore. Receipts in the January-April period of this year averaged \$8.99 a ton as against \$7.13 a ton in the first three months of last year. Costs per ton were \$8.283 and \$6.93, respectively.

Ragooland-Broy Laboratories, Philip J. Ragooland, general manager, 754 Natoma

Street, San Francisco, California, has leased ground near Forks of Salmon, Siskiyou County, California, from Frank A. Treyer. Values are in gold, platinum, and strategic minerals. The placer concentrates will be treated in the company's laboratory in San Francisco. L. M. Thornburgh is superintendent at Forks of Salmon.

The Green Mountain Copper Company, C. C. Kellogg, manager, Mariposa, California, is reported to be shipping considerable copper ore. Because this is a new operation, the company will receive the copper bonus which brings the price to 17 cents per pound.

Additional ore bodies are reported to have been opened up in the Royal mine near Milton, California, where a diamond drilling program has been in progress. The 30-stamp mill is running steadily on ore from the main workings and it is planned to continue operations on a normal basis unless war conditions prevent. The mine is owned and operated by Frank S. Tower of Milton.

It is reported that the property of the Little Butte Mining Company on Little Butte Creek near Magalia, California, has been closed down for the duration of the war. The mine, owned by Herbert Whitten of Chico, California, has been operated intermittently for the past four years. It is equipped with a quartz mill and flotation units. The Little Butte company is headed by Dr. D. W. Babcock of Placerville, California.

The Basin Montana Tunnel Company, Allan A. Ryan, Jr., president, 1 East Fifty-seventh Street, New York, has purchased from Metal Mining Exploration Company, John A. McDonald, president, 912 Russ Building, San Francisco, an agreement for purchase of the controlling stock in Aetna Quicksilver Mines, Consolidated, owner of the quicksilver mines near Aetna Springs, California, and an agreement for purchase of the J. F. Knapp lease and option on the mine. The purchase carries with it an option to reassign the agreements to Metal Mining Exploration Company. Gerald Sherman, consulting engineer for the Basin Montana company, is directing work at the property, and George I. Barnett, one of the principal stockholders in the Aetna company, is temporarily in charge at the mine. The Basin Montana company also has purchased and optioned from Metal Mining Exploration an extensive tungsten property in the Ruby Mountains, Elko County, Nevada, and development is under way.

P. S. Runels, 527 West Fesler Street, Santa Maria, California, and associates, Ulah E. Smith and John A. Allamariano, both of Santa Maria, are opening up a manganese property which is reported to assay 49 per cent. It is planned to have the property on a production basis during June.

The three gold dredging plants operated by William Richter and Sons, Oroville, California, have been forced to close down due to inability to obtain repair parts. The dredges have been operating at Honcut, Concow, and Downieville.

N. G. Simpson, H. B. Miller, and N. G. Lynch are working the old **Gold Coin** claim near Randsburg, California. Pannings from previously unexplored portions of the old channel are said to have shown values in both gold and tungsten. The material is handled by a dragline and the operators are proceeding with an undershot jig, powered by electricity, using water from the Big Butte.

COLORADO

During the month of May the **Vindicator** mine of the **United Gold Mines Company** at Cripple Creek, Colorado, is reported to have shipped about 1,500 tons of ore. Shipments were made by the Dan P. Jones lease, T. E. Wade and Company, Tom Carter and associates, A. E. Reilley lease, and the Anna J. Leasing Company. The No. 1 screening plant at the mine produced four carloads of material and the No. 2 plant produced 37 cars, a car averaging 50 tons.

The **Capital Prize** mine in Clear Creek County near Georgetown, Colorado, is being cleaned out to permit sampling operations, it is reported. The tests will be made under the direction of J. P. Ruth, Jr., Continental Oil Building, Denver. The property, an old gold producer, has been idle in recent years. A few years ago it was operated by the Griffith Leasing Com-

pany under the general management of W. E. Walthers of Georgetown, who is understood to own the mine.

After a two-year development program, Joseph Verce of Durango, Colorado, is ready to start production from his **Golden Boy** mine in the La Plata district near Hesperus. Principal values are in lead.

The **Boulder Tungsten Mills, Inc.**, has been sampling and buying custom ores and now has started milling operations in its new 50-ton custom plant on North Boulder Creek two miles northeast of Nederland, Colorado. Raymond G. Sullivan of Boulder is vice-president and general manager.

Capacity operations will be started shortly by the **General Chemical Company** which recently put its flourspar concentrator into operation. The company operates the Yellow Girl, Chancellor, and Burlington flourspar mines at Jamestown, Colorado, and rehabilitated the Valmont mill to treat its ores. The company, with headquarters at 40 Rector Street, New York, conducts mining operations in Colorado, Missouri, Virginia, and New Mexico. Robert H. Dickson of New York is in charge of the company's mining department. Wilbert J. Trepp is in charge of operations at Boulder and Jamestown.

A 100-ton custom mill for lead, zinc, and copper ores will be built and operated at Ouray, Colorado, by the Denver Equipment Company, Arthur C. Daman, 1419 Seventeenth Street, Denver, president and general manager. For over a year the equipment concern has been testing the ores

from the Ouray district. The mill will be erected on the site of the old Wanakah smelter and is expected to be in operation by September 1 of this year. The same interests are operating the **Pride** of the West mine and mill at Silverton.

The **Timberline Dredging Company** has completed raising its No. 1 dredge near Fairplay, Colorado, and expects to be ready to continue work shortly. E. J. Cunningham, Engineers Building, Denver, is general manager of the company which holds a portion of the Snowstorm placers between Fairplay and Alma. H. J. Ackley, Fairplay, is superintendent. The No. 1 dredge handles around 4,000 yards daily. The company's newer dredge, the No. 2, in the same area handles about 10,000 yards of material daily.

By July 1 the Portland No. 2 shaft of the **United Gold Mines Company** at Cripple Creek, Colorado, will be connected with the Carlton tunnel and ready for operation. A 118-foot raise was put up from the Carlton tunnel to the winze level and a 60-foot crosscut on that level brought operations to a point directly under the Portland No. 2 at a horizon which will be opened as the 3,100 level of the Portland mine. After the station on the 3,100 is completed, an 85-foot raise will be put up to connect with the present sump of the Portland No. 2 shaft. When this is completed the shaft will be 3,250 feet deep and will extend from the top of Battle Mountain to the Carlton tunnel. A. H. Bebee of Independence is general superintendent of the United Gold Mines.

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MEXICAN SUPREME COURT RULES ON TWO MINE ISSUES

MINING companies in Mexico are benefited by a federal tax application ruling handed down by the national supreme court in favor of Cia. Minera Tepic, S. A., Madero, 55, Mexico, D. F., whose properties are worked by the American Smelting and Refining Company. The court granted the Tepic company an injunction restraining the ministry of finance from collecting four fines imposed for alleged violation of the income tax law. It was claimed that Tepic had failed to include in its income tax declaration payments made by the American Smelting and Refining Company for use of its properties in 1935.

The court ruled that the ministry had erred because A. S. and R. had paid the income tax on Tepic's properties in 1935 and that this payment had been deducted from the amount received by Tepic. The court sustained the proposition that it is lawful for lessees of mine property to pay the income and other taxes for the lessors.

In another decision handed down recently, the court upset the federal law enacted November 1, 1937, which provides that teachers employed in schools which must be maintained by industrial and agricultural companies for employes' children shall be regarded as regular employes of the companies and shall be paid by the companies.

The court granted an injunction to 16 mining, oil, and industrial companies against enforcement of the measure. The

mining companies included in the group are American Smelting and Refining Company, Cia. Minera Asarco, S. A., Cia. Metalurgica Mexicana, Cia. Minera Kildun y Anexas, Cia. Carbonifera de Sabinas, and Cia. Minera de Zaldo Hermanos y Cia. Injunction suits against the measure have been in the Mexican courts for some time.

REVISED EDITION OF MINES REGISTER BEING DISTRIBUTED

THE 1942 edition of the Mines Register, a compendium of non-ferrous metal mines and their operations in the western hemisphere, is now ready for distribution. The new issue is a complete revision of the 1940 edition, and contains descriptions of approximately 4,000 active mines and lists 22,000 inactive ones.

Following the procedure of the 1940 issue, the mining companies are listed alphabetically. Each report contains a short history of the company, its financial structure, a description of its mining properties and equipment, and the names of officers.

A new section has been included in which all active mines are listed according to their geographical location. Other features include alphabetical lists of officers and directors of the companies, mining and consulting engineers, superintendents, and purchasing agents, and manufacturers and distributors of mining machinery and supplies.

The price of the Mines Register is \$15. Copies can be obtained from the book department of The Mining Journal, Phoenix, Arizona.

SURVEY MADE OF CHROMITE IN OREGON MARINE SANDS

A REPORT on the tonnage explored and the importance of chromite-bearing black sands in the Coos Bay district has been released by the Oregon State Department of Geology and Mineral Industries and the U. S. Geological Survey.

The estimates of tonnage are based on results of field exploration by churn drilling and test pitting during 1941, mainly under a WPA project sponsored by the Oregon department in cooperation with the U. S. Geological Survey. Only three general areas of back-beach deposits, about seven to nine miles north of Bandon in Coos County, Oregon, were explored. Forty-four holes were drilled with an Empire drill, eight holes were put down with a standard Keystone-type drill, and 35 test pits were sunk.

Estimates of tonnage of chromite have been listed under three classifications—proved, probable, and possible. Of the proved tonnage of chromite there is reported an estimated 239,100 long tons of 7.6 per cent Cr₂O₃, equivalent to 45,739 long tons of 40 per cent Cr₂O₃; under probable tonnage 104,039 long tons of 7.1 per cent Cr₂O₃, equivalent to 18,104 long tons of 40 per cent Cr₂O₃, have been listed; and under the classification of possible tonnage, 196,220 long tons of 5.8 Cr₂O₃, equal to 28,452 long tons of 40 per cent Cr₂O₃, are reported.

The figures given do not relate to the present ocean beach, according to the de-

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Production at the Spanish mine, Washington, California, is to be stepped up to 100 tons of barite ore per day during the month of July. This mine has been under lease for the past four years to the Industrial Minerals and Chemical Company, Reynold J. Penrose, superintendent, Washington. A crew of 10 men was employed last winter in repairing a tram line 7,500 feet in length from the upper to the lower mine. A main haulage tunnel 175 feet long was run to tap the ore at the lowest point in the present development. The contracts for 1942 production require from 15,000 to 20,000 tons. A camp, boarding house, power lines, and water system were constructed and installed last winter. A crew of 30 men is employed at present.

The Santa Anita Mining Corporation of Los Angeles, California, is reported to be opening up a quicksilver mine 12 miles south of Idria, California, in Fresno County. A road has been completed and an oil tank hauled in prior to installation of a rotary furnace. Work at present is under the direction of Clyde Beaver and a crew of 10 men is employed.

Two carloads of zinc ore have been shipped from the Collier mine at Telegraph City, California. The mine is operated by Ernest A. Vogt, Sutro and Company, 407 Montgomery Street, San Francisco, who is employing eight men working on two shifts daily.

The Gray Eagle Copper Company, operating the Gray Eagle group, near Happy Camp, California, is preparing to erect a long aerial tramway over the mountains to Thompson Creek in order to eliminate a 19-mile haul. Construction of a 23-mile power line has been completed from Seiad Valley to the property, and installation of the 600-ton concentrating plant is progressing rapidly. Robert J. Hendricks, Happy Camp, is manager and Arthur Swanson also of Happy Camp is general superintendent at the mine.

A request for a \$20,000 loan to aid in development of the Red Mountain magnesite mine near Patterson, California, has been submitted to the Reconstruction Finance Corporation. The Red Mountain was opened in 1941 and has been retimbered. New roads have been constructed, and 1,500 feet of rail have been laid in the mine tunnel. The mine is owned by the Magnesite Products Company, Financial Center Building, Oakland, California.

The Lava Cap Gold Mining Corporation, Otto E. Schiffner, general manager, Nevada City, California, has announced a raise in wages of 8 cents per hour for all employees. This wage increase gives a base rate for miners of \$6.48 per day, and \$6.00 for muckers, with time and a half for overtime. Due to the loss of men to defense industries the Lava Cap has cut its production from 400 tons daily to 300

tons. Only one of the two large ball mills is in operation now. The present number of employes is 235, compared to a peak of 350.

The 200-ton mill at the property of the Volo Mining Company west of Placerville, California, which recently has been converted from a gold to a chrome treatment plant, is handling a large tonnage of the strategic ore daily. Since October 1941, some 7,000 tons of gold ore from the old Shaw mine have been treated. Fifteen men are employed at present, and with increased production 40 to 50 men will be employed. The company will treat custom ore at Placerville, and also will handle the shipment of raw chrome ores to the stock-

pile at Sacramento. Volo has a contract with the Metals Reserve Company for 10,000 tons of concentrate or ores carrying sufficient chrome content. Several months ago the company took over the Riverview property north of Placerville. At present a crew of two is working in a 225-foot crosscut tunnel, and will drive another 80 feet. F. V. Phillips of Placerville is president and general manager.

The unwatering of the Ballard Mother Lode mine near Plymouth, California, has been completed, and a survey of the underground workings revealed that slight damage resulted from the suspension of operations. Work is to be resumed on the west crosscut to open up a known ledge



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west of the main shaft. A small crew has been employed while the unwatering was being done. John Ratto, Sutter Creek, California, is president of the Ballard Mother Lode Mines, Inc.

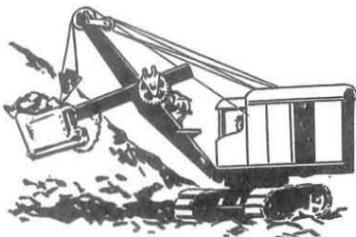
Further deferment of dividend action was voted by the board of directors of the Idaho Maryland Mines Corporation at its June meeting. The last dividend, amounting to 5 cents, was paid February 21, 1942, from 1941 earnings. According to W. H. French, secretary, "The uncertainty as to future labor conditions and tax obligations makes it imperative that we preserve our present strong cash position until conditions are more stabilized." The company operates at Grass Valley, California. Albert Crase is general manager.

Gravel carrying high gold values has been encountered at the Tennessee mine 10 miles north of Downieville, California. The strike marks the end of several years of development work, including tunnels and raises, in a search for the main channel. Present mining is being done on a small tributary of the main channel, about 40 feet in width. The ground is being blocked out and breasting will be started later in the year. The main channel is believed to be about 400 feet wide. A small crew of men is employed. The mine is owned and operated by the Pore brothers and the Scott interests. R. M. Scott, Downieville, is one of the principals.

Hydraulic operations at the Omega mine near Washington, California, will end for the season early in July. A crew of approximately 40 men has been employed since the beginning of the year. Hydraulic mining is seasonal because of the shortage of water. Theodore A. Larsen, Nevada City, is superintendent.

Three California mining firms have been granted chrome and manganese contracts by the Metals Reserve Company, government purchasing agency. These are: Magnachrome Company, Charles A. Neville and Glen V. Slater, operators, Auburn, California; War Metals Development, Ltd., D. D. Pettigrew, general partner, Foresthill, California; G. Maxwell and E. R. Patterson, a partnership. Magnachrome holds a 1,000-ton manganese contract, while the other two hold 1,000-ton chrome contracts.

The General Dredging Company, a co-partnership consisting of A. F. Giddings,



O. Jack Boucher, both of Sacramento, California, and W. H. Haines, 811 West Seventh Street, Los Angeles, California, recently took over the Arrambidie quicksilver mine near South Dos Palos, Fresno County, California, formerly operated by C. W. Hickok of San Francisco. Present work consists of putting the mine in first-class condition, and as much equipment as possible from previous dredging operations is being used to replace obsolete and worn out equipment. Completion of the work is being held in abeyance awaiting priority rating from Washington. The Arrambidie, which is a part of the Mercy group of mines, produced considerable quicksilver during the last war, and when operations are under way the mine output is expected to average 2,400 tons of ore per month or about 150 flasks of quicksilver.

A tunnel is being driven at the Brush Creek mine, Goodyears Bar, California, to tap the shaft recently sunk on the ledge. The new workings, undertaken as a prospecting program, have opened up a considerable amount of high-grade ore and extensive backs are said to be available. The mine is owned by Alpha Hardware and Supply Company, Fred F. Cassidy, president and manager, Nevada City, California.

Shoshone Mines, Inc., operating near Teocopa, California, is mining and shipping lead ore from its Gunsite and Noonday properties. More than 50,000 tons are reported to be in sight. The company also is developing the adjacent Great Extension group, said to contain large low-grade lead deposits. Roads to the property are to be improved to facilitate shipments. W. Buford Davis, 10600 Lindbrook Drive, West Los Angeles, California, is vice-president and general manager of the company.

Unless unforeseen conditions develop, the Pine Tree and Jenny Lind gold properties will be operated at capacity for the

remainder of 1942 at least, according to P. R. Bradley, Jr., Bear Valley, California, general manager for both properties. The Jenny Lind is operated by the Lind Mining Company and the Pine Tree by the Pacific Mining Company. Both are controlled by the Bradley interests.

The new tunnel at the Kirkpatrick mine near Goodyears Bar, California, has been driven to a point calculated to be under the channel and a raise has been started. The channel is expected to be reached within 50 feet. The mine was worked for some years through an inclined shaft until the cost of extraction became prohibitive. The new tunnel is expected to tap the same channel at a considerable distance south of the old workings and will permit the working of the gravel by gravity methods. Rinaldo Daneri, Downieville, California, is superintendent. The Kirkpatrick is owned by Charles G. Johnson, state treasurer, Capitol Building, Sacramento, California.

The German Bar Gold Mines, Inc., with properties near North Bloomfield, California, has been reorganized, and plans are being completed for active operations, employing 18 or more men. The mine is opened by 1,800 feet of tunnels and is equipped with a 30-ton flotation mill. Edward P. Bergin, 1740 Broadway, San Francisco, California, is president and general manager of the company.

Yuba Consolidated Gold Fields, Ltd., F. C. van Deirse, vice-president in charge of operations, 351 California Street, San Francisco, California, and subsidiaries report for the fiscal year ended February 28, 1942, a consolidated net profit of \$1,173,413, which is equal to 51 cents a share on 2,300,000 capital shares. This compares with \$1,520,957 or 66 cents a share in the preceding fiscal year. Although the dredges handled approximately the same yardage as in the 1941 fiscal year, the gold yield dropped 16.13 per cent, to 143,905 ounces. In view of the war program, it is not known how long and to what extent the company will be permitted to continue operations.

The Stagan Mining Company, Roy Stacy, manager, Jenny Lind, California, has turned its dragline equipment over to the government for use in defense work and will discontinue mining operations for the

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duration. The company has been working ground near Jenny Lind, owned by W. C. Willits.

Russell Wilson, who is operating the Feliciano mine near Midpines, California, is reported to be planning to enter the chrome mining field in El Dorado County. Wilson formerly operated the Black Oak mine at Garden Valley, California.

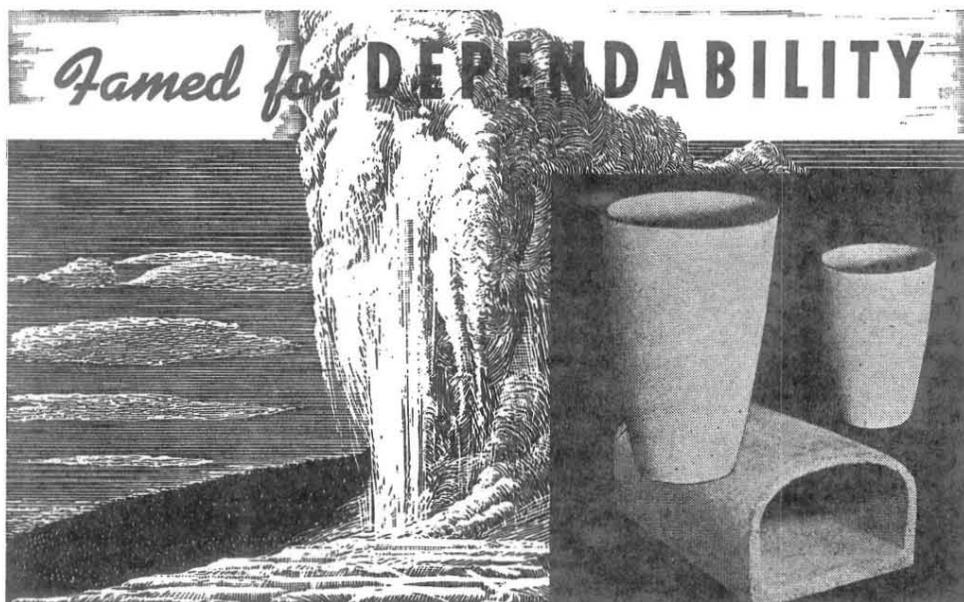
A. W. Scott of Happy Camp, California, has applied for a lease on an extensive manganese deposit on the Hoopa Indian Reservation. Assays are reported to have shown an average value of 49.7 per cent manganese.

The Charles Seeley chrome mining claims in the Tassajara district of the Santa Lucia Mountains near Camp San Luis Obispo, California, have been acquired under lease by H. R. Palmer and associates. Work is to begin immediately on construction of a 70-ton mill and concentrating plant for recovery of chrome, and active mining operations will get under way in August. It is understood that government funds for establishment of a large magnesium recovery plant will be sought if the original plant proves satisfactory. The Palmer interests have a mill at Las Vegas, Nevada, now idle, which will be moved to the Seeley property if government funds can be secured. Ore samples from the Seeley claims, tested by H. R. Brandenburg, Concord, California, chemist and metallurgist, are reported to show a recovery of 300 pounds of metallic magnesium per ton.

The Middle Fork Gold Mining Company, C. W. Plumb, general manager, 551 Thirty-fifth Street, Sacramento, California, is reported to be considering entry into the chrome mining field in El Dorado County. The company at present operates the Sliger gold mine near Greenwood, California, where steady production is being maintained. A crew of 90 men is employed and the 200-ton flotation-amalgamation plant is operating at capacity. Substantial ore reserves are reported in sight. E. H. Syms is mine superintendent at the property.

Property of the Hayden Hill Gold Corporation at Adin, California, has been purchased by the King of Pine Creek Mining Company, Ltd., Carl Halstrom, president and general manager, 419 Symons Building, Spokane, Washington. An assessment has been levied against stock of the latter company as a means of raising funds for an extensive development campaign. The purchase price for the Hayden Hill holdings was set at \$60,000. The 35-ton cyanide plant is being revamped to provide for the treatment of 75 tons of ore daily. The company also has acquired four claims owned by the Lassen Mining Company and three claims known as the Harper group.

Rising waters of the Klamath River caused serious damage to property of the William von der Hellen Mining Company northwest of Yreka, California. Two buildings were washed away completely, two others were damaged, and a quantity of supplies, including metal parts which are virtually irreplaceable, was lost. The dredge itself was protected by temporary dams and was not in serious danger. Hugo von der



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Hellen, Box 158, Yreka, is superintendent for the company. William von der Hellen, Medford, Oregon, is general manager.

COLORADO

Seventy-five feet of sinking below the 200-foot level have been completed in the Pueblo Belle tungsten mine by the Shattuck Chemical Company, 1805 Bannock Street, Denver, Colorado, and sinking is being continued. New levels will be opened at the 275 and 350-foot horizons. Mining is under way on the 100 and 200-foot levels of the property, ore being sent to the Holmes and Gilson plant, also known as the Sunnyside mill, near Boulder. Ernest Peterson, 1809 Sixteenth Street, Boulder, is superintendent of the Pueblo Belle and J. Seward Potter is vice-president and manager of the Shattuck concern, with headquarters at the Denver office.

The Highland Mary Mines, Inc., is making preparations to resume work at its property at Silverton, Colorado, where values are in gold, silver, lead, and copper. Frank L. Kennicott is general superintendent and Joseph M. Bradley of Silverton is president and general manager.

Production of manganese is expected shortly by the Colorado Mining and Refining Company, which is developing ground

on Flat Top Mountain eight miles southwest of Gunnison, Colorado, and three miles from the Hall Spur on the Rio Grande railroad. Ore will be sent to the newly authorized stockpile at Salida. Later in the present year the company may install a concentration plant at the mine, using the process developed by C. W. Flory, 1528 Curtis Street, Denver, president and general manager.

The Cameron Gold Mines, Inc., is reported to have suspended operations at the Cameron mine at Cripple Creek, Colorado. The complete mining and 100-ton flotation milling plants are being offered for sale. Normally over 50 men were employed and work was conducted on a 24-hour schedule, 100 tons of gold ore being mined and milled daily. C. H. Hyde, 1360 Niagara Street, Buffalo, New York, is president and Merrill Welker of Cripple Creek was superintendent and in charge of milling.

It is reported that the Donora Mining Company has suspended work at its Cardinal-Boulder County property near Boulder, Colorado, because of shortage of labor. A. W. Rohn, 1005 Penn Avenue, Boulder, is vice-president and general manager.

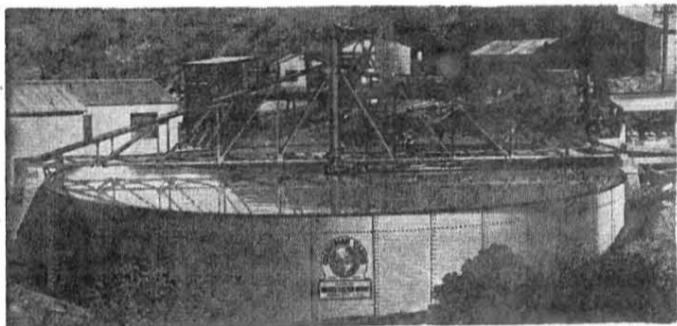
It is reported that the Lamartine Mines, Inc., has acquired some lead-zinc properties near Montezuma, Colorado, and will move its milling plant from the Lamartine mine near Idaho Springs to Montezuma. The mill, which is equipped for amalgamation and flotation, is designed to treat 75 tons of ore a day, but handles 85 tons easily. Lamartine ore includes free gold

and gold-silver-lead sulphides. The company will suspend work at Idaho Springs for the duration as soon as the final clean-up is completed and will take advantage of the war metal market. R. J. Ireland, Jr., of Amityville, Long Island, New York, is president and Joseph E. Purcell, 1458 Steele Street, Denver, is mine superintendent and consulting engineer. Marius Juhl, Idaho Springs, is mill superintendent.

According to reports, the Blue River Company, Horace E. Hildreth, vice-president and general manager, has resumed operations near Breckenridge, Colorado, and plans to conduct work on a schedule of 24 hours daily, seven days a week. The dredging company suspended operations last August, but prior to that was handling between 3,000 and 4,000 yards of material daily. Tom Allen is in local charge.

IDAHO

The Four Square gold-tungsten property and all its equipment and buildings, including a 100-ton flotation mill, will be sold August 10, 1942, by M. A. Kiger of Harrison, Idaho, referee in bankruptcy. The property consists of two patented claims, four-fifths interest in a third, and 20 unpatented claims, located 1½ miles from Murray, Idaho, and 20 miles from Wallace. The property was worked by the



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ARIZONA

Roy N. Baird, president and general manager of the **Mammoth-Tiger Extension Mining Company**, has been granted a Class B, RFC loan for development work on the **Tiger Extension** mine, near Oracle, Arizona. Operations were started the fifteenth of this month, and a crew of approximately eight men is working. The company address is Box 46, Oracle.

The **Golden Belt** flotation mill, which was revamped in May of this year to treat ore from the **Gladiator** mine, is reported to be handling 20 tons a day, and tonnage will be increased when enough additional ore is blocked out to justify it. Values are in lead, zinc, copper, and gold. The mine is owned by D. W. Russell, Box 603, Prescott, Arizona, and operated by E. M. Moores of Crown King. Operations are under the direction of A. N. Bennett. Sixteen men are employed in mill and mine.

The **Bullard Mining Company**, owner and operator of the **Bullard** mine six miles north of Aguila, Arizona, is reported to be ready to start production. The general manager of the mine is J. C. Smith, Heard Building, Phoenix, Arizona. Values are in copper.

Three men are at work opening up the **Yuma** copper mine, four miles north of Vicksburg, Arizona. The mine is owned by Dr. C. H. Waters of Vicksburg, and is under lease to George Spry, 1741 West Lincoln Street, Phoenix, Arizona.

The **Progressive Mining Company**, owned by Sirota and Levinson, Los Angeles, California, is opening up the **Lone Wolf** group of claims near Tubac, Arizona. The mine is a gold-silver prospect, but there are reported to be copper showings. Development work includes the sinking of a small shaft and driving of a tunnel. Three men are employed under the direction of Jim Ferguson of Tubac.

Auto Specialties Manufacturing Company, J. W. Tiscornia, president, St. Joseph, Michigan, has leased the **Keating** mine near Clifton, Arizona, from the **Dover Copper Mining Company** at Clifton. Present development work consists of cleaning out the mine, constructing ore bins, roads, and surveying 35 claims. It is planned to ship 100 tons of 4 per cent copper ore per day to the Hayden, Arizona, or El Paso, Texas, smelter. F. W. Sherman, Box 548, Clifton, is the operating manager, and he is employing 20 men at present.

The **Lucky Strike** asbestos mine is under lease to T. C. Caughlin, 2039 North Fifteenth Street, Phoenix, Arizona. The

mine is in the **Sierra Ancha** Mountains, 60 miles northwest of Globe, Arizona, and is equipped with a small mill for low-grade material, using a suction extractor. About one ton of asbestos is produced daily, of which 10 per cent is No. 1 grade; 30 per cent, No. 2 grade; and 60 per cent, fiberized. A crew of 5 men is employed. N. G. Hill, Central and Glendale Avenues, Phoenix, is the owner.

Paul Warner and Chester Lauck have awarded a contract to Albin Larson, Box 333, Chloride, Arizona, for extension of the tunnel at the **97** mine an additional 200 feet. The mine is in the **Cerbat Range** 1½ miles southeast of Chloride.

Production at the **Storm Cloud** mine, 14 miles south of Prescott, Arizona, is expected within 60 days. The mine is leased by Richard Simis, 320 Luhrs Building, Phoenix, Arizona, and owned by O'Brien Mines, Ltd., Ottawa, Canada. Plans are under way to unwater the 230-foot shaft, and to clean out the haulage tunnel. A crew of 12 men will be employed, and shipments will average 25 tons per day, with values in gold, copper, and silver. John Taxton is in charge of operations.

A 200-ton gravity concentration plant is nearing completion at the **Castle Dome** mine, 42 miles northeast of Yuma, Arizona. The mine is operated by the **Arizona Lead Company** of Yuma, a partnership composed of M. A. Holmes, K. A. Holmes, and George I. Holmes, Box 828, Yuma. Equipment at the mill consists of a rock crusher, a 200-ton Bendelari jig, and tables. The plant is expected to produce a concentrate averaging 62 per cent lead, 7 ounces silver, and 0.02 ounce gold per ton. In addition, about 50 tons of fluorite concentrates per week will be produced as a by-product, running in excess of 90 per cent CaF₂. A flotation unit is to be installed at a later date, which will increase recovery of the lead and fluorite content. The mill is expected to be in operation this month. George I. Holmes is mine superintendent, and K. A. Holmes is mill superintendent. At present a stockpile of 40,000 tons of ore is awaiting the completion of the mill. A well has been drilled which will furnish 250 gallons of water per minute, or enough to run the mill to capacity.

Two shafts, one about 20 feet deep and one about 35 feet deep, are being sunk at present at the **Manganese Queen** mine, 14 miles out of Florence, Arizona. The

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.

mine is owned by **Sierra Metals Company**, William Ward, superintendent, Box 202, Florence, Arizona. Both shafts are equipped with hoists, and extensive open-cut work is being done. A mill also is under construction. A crew of eight men is employed.

E. E. Sherman and three associates are drifting on the 40-foot level of the **Indiana** mine west of Washington Camp, via Patagonia, Arizona. The ore is hauled to the **Duquesne** mill of Callahan Zinc-Lead Company. Reported ore values are about 20 per cent in zinc and 4 per cent in copper.

Maurice Hedderman, Box 201, Tucson, Arizona, has made application for a Class B, RFC loan of \$5,000 to be used in opening up his **Hedderman** zinc property five miles south of Dragoon, Arizona.

Henry W. Berger, Box 851, Kingman, Arizona, has received word from Washington that an additional \$18,000 RFC loan has been granted for further development of the **Berger-Phillips** tungsten property 65 miles southeast of Kingman. Work performed under the first loan of \$20,000 was so successful and the ore bodies opened up of such size and extent that the additional loan was granted in order to put the property on an actual production basis. The current development shows the presence of a large shoot of commercial ore, and with the opening of the property to lower levels it is expected that the tonnage will be greatly increased. The work is carried on through adit tunnels. The new development program already is under way.

Edwin I. Tout and associates have organized the **Tucson Metals Manufacturing Company** with headquarters at 307 Valley National Bank Building, Tucson, Arizona. The company has taken over the **Tucson Iron Works** and is installing a steel furnace for the production of ferro-alloys.



The **Garnet** tungsten mine in the **Salt Springs** district, Westpoint, California, has resumed work under the direction of L. A. Smith, president and manager of **River Placers, Ltd.** It is hoped to have sufficient ore developed by fall to warrant installation of the necessary concentration plant. A crew is building a road to the mine to permit bringing in heavy machinery, and mining is expected to start shortly.

The **Dinuba Mining Company**, Dinuba, California, is moving a mill from the **California Hot Springs** district to its tungsten property near Dinuba. The company is owned and operated by five men: Charles Parlier of Parlier, Avery Woolley of Dinuba, Tyler Jack and Glen Henry of Reedley, and Bill McRay of Selma, California. A crew of six men is working two shifts. Approximately 300 tons of ore have been shipped and recent work indicates an average value of \$25 a ton.

It is reported that Dorothea Reddy Moroney and her brother, Michael Reddy, who operate several chrome mines in Siskiyou County, California, have sold four claims near Hamburg, California, to a New York mining syndicate for \$48,000. Alfred Ellickson, representative of the eastern firm, is directing work at Hamburg. Mrs. Moroney and her brother will continue to operate their other claims in Siskiyou county. Roads are now under construction to the Hamburg property, as the operators plan to truck the ore to the chrome stockpile at Yreka, California.

A contract has been awarded to Alwyn H. Wild, president of **United States Chrome Mines, Inc.**, 558 Russ Building, San Francisco, California, by the Metals Reserve Company for 12,500 tons of high-grade chrome from California deposits. Approximately 7,500 tons are to be supplied by the Sweetwater chrome mine, near Morro Bay, San Luis Obispo County, and the balance from the Crow Creek mine in Trinity County, California. The Sweetwater is leased to Wild by U. S. Chrome Mines. The Crow Creek mine was leased from Southern Pacific Company. The contract will necessitate the installation of a 125-ton mill during the next 90 days, as the production period called for in the contract is 18 months.

The **United States Flare Corporation**, 1115 Pacific National Building, Los Angeles, California, is reported to be developing a tungsten prospect, the Hi Peak tungsten mine, four miles northwest of Inyo-Kern. The property consists of 16 unpatented claims. Plans are under way for a mill, and 10 men are employed. Norman Whitmore, 417 South Hill Street, Los Angeles, is superintendent. Victor Hayek is manager of the company.

Nylander Brothers of Oakland, California, are reported to be milling five tons of gold ore per day from the **Central** mine. The property is leased from S. J. Donaldson, of Georgetown, California, and is one of a group of claims which includes the Midway and South Sunnyside. A Gibson mill is being used in their operations.

It is reported that the **Oro Fino Consolidated Mines**, located in the Ophir district near Auburn, California, has encountered high-grade ore at the 1,200-foot level. The shaft is being extended 600

feet below the 800-foot level, from which operations for the past four years have been carried on. Before the shaft-sinking program was undertaken, 100 tons of ore were being milled daily. George Beck, Box 432, Auburn, California, is superintendent.

Drifting is in progress at the property of the **Mono Molybdenum Company** near Mariposa, California. It is planned to run a 425-foot drift, from which crosscuts will be extended to open up five veins. Alexander S. Wyner, 180 Los Angeles Boulevard, San Anselmo, California, is general manager of the company, and Arthur Green, 23 Union Street, Boston, Massachusetts, heads the organization. William Williams of Mariposa is superintendent.

A. W. Scott of Happy Camp, California, is reported to have submitted the best bid to the Office of Indian Affairs on the **Copper Bluff** mining tract, located on the Hoopa Indian Reservation. Average samples of ore from the properties have shown 17.5 per cent zinc, 2.5 per cent copper, 0.16 ounce gold, and 30.1 ounces silver. The vein is approximately 5½ feet to 17 feet in width, and outcrops for over 3,000 feet. Development work consists of building trails and constructing a camp.

J. Hampton Lashbaugh, Nevada City, California, and John A. Foley of San Francisco have optioned five chrome and manganese properties in Plumas County and one already is in operation. Lashbaugh states that two carloads of 57 per cent manganese have been mined at the **Halloway** mine in the Mt. Hough district near Quincy, California. The property is worked by open-pit mining and it is hoped to have 25 men employed soon.

Work is nearing completion on the driving of the **Radiore** crosscut a distance of 4,400 feet at the property of the **Imperial Metals, Inc.**, two miles north of Darwin, California. The crosscut will be used as a haulage tunnel for the **Defiance**, **Independence**, and **Thompson** mines, held under lease by the Imperial organization. The property was previously worked for lead values but the present operators have erected a 250-ton mill for the concentration of lead-silver values and separate recovery of the tungsten. A crew of 100 men is employed. Sam B. Mosher, Box

5840, Metropolitan Station, Los Angeles, California, is president of **Imperial Metals**. George Bush is mill superintendent at Darwin, and S. A. Spellmeyer is mine superintendent.

The **Victory Chrome Company**, Charles Hopper Brown, manager, Box 326, Auburn, California, is operating a 16-foot trommel with a capacity of 500 cubic yards daily. It is reported that stockpiling has reached a point where shipments can be made soon.

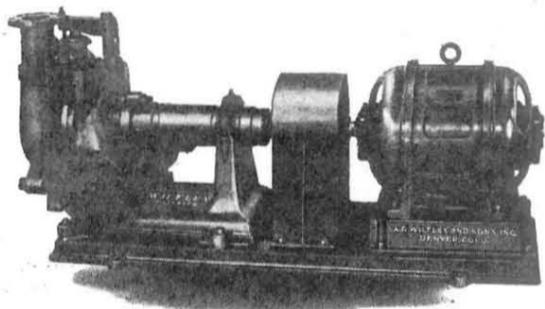
The **Klau** quicksilver mine, west of Paso Robles, California, has been sold for \$75,000 to H. W. Gould, Mills Building, San Francisco, California. Gould and associates have operated the mine for several years, under lease from Mrs. Catherine Carson. The present output from the mine is reported to be more than 100 flasks monthly. Operations are down to the 450-foot level in the shaft. John W. Judy is general mine superintendent for H. W. Gould and Company, the operating concern.

Ten men are employed at the **Little McGee Creek** tungsten mine, eight miles west of Bishop, California. The mine is owned by the **McCloskey Mines, Inc.**, E. F. McCloskey, president, 14926 Alva Drive, Pacific Palisades, California. Development work consists of a 135-foot tunnel, driven 300 feet below the outcrop. It is reported that 500 tons of ore, assaying 1 per cent WO_3 , are on the dump. The operators plan to ship the ore to the **Mineral Reduction Company's** mill at Benton for treatment.

O. E. Chaney, Box 1511, Reno, Nevada, and associates have taken a sub-lease on the **Jacob Schmidt** ranch in the Franciscan Mountains, 27 miles south of Tracy, California. According to reports, operations are to start soon at the property, which carries values in manganese. The deposits have been known to exist for a long time, but have not been developed. The ore will be sent to the recently established stockpile at Tracy. Chaney is making his headquarters at the **Tracy Inn**, Tracy.

The **Acme Mining Company**, Thomas Cox, president and general manager, 381 Bush Street, San Francisco, California, recently acquired a purchase option on the **Greenhorn** copper mine 21 miles from Redding, California. The mine is well developed, and samples show good copper content. Operations are to start shortly with

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the installation of sluices and tanks for the recovery of the copper values. In order to carry out these operations the company has levied an assessment of 1½ cents a share against stockholders. The property includes 1,000 acres of patented land, 26 quartz mining claims, and several water rights. The mine contains over 14,000 feet of workings including tunnels and their tributary drifts, crosscuts, winzes, and preparatory stope raises. Values are chiefly in copper, with some gold and silver. Work is under the direct supervision of Cox, with Albert Hanford as superintendent. Hanford has been manager of the Greenhorn mine in various development operations since 1915.

The **Monarch Rand** mine in the Rand mining district, 1½ miles southeast of Randsburg, California, is employing 10 men in the installation of a screening and concentrating plant, which will have a capacity of 300 cubic yards per day, for the recovery of gold and tungsten values. The mine is owned by the Monarch Rand Mining Company, S. O. Walker, president and manager, Randsburg, but is being worked under lease by Holcomb Valley Mines Company, c/o Lacy Manufacturing Company, 973 North Main Street, Los Angeles, California. George K. Knudsen is president and manager of the Holcomb Valley Mines.

West Coast Tungsten Company, C. E. Cord, owner, 9730 Wilshire Boulevard, Beverly Hills, California, has a lease on the mill formerly operated by Keeler Gold Mines, Inc., four miles southwest of Keeler, California. This was originally a cyanide plant, for treatment of gold ore, but has been converted into a mill for concentration of scheelite mined in the Darwin district. The plant has a capacity of 130 tons per day. Sixteen men are employed. The company also is leasing the **Mountain Kid** group of three claims, about nine miles southwest of Darwin, California. A 38-foot shaft has been sunk at this property, and on the 30-foot level drifts have been run east and west. The west drift was turned south and is reported to have cut an ore body 17 feet in width, averaging 1.16 per cent WO₃. An inclined tram, approximately 300 feet long, has been built from shaft collar to bins in the bottom of the canyon. Three men are employed. Paul Wilbur, 253 Richland Avenue, Glendale, California, is the owner of the Mountain Kid group.



In addition to the normal production of lead, zinc, and copper, the **Rico Argentine Mining Company** of Rico, Colorado, is preparing for large-scale production of pyrite ores. The **Vanadium Corporation of America** is reported to have contracted for a large tonnage of this ore and negotiations are said to be under way between the Rico Argentine company and **U. S. Vanadium Corporation**. The two vanadium con-



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MRC COMPLETES LIST OF AGENTS FOR ORE PURCHASING DEPOTS

METALS RESERVE COMPANY has announced the names of its agents who will have charge of the ore purchasing depots where small lots of manganese and chrome ores of 35 per cent and up will be purchased and stockpiled. These are:

- ARIZONA**
 Phoenix W. M. Snow
 325 Heard Building
 Phoenix, Arizona
- CALIFORNIA**
 Yreka A. J. Healy
 505 Center Street, Apt. 2
 Yreka, California
- Anderson Dana W. Leeke
 General Delivery
 Anderson, California
- Auburn Hallet R. Robbins
 656 Lincoln Way
 Auburn, California
- Tracy George W. Bourret
 P. O. Box 541
 Tracy, California
- COLORADO**
 Salida Edward P. Chapman, Jr.
 Second and G Streets
 Salida, Colorado
- MONTANA**
 Butte Arthur V. Corry
 315 Silver Bow Block
 Butte, Montana
- NEVADA**
 Battle Mountain Glenn G. Gentry
 Clough Apartments
 Winnemucca, Nevada
- NEW MEXICO**
 Deming Roy E. Howe
 General Delivery
 Deming, New Mexico
- OREGON**
 Seneca William L. Merritt
 General Delivery
 Seneca, Oregon
- Grants Pass Daniel C. Beyer
 Route 1, Box 371
 Grants Pass, Oregon
- Coquille Arnold E. Borel
 Box 45
 Coquille, Oregon
- In addition to the above, Metals Reserve Company also has set up stations for the purchase of low-grade manganese (ores running from 15 per cent to 34.99 per cent) in localities where the War Production Board has recommended beneficiation plants or where large tonnages are known to be available from specific mines. The locations which have been established, together with the operating agents, are listed below. Several additional stations undoubtedly will be set up at a later date.
- MONTANA**
 Philipsburg Sunshine Mining Company
 Box 1080
 Kellogg, Idaho
- Butte Arthur V. Corry
 315 Silver Bow Block
 Butte, Montana
- NEW MEXICO**
 Deming Federal Mining and
 Smelting Company
 120 Broadway
 New York, New York

ARKANSAS

Batesville American Zinc Company
 (Not less than of Arkansas
 20 per cent ore 1600 Paul Brown Building
 will be accepted St. Louis, Missouri
 at this station)

TENNESSEE

Elizabethton Embree Iron Company
 Elizabethton, Tennessee

Metals reserve expects to have a representative to purchase the higher grades, 35 per cent up, manganese and chrome ores at these depots which have been set up for the purchase of low-grade manganese. However, at the present time, Howe at Deming and Corry at Butte are the only agents which have been designated for this purpose.

The stations located at Deming, Butte, and Elizabethton will receive ore in carload lots as well as truckload lots, as railroad scales are available at those points. At the other depots the sellers must arrange for the ore to be delivered in truckload lots in order for it to be properly weighed in.

Special attention is called to the fact that a contract with Metals Reserve is not necessary in order to deliver ore to the above stations. However, if a shipper is near enough to make it expedient to ship ore to such location, he should apply to the agent in charge for more detailed information, including prices, shipping instructions, etc.

WAGE-HOUR STATUS OF MINE LESSEES OUTLINED BY WALLING

FACTORS which will be used to determine whether mining lessees are to be considered employes under the Fair Labor Standards Act, or bona fide independent operators, have been defined by L. Metcalfe Walling, administrator of the wage-hour division, U. S. Department of Labor, in an official statement just released. This statement, which follows a fact-finding conference of the industry held in Salt Lake City, Utah, continues the policy announced by the administrator two years ago of determining each case on the degree of actual control exercised by the lessor over the lessee, as well as on the formal terms of the lease, and sets forth five factors to be looked for in a bona fide independent lease:

1. Lessee must not work under such supervision of lessor as would indicate an employe-employer relation;
2. The relationship is subject to special scrutiny where lessor furnishes all or most of the equipment;
3. Lessee must select, hire, and fire his own employes, if any, and pay them and any social security or other taxes incident to their employment;
4. Lessee must be free to dispose of his ore without undue disadvantage;
5. The lease must be for a definite period of not less than six months and not be arbitrarily cancellable by lessor in case of a lucky "strike."

According to the statement, the current release is concerned primarily with a type of mining lease known as the "block"

lease. Under this type of lease, the lessee is given only a small portion of a mine, the "block" of ground leased being usually a cubic space measuring about 100 feet in each direction. However, the principles stated in the release are applicable to other forms of metal mining leases which contain provisions and stipulations similar to those used in block leases.

In some cases block leases are given in mines which are no longer operated by the lessor. In other cases, the lessor company is engaged in mining ore in the same mine in which it gives block leases, the leases being given in the old workings and the lessor mining the new, unworked portions. The latter type of lease usually requires a considerable amount of coordination between the work of the two, and in such situations the wage-hour division will examine the facts with particular care to determine whether the operations of the lessee are truly independent, or whether the status of the lessee is substantially equivalent to that of workmen who are admittedly employes of the company.

Administrator Walling's statement also contains the stipulations in a mining lease which his department would consider as being consistent with an independent lease, and those stipulations which would be considered as incompatible with a true lease. The fact that a lessee either rents equipment or tools from the lessor or pays charges for the use of facilities furnished by the lessor does not necessarily deprive the lease of its independent character.

In the matter of wages, taxes, and insurance, the administrator claims that there can be no independent lease unless the lessee selects, hires, and fires his own employes and compensates them for their services on his own account.

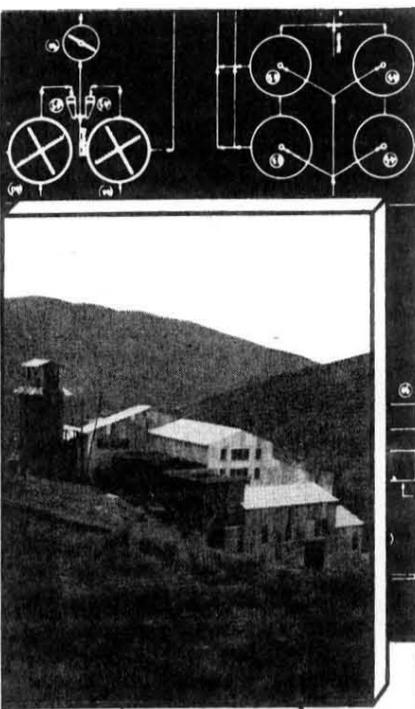
As to the sale of ore, a stipulation in a lease that the ore be shipped in the name of the lessor to a designated mill or smelter, the proceeds to be turned over to the lessee after the lessor has deducted his royalties, will not necessarily be considered as inconsistent with an independent lease. However, if such provision actually operates to the undue disadvantage of the lessee, it might imply the existence of an employment relationship.

A number of other factors which will be used by the division in determining the lessee-employe status in individual cases are contained in the release, which Walling says is by no means exhaustive but which does indicate the general principles which will be followed in arriving at decisions.

MANUFACTURE OF MANY ZINC ARTICLES IS FORBIDDEN BY WPB

UNDER a new War Production Board ruling (Order M-11-B), effective July 24, the manufacture of more than 100 articles made of zinc is forbidden after September 1. Until that date makers of such articles may use not more than 50 per cent of the average monthly weight of zinc used in 1941 for the products.

Among the articles on the forbidden list are die castings, book-ends, costume jewelry, household and kitchen appliances, smokers' supplies, toys, slugs, and tokens.



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The United Lead Zinc Mines, Inc., an Arizona corporation, is reported to have taken over the Lead Carbonate and Columbus group of claims in the Wallapai Mountains, near Kingman, Arizona. Lead Carbonate is opened by a number of adit tunnels, all of which are said to have disclosed oreshoots. Values are in lead, with some silver and gold. A small crew is at work at present, taking out commercial ore for shipment. Maurice Katleman of Los Angeles, California, is president, and vice-presidents are Leonard Hoffman and Clinton W. Randles of Kingman, and James A. Mabee of Long Beach, California. J. H. Hoffman, Box 534, Kingman, is secretary-treasurer and general manager.

The Ash Peak mine, 10 miles west of Duncan, Arizona, is producing approximately 50 to 60 tons of gold-silver ore a day, shipments going to the International Smelter at Miami, Arizona, where it finds a ready market because of the high silica content. The mine is being operated under lease by Dan Mayne and Howard Mottier, both of whom are addressed at Box 208, Duncan. Mayne and Mottier took over the mine in July 1941, and up to January 1942 mined approximately 9,000 tons of ore. From January to July about 10,500 tons have been mined and shipped. The mine is equipped with hoist, compressor, and drills, and present work is being done on the 500-foot level. The mining is done through the Commerce shaft which is 500 feet in depth.

So far this year the Hardy mine, 11 miles west of Duncan, Arizona, has produced 25 carloads of ore with an approximate value of \$12,500. The shaft has been deepened from the 600-foot level to the 700-foot level, and over 300 feet of drifting accomplished. An average of 12 men per day is employed. The mine, formerly known as the Ash Peak Extension, was taken over in 1940 by C. C. Streeter and Conrad Troll, Box 236, Duncan, and William Ensberry. Operations are carried on under the name of the Hardy Mines Syndicate. From January to September of 1941, 19 carloads of ore were produced with an approximate value of \$20,000.

The Williams gold mill at Quartzsite, Arizona, according to reports, is to be revamped in order to handle manganese ore. The mill will have an approximate daily capacity of 150 tons. It is owned by Halsey L. Williams of Quartzsite, operator of the old Apache mine near Quartzsite. A recommendation was forwarded by the Mining Association of the Southwest to the Metals Reserve Company in Washington, D. C., favoring the reconstruction of the old mill in preference to a new mill at either Blythe or Quartzsite.

Two carloads of ore have been shipped recently from the Manzanita mine in the Chloride district of Mohave County, Arizona. The mine is owned by Minnesota-Connor, Inc., T. M. Recchiuti, president, Security Trust Building, Camden, New Jersey. R. E. Lord, Chloride, Arizona, is general manager at the mine. The mine has been employing three men since March 1, 1942. Development work consists of

a 100-foot shaft, at the bottom of which is a 15-foot crosscut to the vein, and a 40-foot drift on the vein. Values are in lead, silver, and gold.

It has been reported that Mrs. Ruth Armstrong, 212½ East Portland, Phoenix, Arizona, is the prospective purchaser of the Mystery and Courtland groups of claims in the Gleeson-Courtland district, near Bisbee, Arizona. The option price is said to be \$60,000.



Yuba Consolidated Gold Fields, Ltd., F. C. van Deirse, general manager, 351 California Street, San Francisco, California, is handling 45,000 cubic yards of gravel weekly at its dredging project in the Butte Creek area, six miles south of Chico, California. It is estimated that the company still has three years of dredging in the district.

John H. McSorley, Mokelumne Hill, California, is reported to have bonded his placer property, two miles west of Mokelumne Hill, to E. G. Setzer, 1125 Maringo Avenue, South Pasadena, California. Setzer is reopening the mine to produce quartz crystals for the U. S. government and General Electric Company, and arrangements are being made to install necessary machinery. In 1924 the entire output from the property is said to have been purchased by the Navy.

An option with purchase agreement has been taken by C. L. Best on the Oxford chrome mine at Downieville, California, and preparations are being made to place the property on a production basis at the earliest possible date. Best, chairman of the board of Best Tractor Company, is the owner and operator of the Ruby gold mine at Goodyears Bar, California, and L. L. Huelsdonk, who has served as manager of Ruby operations, will be in charge of the Oxford project. It will be necessary to extend a road from the top of the present tram another mile and one-half to the chrome deposit, and make some alterations in the mill to change it over from handling gold to concentrating chrome at the rate of 100 tons daily. A crew of 25 to 30 men will be employed.

The washing plant of Holcomb Valley Mines Company, at the Monarch Rand mine in the Rand mining district, Randsburg, California, is running one seven-hour shift daily, treating 55 yards of gravel. The product is said to run about two pounds of scheelite and 65 cents in gold per yard. Present volume of work is limited by the amount of water available as it is necessary to truck water for washing operations from the property of Everett Cornelius. A plan whereby additional water can be secured from the Big Butte mine at Randsburg is being worked out to permit doubling plant capacity. George K. Knudsen, 973 North Main Street, Los Angeles, is president and manager of Holcomb Valley Mines Company.

This cable lubricant does all 3

The Cerro Bonito quicksilver mine, Hollister, California, has been leased by the owner, Ada M. Flint, to C. E. Bell under a 10-per cent royalty agreement. Bell, in turn, agrees to perform not less than 25 eight-hour workshifts each month until December, and then double the work hours after that time.

The Manganese Mining Company is producing 50 tons of manganese ore daily from the property it is operating under lease from the Kern Leasing Company. The property is located in San Bernardino County near Yermo, California. Production is coming largely from open pits, although more than 450 feet of underground work have been completed with 100 feet the greatest depth attained. Further exploration of undeveloped ore bodies is underway. A crew of 12 men is employed. William V. O'Connor, 530 West Sixth Street, Los Angeles, California, is president of the company. Others of the staff include H. W. Orwig, general manager, and D. A. Kendall, mine superintendent, both of 1079½ Leighton Avenue, Los Angeles.

Wilzona Development Corporation, Los Angeles, California, expects to have its plant for the treatment of vanadium concentrates completed early in August. The first unit of the plant will produce about 2,000 pounds of V_2O_5 daily, using a new process perfected by Joseph L. Danziger, metallurgist, Box 9724, Los Feliz Station, Los Angeles, California. Danziger will be in charge of the plant. The vanadium concentrates for the Wilzona plant will be supplied by Minerals Milling Company, headed by Frank A. Simmons, president and general manager, an interlocking concern which operates the Argentina mill at Goodsprings, Nevada. All ores in the Goodsprings district, running 1 per cent or over in vanadium, are being purchased by U. S. Vanadium Corporation, as agent for Metals Reserve Company, turned over to Minerals Milling for concentration, then sent to the Los Angeles plant which will produce a fused vanadic acid for shipment to Metals Reserve stockpiles.

Work at the Garnet Dike Mine, a group of two claims 13 miles from the Kings River State Fish Hatchery, is being supervised by the three Sheridan brothers. The company has a steady crew of 10 men. Because of the remoteness of the location, all supplies must be packed in 7½ miles. Development consists of four open cuts and a 75-foot tunnel. A 700-foot aerial tram delivers the ore from the mine to the mill. The actual mining of the ore is assisted by a Cletrac bulldozer which is but one of the many heavy pieces of equipment that has been dismantled and transported by mule. The mill consists of a 6 by 12-inch Pacific jaw crusher, 16-mesh trommel, 25-ton Wheeler ball mill, and a 22-foot Overstrom table. Power is supplied by gas engines. Mine production is running from 16 to 18 tons daily of ore carrying 0.75 per cent WO_3 . Hal Sheridan is mine foreman; M. Sheridan is business manager and supply chief; Bill Sheridan is mill foreman. All are addressed in care of the Kings River Hatchery, Fresno, California.

(Continued on Page 24)

works inside out

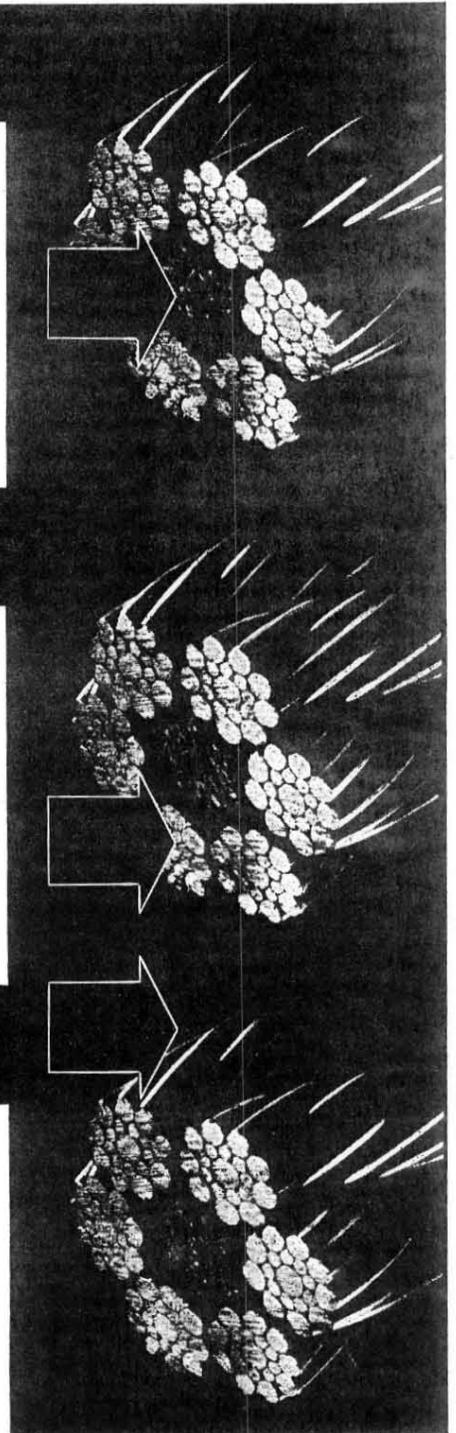
1 Unacal Cable Lubricant is an absolutely new formula for lubricating wire rope. It contains a volatile "carrier" that penetrates to the rope core of a cable—evaporates—and leaves the lubricating properties where they can do the most good...*on the inside!* Therefore, your cable receives proper lubrication *where it needs it.*

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Effective the first of July, the Bert C. Austin Company, Inc., Mills Building, San Francisco, California, took over the Cloverdale quicksilver mine, 12 miles east of Cloverdale, California. The mine previously was held by Western Mercury Company, Andrew Rocca, president, 111 Sutter Street, San Francisco. In addition, Austin Company acquired the lease held by Joseph Garcia, who had been operating the property for about a year, and was producing about 25 flasks per month. New development is to start immediately on the No. 6 level, with the objective of making the property a substantial producer. The mine is equipped with complete mining and milling facilities, including a four-foot Gould rotary furnace. W. N. Hubbard will be in charge of work at the mine.

El Diablo Mining Company, Bishop, California, is reported to have opened up good tungsten deposits at property on Lookout Mountain, in Inyo County, California. The company is operating under lease from John and Arthur Schober. The presence of tungsten was discovered about a year ago by John Schober, and investigations by H. O. Johanson and associates disclosed a quantity of high-grade tungsten. A road was built to the site, over which trucks have been hauling 10-ton loads since last September. Thirty tons are handled daily at the El Diablo mill, operating on a 16-hour basis. Development work consists of a tunnel driven 150 feet, a 150-foot shaft, and a glory hole. Twelve men are employed at present under the direction of Harold O. Johanson, superintendent, Box 567, Bishop.

According to John A. McDonald, president of the Tuolumne Gold Dredging Company, continuous operations have been carried on since the dredge was placed in operation May 1, 1942. The dredge was rebuilt after it turned over about a year ago. The company is operating extensive acreage near La Grange, California. Estey A. Julian, 421 Crocker First National Bank Building, San Francisco, California, is general manager.

It is reported that a promising deposit of cinnabar ore has been opened up at the Alta Quicksilver Mines near Potato Peak, Bodie, California. Warren Loose, G. A. Peterson, and John L. Rosecranz are developing the deposit. The mine has been opened up by more than 1,000 feet of open cuts and approximately 100,000 tons of furnace ore have been exposed. San Francisco offices are located at 2 Pine Street.

The Star and Excelsior Consolidated copper mine, Copperopolis, California, is being developed by Metal Mining Exploration Company, John A. McDonald, president, 912 Russ Building, San Francisco, California.

Fred and Roy Bagley have leased their chrome mining claims on Mt. Eddy to Phil Munko and L. D. Taylor of Dunsmuir, California. Munko and Taylor are working with Montrose Milling and Mining Company, Dunsmuir, and have leased a number of other claims in the same district. Development work consists of a road up Eddy Creek over which the ore will be hauled to the stockpile at Castella,

California. Max Schmidt, president of the company, has spent some time in the area recently, making final plans for the construction of a custom mill near Castella, where ore from nearby claims may be milled. Munko and Taylor have a contract with Metals Reserve Company for 10,000 long tons of chrome and it is planned to ship at least 10 cars of high-grade ore during August.

A notice has been posted by the Golden Queen Mining Company of Mojave, California, to the effect that the company's mine will be shut down within 90 days. The property is equipped with a cyanidation plant with a daily capacity of 500 tons. Work at the mine is under the direction of W. C. Browning, general manager, 1211 Pacific Mutual Building, Los Angeles, California.

Albert Crase, general manager of the Idaho Maryland Mines Corporation, Grass Valley, California, has announced that the corporation has taken an option on the Midway quicksilver mine near San Jose, California. The mine has been on a small-scale production basis, and equipment includes a furnace. No plans have been made except a thorough testing of the mine by Rollin Farmin, head engineer for Idaho Maryland, and Joe Landis, a member of the engineering staff. The optioning of the mine is in line with a policy recently adopted by the company to enter the essential war mineral production field.

For the six months ended June 30, 1942, Newmont Mining Corporation reports a net income of \$879,169 after all deductions, including provision for federal income taxes. During the period cash dividends of \$797,467, or 75 cents a share, were paid. Newmont, with mining operations in many parts of the world, is headed by Charles F. Ayer, president, 14 Wall Street, New York, New York.

The Farnsworth hydraulic mine near Cecilville, California, has stopped operations for the season. Ed McBroom, owner of the mine and his partner, Louis Roff, both of Cecilville, are making the final clean-up of bedrock.

COLORADO

Active development will get under way soon at the property of the Chaffee County Fluorspar Company in Browns Canyon 11 miles northwest of Salida, Colorado, following the return of Peter L. Bancroft, president, from Vancouver, British Columbia. He went to Vancouver in December, expecting to return after the Christmas holidays, but following the Pearl Harbor attack the immigration rules were tightened and he was unable to return to the United States until recently. The property has been closed down during his absence.

Work is being pushed on construction of a new fluorspar mill at the property of Kramer Mines, Inc., near Salida, Colorado, with a crew of 25 men employed. Development is proceeding at the mine where extensive underground work has been com-

and compares with a profit of \$392,547 or 83 cents a share in the June quarter of 1941 and \$465,513 or 99 cents a share for the quarter ended March 31, 1942. For the six months ended June 30, 1942, there is a reported net profit of \$883,070 or \$1.89 a share, comparing with \$693,028 or \$1.46 a share for the first half of 1941. The Howe Sound Company operates at Holden, Washington, and in Chihuahua, Mexico, and British Columbia. E. B. Schley, 730 Fifth Avenue, New York, is president of Howe Sound.

The Western Knapp Engineering Company has acquired the Black Rock and Washington zinc mines in Deep Creek Valley near Northport, Washington. Development work is under way in an effort to determine the type of milling facilities to install. The property is owned by John Gorrien of Minneapolis, Minnesota, now in Washington, and associates. Mill concentrates can be sent either to the Bunker Hill smelter at Kellogg, Idaho, or to Anaconda at Great Falls, Montana.

It is stated that the 50-ton mill at the Bonanza mine has been rehabilitated recently by Russell Parker of Orient, Washington, who is leasing the mine from G. J. Vervaeke of Bossburg, owner. The mine is located 15 miles north of Colville, in Stevens County, and has ore values in lead, iron, and silver. There are three miles of tunneling and the property has been opened to a depth of 800 feet. The First Thought mine, which Parker has been operating, has been closed down.

PHELPS DODGE OFFICIALS NAMED IN STOCKHOLDERS SUIT

A SUIT has been filed by stockholders against the officers and directors of the Phelps Dodge Corporation and its subsidiary, Phelps Dodge Refining Corporation, which alleges losses exceeding \$1,500,000 as a result of alleged anti-labor policies and the alleged refusal of the company to mine ore with a copper content of less than 3 per cent.

Defendants asked dismissal of the suit, asserting that Phelps Dodge is now treating ore of less than 1 per cent copper content at the rate of 50,000 tons a day in one mine, and alleging that the suit is an attempt to use the courts to coerce the directors into surrendering to demands of labor organizations. The court reserved decision on the motion to dismiss.

In a statement issued by Louis S. Cates, president of Phelps Dodge Corporation, he said:

"The complaint in the present suit, in addition to some false and totally irrelevant charges concerning the grade of ore which the corporation mines, seeks to have the court override the judgment of the directors in conduct of relations with labor. It proceeds on the entirely novel theory that directors can be held liable for not yielding at once to the demands of labor, or for not obeying orders of the National Labor Relations Board pending appeal to the courts. The theory of the complaint is that the directors must bear personally all expenses of appealing from the

orders of the board to the United States Court of Appeals and to the Supreme Court of the United States, although that right of appeal is given by the National Labor Relations Act itself."

RITTER PRODUCTS ERECTS CHROME PLANT IN OREGON

IT IS reported that the Ritter Products Corporation, Ritter Park, Rochester, New York, is working with Earl K. Nixon, director of the State Department of Geology and Mineral Industries, 702 Woodlark Building, Portland, Oregon, on the recovery of chromite from Oregon beach sands.

A pilot plant has been built at Bandon, Coos County, Oregon, by the Ritter concern in order to work out proper concentration methods for the various properties in the area. This plant is expected to be in operation by the middle of August. The Johnson process of electrostatic separation, which is a development of the earlier Huff process for the separation of iron and zinc, is being used, and the company reports that the process is a low-cost, efficient method of commercial concentration of chrome ores.

Professor George W. Gleeson of Oregon State College, Corvallis, Oregon, who has done a large amount of research on these sands, is acting as consultant for the Ritter concern.

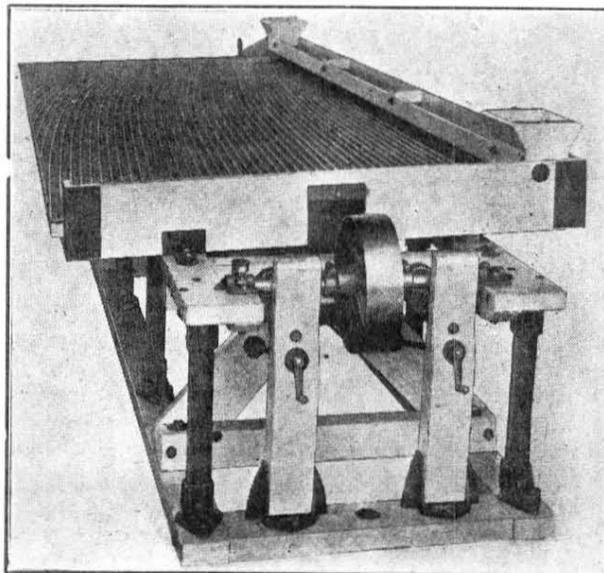
Herbert Banks Johnson, vice-president of the Ritter Products Corporation, is largely responsible for the development of the Johnson process.

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LOS ANGELES CALIFORNIA

ARMY-NAVY PRODUCTION AWARD GIVEN PHELPS DODGE

THE Army-Navy production award for high achievement in the production of war equipment has been conferred upon plants of the Phelps Dodge Copper Products Corporation at Elizabeth, New Jersey, Yonkers, New York, and Fort Wayne, Indiana, according to an announcement made by Wylie Brown, president. Notification of the award came to the company in a letter from Undersecretary of the Navy James Forrestal.

In conferring this award, the Army and Navy presents a flag to be flown above the plants and gives to every member of the plants a pin to be worn as "a symbol of their permanent contribution to human freedom." The new award was announced only recently and Phelps Dodge is one of the first companies selected to receive the honor.

The Phelps Dodge Copper Products Corporation, which maintains headquarters at 40 Wall Street, New York, New York, is a subsidiary of Phelps Dodge Corporation.

CALUMET AND HECLA RELEASES REPORT FOR HALF-YEAR 1942

THE Calumet and Hecla Consolidated Copper Company and its subsidiaries report for the six months ended June 30, 1942, a net gain carried to earned surplus of \$470,269. Revenue from metals sold amounted to \$3,820,139, the production cost of which was \$2,384,717. Depreciation and depletion totaled \$591,287.

The company, which operates in northern Michigan, produces copper from two sources, from its mines and from tailings left by former operators. The premium price paid copper producers on production in excess of the 1941 level is expected to benefit the company, which can afford to increase production under the present price of copper. Calumet and Hecla production costs are high, about 9 cents a pound before depreciation and depletion. During 1941 the company produced 14,350 tons from its mines and 16,383 tons from reclamation plants.

PROCEDURE FOR CLAIM HOLDERS SET FORTH IN NEVADA BOOKLET

A SECOND edition of the pamphlet, "How to Locate and Maintain Mining Claims," has been issued by the State of Nevada and is available at Surveyor General McLeod's office in Carson City. The first edition was published last year. The booklet explains in simplified form the procedure to follow in locating and holding mining claims in Nevada and covers both state and federal acts to and including June 1, 1942. Sample forms are included to demonstrate clearly the routine to be followed by the claim holder.

DEVELOPMENT OF IRON ORE IN CALIFORNIA INDICATED

ACCORDING to Edward Morris, Box 49, Sacramento, California, general manager and chief engineer of California Iron and Minerals Company of San Francisco, development of a supply of iron ore east of Lucerne Valley, in the San Bernardino desert country of California, is indicated in the near future. The ore is to be developed in order to feed the projected steel plant in the Fontana district of California.

It is reported that California Iron and Minerals has purchased from the Southwestern Ore Corporation, the Bessemer iron ore property east of Victorville, California. In addition, the company has filed on 30 other claims in the Bessemer sector, and development work has already started, in the expectation of putting the property on production within six months.

A road has been built eastward from Lucerne Valley, as a government extension of the paved highway to Lucerne, to facilitate development of the iron deposit, which lies along Iron Ridge.

The U. S. Bureau of Mines is said to have completed a preliminary study which is expected to be followed by a core-drilling campaign to determine the extent of the ore deposits.

NEW SPECIFICATIONS ISSUED FOR WOOD PRESERVATIVES

EMERGENCY federal specifications for wood preservatives have been issued by the U. S. Forest Products Laboratory, at the instance of the War Production Board, in an effort to conserve chromium, copper, and phenol compounds for vital war uses. The emergency formulas are offered as wartime substitutes, to be used where they will serve as suitable alternates to the standard chrome-bearing compositions, for preservative treatment of lumber for military, war-plant, and shipbuilding needs.

Chromium compounds are used in wood preservatives as fungicides and mordants to prevent leaching of the preservative from impregnated wood. Phenolics and copper compounds are powerful fungicides. It is estimated that over 1,500,000 pounds of chromates and 100,000 pounds of phenolics are used annually in processing lumber to protect it against rot and termites.

According to J. F. Linthicum, president of the American Lumber and Treating Company, the withdrawal of chromates, phenolics, and copper compounds will mean some lowering of wood-preserving standards, but he calls the "emergency specifications" adequate for most structural needs. The specifications offer two formulas. One is a 50-50 mixture of borax and boric acid; the other contains equal parts of sodium fluoride, sodium arsenate, borax, and boric acid. Linthicum compares the latter to his company's Wolman Salts, except that the borax and boric acid replace chromate and dinitrophenol. No substitute for coal tar creosote has been specified. However, provision has been made to relax federal requirements for creosote purity during the emergency since many treating plants are having difficulty in obtaining high-purity creosote.

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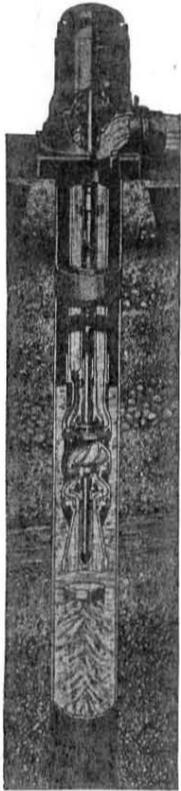
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the operation of mine equipment. Apprentice miners are assigned to experienced miners and receive pay, while the experienced miners with whom they work are paid more than the prevailing scale.

Anthony Anable, a member of the Dorr Company's staff since 1923, and advertising and publicity manager since 1932, has been commissioned a line officer in the U. S. Naval Reserve with the rank of Lieutenant Commander. He left August 14 for active duty in an administrative capacity at the U.S.N.R. Midshipmen's School (Officers' Training School) in New York. Commander Anable served as an ensign in the Naval Reserve in 1917-1919 aboard one of the naval transports that carried our first A.E.F. to France. For the present, it is planned to have his duties as advertising manager with Dorr carried on by his assistant, Albert Morris, who has been a member of the department for five years.

Allan E. Jones, Box 991, Oroville, California, has been appointed general manager of all Hoefling Brothers operations in California, it was announced recently. Jones had been employed formerly as general manager of the Surcease mine near Oroville, California, which is controlled by the Hoefling interests. Kevin Malone, formerly underground superintendent at the Surcease, is now superintendent of the company's Spud Patch Placer operations in San Bernardino County, California, and is being addressed at Atolia. William B. Messner, formerly mill superintendent at the Surcease mine, now holds the position of superintendent.

Albert S. Konselman, formerly of Manitou Springs, Colorado, D. Walter Jaquays, Phoenix, and John P. Harmon, formerly at Miami, Arizona, comprise the staff of the Mineral Production Security Division of the Bureau of Mines, newly established in the Security Building, Phoenix, Arizona. The objective of the new Bureau of Mines unit will be the prevention of subversive activities and sabotage in mines. Konselman, a former Bureau of Mines consulting engineer, has been associated with the Golden Conqueror Mines, Inc., at Manitou Springs as supervising engineer. Jaquays was working with the Miami Copper Company and later the Park View Mining Company before being appointed to the staff of the new office, while Harmon also has been connected with the Miami Copper Company as ventilation engineer.

OBITUARIES

W. E. Mintzer, field manager and director of the Washington Nickel Mining and Alloys, Inc., died last July. Mintzer had operated various mining properties in Washington and owned the nickel and iron claims which Washington Nickel acquired from him in 1936.

John F. Reynolds, 75, of Denver, Colorado, died August 10, 1942, in his home in Denver. Reynolds, who had retired two years ago, was born in Central City, Colorado. He was active in the Globe smelter in Denver and at the Durango smelter of the American Smelting and Refining.

ARIZONA BUREAU DEVELOPS OREGON CHROME PROCESS

METALLURGICAL methods for the treatment of Oregon beach sands, to be processed in a large wartime plant by the



Edwin H. Crabtree, Jr.

Krome Corporation of Marshfield, Oregon, have been developed by the Arizona Bureau of Mines at the University of Arizona, according to announcement by Dr. T. G. Chapman, director of the bureau.

Edwin H. Crabtree, Jr., metallurgist at the Arizona Bureau of Mines, Tucson, has been granted a four-month leave of absence by the bureau and has gone to Oregon where he will supervise the mineral recovery plant of the Krome Corporation.

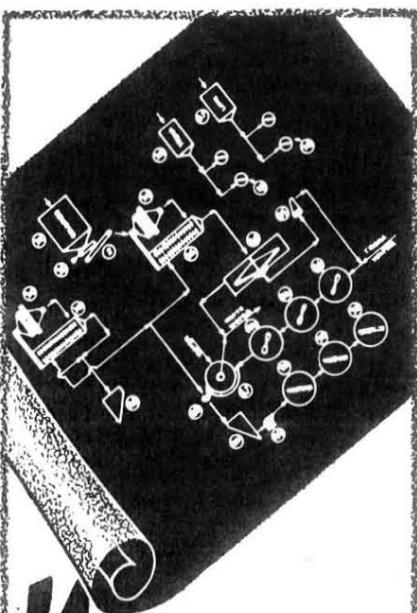
Crabtree, in association with Professor A. J. Thompson of the University of Arizona, has worked out methods of treating the Oregon beach sands for recovery of chromium, titanium, and zircon. The sands were sent to Tucson because the Arizona Bureau of Mines was adjudged the best equipped to handle the work.

Recovery is to be made of chromium, titanium, and zircon, wartime use and needs for chromium making the new plant feasible. The construction of a concentrator, magnetic separation, and furnace reduction plants has been underway for several months and the plant should be in operation by mid-September. Figures relating to the size, cost, and capacity of the plant have been withheld by the Arizona bureau in cooperation with federal censorship regulations.

All standard methods were tested and the final method adopted depends largely upon the magnetic separation of the mineral sands by a new type of machine that combines large capacity with low power consumption. The concentrator plant will produce a concentrate composed of chromium, titanium, and zircon by tabling and flotation. These concentrates are to be dried and the three minerals separated by the magnetic plant. From the furnace reduction plant will come ferro-grade chromium concentrates required for the manufacture of chromium steel.

Laboratory work on the reduction of the chromite concentrate to produce ferro-grade chromium for the steel manufacturers was done by Professor John B. Cunningham of the university college of mines. The Krome Corporation furnaces will carry out his processes.

In announcing the success of the bureau's tests, Dr. Chapman said that ordinarily the Arizona bureau would confine its services to Arizona ores, but during the wartime emergency has extended its work to other states when called upon for aid. The Krome Corporation, he said, requested Arizona aid in the belief that other laboratories in the West were not as well



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lower levels of the mine. Three men are being employed under the direction of Henry Williams, Jr., Hillside, Arizona, lessee. The property is owned by William Burns of Prescott, Arizona.

Three men are being employed in development work at the **Zannarapolis** tungsten mine in the Burro Creek district in Yavapai County, near Hillside, Arizona, and, after making several more open cuts along the outcrop, the owners, J. P. Zannaras and J. P. Robinson, Jr., both of Hillside, plan to start production immediately. The mine consists of 31 mining locations, and mine workings at present include four open pits and several trenches, the deepest of which is 7 feet. A 110-cubic foot Ingersoll-Rand portable compressor, jackhammer, and drills are on the ground, while machinery at the mill consists of a 6 by 10 jaw crusher, ore feeder, hydraulic classifier, regular size Deister Plat-O table, a 3½ by 7½ ball mill, and one 7,000-gallon thickener tank. The owners plan to add flotation cells to the 40-ton mill which is located in Mohave County 14 miles down the wash from the mine. A road has been started by Yavapai County which is expected to cut off about 5 miles of the distance from mine to mill.

Dewatering of the shaft has been started at the **Diamond Joe** mine 11 miles northeast of Wickenburg, Arizona, and it is understood that when dewatering is completed, if results warrant, an application for an RFC preliminary development loan will be made. A car of ore is reported to be ready for immediate shipment. The mine is a silver-lead property, owned by the Diamond Joe Mining Company, and has been leased recently to C. D. Howe of Yarnell, Arizona. Howe is employing three men at the mine at present, but plans to increase the crew in the near future.

John J. Christie, Box 1853, Tucson, Arizona, is applying for a Reconstruction Finance Corporation loan to make the **Orizaba** mine 23 miles southwest of Casa Grande, Arizona, accessible for examination. The property carries values in molybdenum, lead, and silver, and is owned by G. A. Wilson of Tucson and Roy Ward, Casa Grande. The mine formerly was worked by the Plato Mining Company, Inc., but has been inactive for a long time.

The **Gladiator Mining Company** is expecting to start daily shipment soon of one carload of gold-copper-lead-zinc ore from the Gladiator mine near Crown King, Arizona, to the Golden Belt mill, a distance of about 12 miles. The mill was taken over recently by the Gladiator concern to treat ores from the mine and the company has been revamping the flotation plant to treat the Gladiator complex ores. The mine is opened by a 200-foot inclined shaft and north and south drifts. E. M. Moores of Crown King is president of the Gladiator Mining Company, and operations at the mine are under the direction of A. N. Bennett. Sixteen men are employed in the mill and mine.

An amendment to the articles of incorporation of the **Continental Mining Corporation** changing its name to **Continental**

Mining and Smelting Corporation was filed recently with the Arizona Corporation Commission. Company officials include L. M. Brown and Ralph E. Herron of Globe, Arizona, and Frank E. Tippet, Box 1813, Miami, Arizona.

It is reported that the operators of the **Lime Cap** mine 13 miles north of Clifton, Arizona, have obtained an RFC loan for development and equipment. The property has values in lead and zinc, with some vanadium, and is owned by the Danenhauer brothers, S. G. Murillo of Clifton, Charles K. Barnes of Duncan, Arizona, and L. E. H. Huber of Phoenix. Ten men are employed at the mine in development work. The operators have been shipping ore to the Ozark Smelting and Mining Company plant at Coffeyville, Kansas.



Although **Big Bear, Ltd., Inc.**, recently suspended operations at the old **Lucky Baldwin** mine for the duration of the war, it is reported that the concern is considering operating its 150-ton flotation-amalgamation plant to handle lead and zinc ore being mined in the area. The Lucky Baldwin property is located near Lake Baldwin in San Bernardino County, California, and the company has been mining and milling gold-silver ore until the present wartime emergency, employing a crew of 28 men. Work was directed by S. S. Chatfield, Big Bear Lake, general superintendent. A. H. Walker is assistant superintendent, while F. M. Watkins, Box 4, Lost Hills, California, is president and general manager of the Big Bear company.

David Dondero, Lakeport, California, is reported to be developing a chrome deposit in Lake County, California, with more than 60 tons of ore stockpiled. Shipment has been held up pending the construction of a road to the deposit which is located in a mountainous section.

Hydraulicking operations have been suspended for the season at the **Relief Hill** gold mine near Bloomfield, California, according to C. E. Clark, superintendent. Two shifts, with a total of 35 men, have been employed at the Nevada County property, operating two 7-inch monitors. It is expected that operations will be resumed sometime before the first of January 1943, when water will be available for dredging.

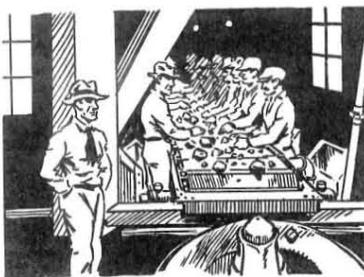
Russell J. Wilson, 7 Hazel Street, Larkspur, California, is understood to have taken over the **Big Sandy** mill at Kelsey and started milling operations to treat the lower grade ore from chrome deposits in the Garden Valley, California, district. Wilson has been doing development work at the deposits for the past three months and several shipments of high-grade ore have been made to the Metals Reserve Company's stockpile at Auburn, California. Development has reached a depth of 18 feet where a 10-foot lens of 38 per cent ore has been encountered. J. H. Franklin, Garden Valley, California, who formerly

was mill superintendent at the Feliciana mine in the same district, will be in charge of operations at the Big Sandy mill, while Louis Capurro, also at Garden Valley, will be in charge of the chrome mining operations. Wilson is owner and operator of the Feliciana mine near Midpines, California, and also owns the Black Oak mine at Garden Valley.

The **Natomas Company**, Thomas McCormack, Forum Building, Sacramento, California, president, has declared the regular quarterly dividend of 25 cents a share on capital stock, payable October 1, 1942, to stock of record September 11, 1942. The company operates seven dredges in the Folsom district of California.

The **Pacific Mining Company**, P. R. Bradley, Jr., Jamestown, California, president and general manager, has acquired several chrome properties near Jamestown in Tuolumne County and has started construction of a 100-ton mill. It is expected that the plant will be in operation before the first of 1943 and will turn out 30 tons of 45 per cent concentrates daily. The Pacific Mining concern also operates the Pine Tree, Jenny Lind, and Josephine gold properties in the same district.

It has been announced that the **Central Eureka Mining Company** is closing down operations at its Sutter Creek, California, gold properties and is testing a strategic metal property in the Amador County district. Initial investigations have been satisfactory, and if results of a more complete examination are encouraging the company will take a lease on the property. C. C.



Prior, 111 Sutter Street, San Francisco, California, is president of Central Eureka.

The **Mine Development Company** is reported to have leased the **Pride of Mojave** mill three miles south of Mojave in Kern County, California, and is revamping the plant so as to be able to begin recovery of tungsten sometime in September. It is planned that most of the custom ores treated at the mill will be marketed through the Metals Reserve Company. Officers of Mine Development are: Hewitt S. West, Box 776, Atolia, California, president; H. R. Golenor, vice-president; and James I. Moore, 2850 Fremontia Street, San Bernardino, California, general manager. Company offices are located at 610 South Broadway, Los Angeles. Production has been started at its **El Mirage** property north of El Mirage Lake in the Shadow Mountain district of San Bernardino County, California, by the Mine Development Company. The claims have been under development for the past four months and tests have indicated that high scheelite recovery may be expected. Ore bins are being constructed at the property at pres-

ent and it is planned to increase the capacity in the near future.

Ventures, Ltd., a Canadian concern, is reported to have taken an option from D. B. Adamson of Bishop, California, on the **Adamson tungsten** mine near Bishop. Operations were backed formerly by Panaminas, Inc., a New York company. A tramway will be built at the mine and some equipment installed during the summer in preparation for the winter program, which will include driving a tunnel for further development work. Thayer Lindsay is president of Ventures, Ltd.

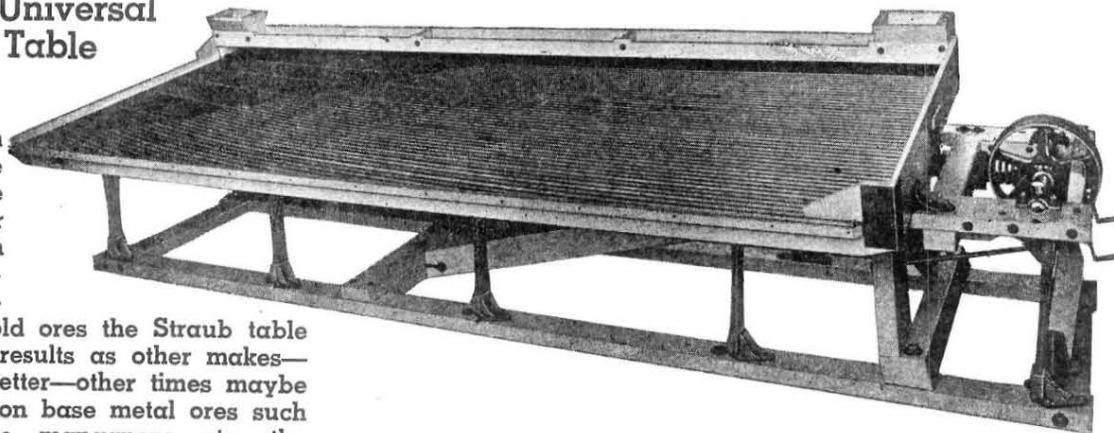
It is expected that development will be started in the near future on a manganese deposit at Skaggs Springs, Sonoma County, California, acquired recently by A. T., R. J., and F. O'Connell, 234 Twenty-second Avenue, San Francisco. The property is being leased from the **Star Springs Mercury Company**, a group of Hollywood movie actors, among them Reginald Owen, Cary Grant, Randolph Scott, Frank Morgan, and others. The company is working a mercury property at Skaggs Springs and is reported to be holding the mineral rights to other properties in the area. Machinery and equipment is being installed at the O'Connell mine, with R. J. O'Connell in charge of work.

Imperial Metals, Inc., of Los Angeles, California, is reported to have taken an option from J. Percy Hart of Glendale on the old **Cerro Gordo** mine located near Keeler in Inyo County, California. The Cerro Gordo carries values in silver and lead and consists of 43 patented and 20 unpatented

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claims. Hart has held the Cerro Gordo property for several years, operating as the Silver Spear Mining Company. The mine is located in the same district as the property of the Estelle Mines Corporation which Imperial Metals has been working. Sam B. Mosher, Signal Oil Building, Los Angeles, California, is president of Imperial Metals, Inc.

The Dinuba Mining Company is leasing the Harrell mine in Drum Valley, California, from the Parlier Prospecting Company, owned and operated by Charles A. Parlier and W. C. McRae of Parlier, California, Avery Woolley of Dinuba, and Glen Henry and Tyler Jack of Reedley. Bruce McDonell, 304 State Office Building, Sacramento, California, heads the Dinuba concern.

Satisfactory ore has been encountered as a result of drifting on the Lone Pine claim of the King of Pine Creek Mining Company's property at Adin, California. The company acquired the ground from the Hayden Hill Gold Corporation this summer at a purchase price of \$60,000. An extensive development program has been scheduled by the company, including such items as the reconditioning of the mill to provide for treatment of 75 tons of ore daily and the exploration of the North Star claim in the near future. Carl Halstrom, 419 Symons Building, Spokane, Washington, is president and general manager of King of Pine Creek Mining Company, Ltd.

The Martin-Walling Mining Company is starting to dewater the 510-foot shaft at its property 12 miles from Coulterville in Mariposa County, California. After dewatering has been completed, the Martin-Walling concern is planning to install a 50-ton mill and begin active mining operations at the property. The mine was acquired by the company about two years ago under a lease purchase contract and since that time considerable development work has been done on the ground. Executive offices are being maintained at 565 Fifth Avenue, New York, New York, B. N. Rosenbaum, president.

Following extensive examination of placer scheelite possibilities in the old Spud Patch area at Atolia in San Bernardino County, California, a strip mining operation is being planned by the Hoefling Brothers, J. W. Hoefling, managing partner, Box 786, Sacramento, California. Equipment is on the ground and plant construction has been started. It is expected that operations, carried on under the name of Spud Patch Placer, will be under way late in September. Stripping will be done with a 2½-yard dragline and an RD-8 Caterpillar unit. The washing plant will have a capacity of 50 yards per hour. The Spud Patch property was a scheelite producer during the last war. Kevin Malone, Atolia, is superintendent of operations at the new Hoefling project. Hoefling Brothers also operate the Surcease mine 20 miles northeast of Oroville, California. Operations at this property, which carries values in gold, have been curtailed to about 60 per cent of capacity, it is understood. W. B. Messner is superintendent of these operations, and Allan E. Jones is general manager of all Hoefling

operations. Both are addressed in care of the Surcease mine, Oroville, California.

The American Potash and Chemical Corporation and subsidiaries have reported for the six months ended June 30, 1942, an estimated net profit of \$965,081 after federal income and surtax. This is equal to \$1.83 a share on 528,390 shares of capital stock. This profit compares with a net loss of \$72,222 in the first half of 1941, because the plant was shut down from March 14 to July 2 due to a strike. The company operates at Trona, California, and recently increased its plant capacity with an expenditure of approximately \$1,300,000 for two improvement programs which were started early in the spring of this year. F. Cecil Baker, 50th Floor, 70 Pine Street, New York, New York, is president of American Potash.

The Portola Corporation is reported to have placed in operation the smaller of two mills at its Plumas-Eureka mine near Johnsville in Plumas County, California. It is expected that, when old workings which are being reopened at the property are exposed sufficiently, the second plant, which has a capacity of 100 tons per day, will start operation. The long working tunnel at the Plumas-Eureka property has been reopened and ore from the adjoining Seventy-Six mine is being treated in the small 25-ton mill. William J. Loring, El Dorado, California, is manager for the Portola Corporation, and O. K. Eheler, Johnsville, is general superintendent. The company is said to be operating the property under lease and option from the owner, C. A. (Bert) Lundy of Blairsden, California.

The B. C. M. Mines, R. D. Carse, general partner, Box 214, Tehachapi, California, is carrying on an extensive prospecting program at its property four miles south of Tehachapi in Kern County. The company, a limited partnership, composed of Vernon Bettin and E. P. McMillen, limited partners, and Carse, general partner, holds a master lease on the Summit Lime Company property, comprising some 5,700 acres, and has granted some subleases on the ground, one of these being held by Edwin E. Sholin. Carse and associates have shipped from the various prospects 4,685 pounds of ore, which produced 33.06 units of WO₃, an average of better than 14 per cent. Although the veins are quite small at the surface, they are improving with depth, and the scheelite is found to be more continuous in its occurrence.

The Bradley Mining Company is operating at capacity its furnace and new mill at the Sulphur Bank mine near Clearlake Park, California, and extensive reserves of cinnabar ore are said to be blocked out. The company is employing 90 men at present. Work is under the direction of A. F. Wolbert, general superintendent, with R. E. Boyce as assistant superintendent, both of whom are addressed at Clearlake Park. Worthen Bradley, 425 Crocker Building, San Francisco, California, is president of the Bradley concern, and F. A. Hammer-smith, 920 Crocker Building, is purchasing agent.

The Coggins chrome mine located near Dunsuir in Siskiyou County, California,

is reported to have been acquired under lease and bond by Manley M. Brown, Dunsuir. Several carloads of chrome ore already have been shipped from the mine.

Complete shutdown of the Alabama mine at Penryn, California, at the end of August has been announced by the **Alabama California Gold Mines Company**, James Moore, Box 524, Colusa, California, general manager. The reason given for the shutdown was the lack of skilled miners. When operating at capacity the company employed 160 men at the mine, but during the last few weeks the company payroll dropped to 60 men. It is planned to place the mine in production as soon as war conditions permit. In the meantime the company is transferring all of its employes and some of the machinery and equipment to a quicksilver property which the company is working in Lake County, California. J. J. McCord is general mine foreman for Alabama California, and Thomas Blazer is mill foreman, both of Penryn. C. A. Reed, assistant superintendent is in charge of closing the Alabama mine.

W. G. Donaldson, Box 296, Solvang, California, who recently acquired the **Red Rock** quicksilver mine in Santa Barbara County, California, is producing an average of 45 tons of quicksilver ore daily. The mine is located 40 miles north of Santa Barbara, and had not been operated for some time. Charles Gruenig, also addressed at Box 296, Solvang, California, is

superintendent of operations at the mine. Both Donaldson and Gruenig formerly were associated with Greenan Quicksilver, Inc., of Winnemucca, Nevada.

G. M. Trent, Auburn, California, is planning to make regular shipments of zinc ore from the **Buzzard** mine to the International Smelting and Refining Company at Salt Lake City, Utah. The mine is located three miles down the American River from Rattlesnake, which is south of Auburn, California. The property was at one time a gold-silver producer.



The **Golden Cycle Corporation** reports treatment of 35,112 tons of ore during the month of June, which compares with 40,917 tons in June of 1941, or a drop of about 14 per cent. The ore averaged \$11.07 a ton, which is above normal. During the June quarter the mill treated 101,277,215 tons of ore with a gross value of \$1,121,216. About 95 per cent of the ore, which averaged \$10.75 a ton, came from the Cripple Creek camp. Ore from other parts of the state averaged \$17.98 a ton. Merrill E. Shoup, Box 86, Colorado Springs, Colorado, is president.

A 25-ton mill is being installed by George B. Dudley of Carbondale, Colorado, for his

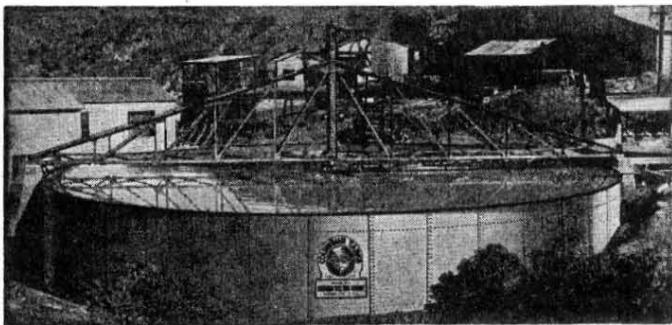
property on Bull Dog Creek 18 miles south of Carbondale in Pitkin County. Dudley has worked this ground since 1930.

A crew of 10 men is employed by the **Callahan Zinc-Lead Company** at its Akron property in the White Pine district near Gunnison, Colorado, and ore is being shipped from Sargents. The company acquired the property in 1937 and reopened and equipped it. Since late in 1939, however, it has not been operated by the company, except for maintenance work, and a few lessees worked a small portion of the ground. Ore values are in lead, silver, and zinc. D. R. McDonald and L. B. Stitzer are in charge at Gunnison.

Arthur M. Woodworth of Sargents, Colorado, is continuing work on his **Steuben** property in the White Pine district of Gunnison County and on his **Lucky Chance** group of claims. Also in the district is the **Erie** property, recently leased to W. Verne Brown of Sargents.

R. E. Plumbe, 2266 Eudora Street, Denver, Colorado, and S. S. Graham are reported to be developing mining claims in the Cement Creek area near Silverton. Equipment is being taken to the property which is owned by Graham.

Expansion of tungsten mining activities and curtailment of gold production are announced by the **Slide Mines, Inc.**, Ward E. Terry, 420 Security Building, Denver, Colorado, president. The company expects to



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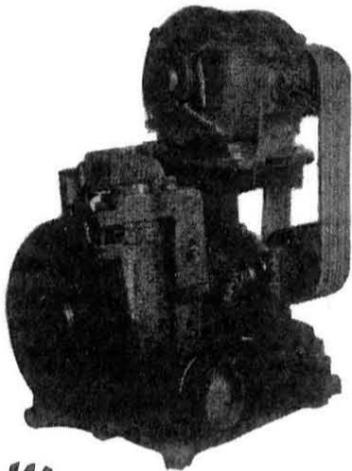
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Globe in Gila County, Arizona. The entire production is being shipped to Asbestos, Ltd., of New York. Michault also is developing a deposit of soft fiber asbestos. Future plans include the construction of a 50-ton mill. At present 20 men are being employed under the direction of William Andrews, Globe, mine superintendent. The property is located on the San Carlos Indian Reservation.

The Apache Manganese Company, Robert Muir, secretary-treasurer, 518 Goodrich Building, Phoenix, Arizona, has made application for an RFC, Class B, development loan for its property located 54 miles northeast of Globe, Arizona, in the extreme southwest corner of the Apache Indian Reservation. Three men are employed at present, under the direction of Al Bohse, mine superintendent, 526 Gibson Street, Miami, Arizona, and "Low Grade A" manganese ore is being mined. The ore is hauled to Globe by truck and shipped by rail to Deming, New Mexico. The shipping ore represents only approximately one-third of the vein width and the company is desirous of developing the property to the extent that mill construction will be warranted. That would permit the milling of stope fillings and low-grade sections of the vein. The road problem also is difficult and the company is interested in securing construction of a new one under the access road program. Dr. M. E. Fulk, Glendale, Arizona, is president of the company.

A crew of six men is employed at the Thunderbolt mine four miles south of Cleator, Arizona, under the direction of J. H. Christensen, resident manager for the Black Canyon Mining Association. The mine is equipped with a 50-ton flotation mill and irregular shipments are made to the El Paso smelter. Principal values are in lead, silver, and zinc, and tests are being made to determine the steps necessary for a zinc recovery. A small vein was cut recently which, it is stated, will run 1,500 ounces silver and 70 per cent lead.

Lawrence and Harry DeZee are operating the Del Pasco mine four miles north of Crown King, Arizona, and are producing approximately 100 tons of lead-silver ore monthly. Shipments are being made direct to the smelter at El Paso, Texas.



A large-scale production program is planned for the War Manganese Company property in the Paymaster district of Imperial County, California. The property is located in the Barren Mountains about 30 miles from Glamis, California, and is on the Southern Pacific main line. It is comprised of nine claims and, with some adjacent mines, is said to have produced more than 3,000 tons of manganese during the last war. Facilities at the mine include a 150-ton mill, camp buildings, and a permanent water well pumping 260,000 gal-

lons a day. A small amount of high-grade ore is being produced at present. Roy M. Pike of San Francisco and associates are developing the property.

A \$50,000 road is being built to serve a group of claims on the headwaters of McGee Creek 40 miles northwest of Bishop, California. The eight claims, known as the Scheelore group, are owned by H. A. Van Loon and J. E. Morhardt, both of Bishop. At present, work is confined to what is known as the No. 3 ore body, and consists of sluicing slide material into a plant equipped with screens and jigs. The plant has a capacity of 50 tons per day and is reported to be producing a concentrate assaying from 60 to 70 per cent WO.

Le Roi Mines, Inc., Jackson, California, is treating 150 tons of gold ore daily in its flotation plant. The mine, formerly known as the Lucky Joe, was acquired in 1936 by the present company, headed by W. B. Brooks. In 1939 a new three-compartment shaft was sunk and it is at present down to the 600-foot level. Underground workings include a 1,100-foot drift and two large stopes. The vein is about 12 feet wide. Equipment includes a 60-foot headframe, double-drum hoist, crusher, ore bin, ball mill, classifier, and six flotation cells. Frank Lanyon is superintendent at the mine.

According to reports, Dorothea Reddy Moroney, 1060 Bush Street, Apartment 206, San Francisco, California, has acquired the Ladd property in Siskiyou County, California, and high-grade chromite has been uncovered. Mrs. Moroney is reported to have started development of the McGuffey Creek property in the same district and early production is expected. At present, chrome ore is being shipped steadily from Mrs. Moroney's Joe Rivers mine located 20 miles from Orleans in Humboldt County, California. Altogether, Mrs. Moroney is reported to have shipped 1,500 tons of chrome ore during 1942 from her various holdings in California and Alaska. She maintains an office at Hamburg, California.

J. M. McKnight of Scotia, California, and associates are making regular shipments of high-grade manganese ore from their property in the Mad River mining district of Trinity County, California. New machinery has been installed at the mine and the ore is being trucked to the Redding, California, government stockpile. McKnight also is operating the Blue Jay Extension No. 1 and Grub Stake mines located near Scotia in Humboldt County and production of manganese and chrome ores is being carried on.

Hauling of chrome ore from the Oxford mine to the mill near Downieville, California, is reported to have been started. The mill was improved recently by C. L. Best, the new operator of the property, and will treat chrome ore at the rate of 100 tons daily. The road which has been under construction to the mine has been completed, and arrangements have been made to install a Diesel engine for generation of electric power at the mine. The mine formerly was one of the foremost producers of gold in Sierra County, Cali-

ifornia, and it is understood that development of gold ledges in the Oxford mine will be carried on by the Best interests in conjunction with the chrome production. Approximately 25 men are being employed under the direction of L. L. Huelsdonk. Best also owns the Ruby gold mine at Goodyears Bar, California, which was closed down recently because of a labor shortage.

Panaminas, Inc., a subsidiary of Ventures, Ltd., is operating the Adamson tungsten mine near Bishop, California. The property is being worked under option from D. B. Adamson of Bishop, owner. Two tramways are under construction, and one of three proposed adits is being driven in preparation for winter operations. It is planned to ship approximately 300 tons of ore daily to the U. S. Vanadium mill near Bishop. A. H. Heller is manager. The Adamson property lies at an elevation of almost 13,000 feet.

The **King Solomon Mines Lease** organization, composed of James Christensen, James Nosser, Max Hess, and Emil Schultz, has discontinued activities at the King Solomon mine near Randsburg, California, during recent months and now is leasing the Flat Iron tungsten property from the Atolia Mining Company, Atolia, California. High-grade ore mined during August is reported to have produced concentrate averaging 65 per cent WO₃.

Nine sets of lessees, totaling 18 men, have arranged for leases on property of the **Atolia Mining Company** at Atolia, California. In addition, the company is employing a crew of 90 men, under the direction of Hugh W. Coke, superintendent, Atolia. It is reported that the company's Papoose mine, reputed to have been the richest tungsten mine in the world during the earlier days of Atolia, is to be reopened soon as a company operation.

The **Newmont Mining Corporation**, Charles F. Ayer, president, 14 Wall Street, New York, declared a dividend of 37½ cents a common share, payable September 15 to stockholders of record August 29.

It is reported that engineers for the **Anglo American Mining Corporation, Ltd.**, Walter Lyman Brown, president, 206 Sansome Street, San Francisco, California, are engaged in developing a tungsten deposit recently opened up in the Woodsford district near Markleeville, California.

Hall Livingston, Auburn, California, is reported to have taken over the **Highway 40** gold mine one-half mile west of Newcastle, California. He operates the Blue Eagle and the Julian mines also. The Blue Eagle is one mile west of Auburn and the Julian is near Newcastle.

The **Golden Queen Mining Company** property at Mojave, California, was closed August 20 for the duration, according to an announcement by W. C. Browning, general manager, 1211 Pacific Mutual Building, Los Angeles, California. The shut-down resulted from inability to secure experienced miners, and it was stated that most of the 125 men employed at the time the mine closed were "green hands". The Golden Queen has been in continuous opera-

tion for six years and is equipped with a 500-ton cyanidation plant.

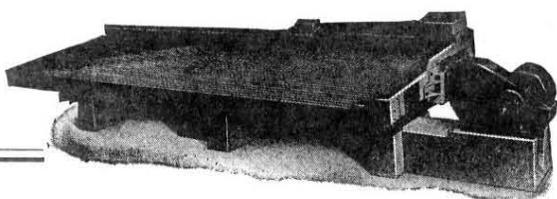
A 25-ton shipment of ore from the **Evening Star** mine, near Cima, San Bernardino County, California, sent to the Tin Processing Corporation's smelter at Texas City, Texas, is reported to have yielded 6.25 per cent tin. It is stated that there are 60 tons of 2 per cent ore on the dumps at the Evening Star property.

E. G. Eberhart and J. F. Stuart have completed construction of a 50-ton chrome reduction plant in the Peoria Flats district near Sonora, California, and it is understood that erection of a second mill, with a daily capacity of 150 tons, is planned as soon as the first plant is in operation. It is stated that ore carrying as low as 12 to 15

per cent chrome may be handled satisfactorily through the plant's reduction process. Shipments will be made under a Metals Reserve contract to the stockpile at Sacramento, California.

Plans for construction of a \$100,000 magnetic separation plant at the property of the **Western Manganese Company**, about five miles from Patterson, California, have been approved, and it is understood that work will begin immediately. The plant is to be built by the General Dry Battery Company. A Baltimore plant owned by the company is being dismantled and shipped to the new mill site. Western Manganese already has a washing and crushing plant in operation at the site and a stockpile of more than 3,000 tons of ore is awaiting

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completion of the new unit. No direct mining operations are contemplated by General Dry Battery, but ore will be purchased from a wide area. E. Laverigne, Patterson, is engineer in charge for General Dry Battery Company.

Small-scale mining operations are proceeding at the property of the Vallecita Mining Company near Murphys, Calaveras County, California, under the direction of Don Steffa, co-owner and superintendent. A crew of five men is employed underground. The mine is opened by a one-compartment shaft and a 3,500-foot tunnel at the 153-foot level. The gravel is treated in a recovery plant on the property. The Vallecita company was organized recently by Steffa; Charles E. White, Vallecita, California; and Nick Ratkovich, Angels Camp, California. It was opened by Steffa in May, 1923, and he operated it for some time. Later it was leased to the Tonopah Belmont Development Company, which is reported to have recovered \$300,000 from the gravel drifts in three years. In the past few years several operators have worked the property. Steffa again took it over in November 1941.

Desert Miners, Box 230, Lone Pine, California, are shipping 250 tons of lead-zinc ore monthly from the Leary lead mine in the Swansea district. Mine development consists of the 130-foot main shaft, 40-foot winze, and 200 feet of drifts. Further drifting is planned at the bottom level, to be followed by 100 feet of shaft sinking. Eight men are employed. The Leary is owned by Fred Leete, Trona, California; Mark Lacey, Olanche, California; Charles Summers, Lone Pine; and Margaret Loundigan, San Francisco.

Harmon and Kempe, Ojai, California, who are operating the Western tungsten mine at Bishop, California, under lease from Western Tungsten Corporation, are producing 3,000 tons of ore monthly. The ore is treated in the 150-ton milling plant. J. B. Forrester, Bishop, is superintendent at the mine, which is located 10 miles northwest of Bishop. The property is developed by open cuts.

The 25-ton Big Chief mill 15 miles north of Caliente, California, is being enlarged to 75 tons, using standard crushing and milling equipment. McKee Brothers, Caliente, who operate the plant, treat ore from 12 of their own claims and do custom milling also. Six men are employed.

The Sierra Tungsten Company, A. J. Stout, manager, Box 1590, Bakersfield, California, is reported to be planning the enlargement of its 50-ton milling plant to 150 tons daily. The company is operating property in the Greenhorn Mountains 12 miles west of Kernville, California.

The long crosscut at the Ancho Erie mine near Graniteville, California, which is being driven to contact the famous Ancho Erie vein, is nearing completion under the direction of Fred Anderson, superintendent, Grass Valley, California. A development program will be inaugurated following the completion of the crosscut. C. A. Helback, 370 Alta Street, Grass Valley, California, is president of the Ancho Erie Mining Company.

COLORADO

The Red Elephant Metals, Inc., is continuing mining and milling operations at its property near Lawson, Colorado, treating 50 tons of silver-lead ore daily. J. D. Cannon, Box 393, Idaho Springs, is general manager; O. J. Cross is mill superintendent and Charles Hull is mine superintendent, both of Idaho Springs. Some consideration has been given by the company to applying for an RFC development loan. No announcement concerning a decision in this matter has been made.

Development of the Aetna property in the Cascade district near Idaho Springs, Colorado, is being continued by the Utze Lode Mining Company, Charles Peek of Idaho Springs, manager. The mine was reopened by the Utze company early in 1942. Albert Hall Peek, 108 Van Buren Avenue, West Hartford, Connecticut, is president.

Labor shortage is reported to be the reason for the suspension of work at the El Paso mine at Cripple Creek, Colorado, for the duration of the war. The property has been operated for the past 18 months by Thomas A. Copeland, 349 East Bennett Avenue, Cripple Creek, and James A. Knight, now with the armed forces. The shutdown includes the shipping of mine dump material which has been carried on by the Colorado Trading and Transfer Company, Troy E. Wade of Cripple Creek, manager.

According to reports, three or more carloads of lead-zinc ore are being sent to the smelter each week from the Lucky Strike mine near Kokomo, Summit County, Colorado. The property, formerly known as the Washington mine, was operated several years ago by E. D. Van Keuren of Kokomo and L. J. Gould of Denver. Present operators started development in March 1941 and began regular production this summer. From eight to ten men are employed with Richard Mackey as superintendent and A. R. Rhine as manager at Kokomo. While principal values are in lead and zinc, some gold, silver, and copper are recovered.

The 700-foot shaft in the Stanley mine is being unwatered, the electric pump running 24 hours a day. The property, which consists of 76 lode and 10 placer claims and three mill sites, all patented, is held by J. B. Furstenberg, 2711 Stout Street, Denver, Colorado. It is located near Idaho Springs in Clear Creek County and includes the ground originally known as the Whale and Hukill lodes, old time producers. Values are in gold, silver, lead, and copper.

It is reported that George H. Garrey, 1550 Sherman Street, Denver, Colorado, and B. T. Poxson, 675 Locust Street, Denver, have acquired the equipment and leases on the Summitville Consolidated property at Summitville, Colorado, and plan to work with a crew of 25 men.

Concentrates from Western States

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



ARIZONA

It is expected that production of 100 tons of copper ore daily will begin in the near future at the old Silver Hill mine located in the Silver Hill district east of the Silver Bell Mountains and about 40 miles northwest of Tucson, Arizona. The property is under lease to A. R. Byrd, Jr., Box 5226, Tucson, Arizona, by the owner, the Silver Hill Consolidated Copper Company. Operation of the mine will be made possible by the approval of a \$20,000 loan by the Reconstruction Finance Corporation. Assays made by RFC engineers have disclosed about 5 per cent copper and approximately 5 or 6 ounces of silver per ton of ore. The ore will be trucked to Marana and then shipped to the Hayden smelter. It is expected that 30 men will be employed in the mine operations. It is understood that very little work has been done at the mine since the last war.

The operators of the Berger-Phillips tungsten property, 75 miles southeast of Kingman, Arizona, in the Aquarius Range, are driving the lower adit tunnel to an intersection of the main vein. It is reported that a blind vein containing commercial tungsten ore was encountered while driving the tunnel. Henry W. Berger, Box 851, Kingman, one of the owners of the property, is in charge of the development work. An additional \$18,000 RFC loan was granted recently for further development of the property, after work performed under the first loan of \$20,000 was so successful that continued work was deemed advisable.

P. M. Woods, Ambassador Hotel, Los Angeles, California, is employing a crew of men to reopen the old Gold King property located 30 miles south of Kingman in Mohave County, Arizona. The mine carries values in gold, silver, lead, and zinc, and it is expected that ore production will be started in the near future. The property, which was operated at one time by the Gold King Coalition, Inc., with Woods as manager, has been idle for some time.

The Miami Copper Company, Miami, Arizona, has declared a dividend of 25 cents payable on October 16, 1942, to stockholders of record October 2, 1942. A similar payment of 25 cents was made by the company in March 1942, while in 1941 only one such payment was made. Sam A. Lewisohn, 61 Broadway, New York, is president of the Miami Copper Company.

Articles of incorporation were filed recently with the Arizona Corporation Commission by the War Metals Corporation of Nogales, Arizona. Incorporators are Colonel J. Campbell Besley, Box 822, Nogales, and Paul Stott, also of Nogales. Capital stock is listed at 100,000 shares

with a par value of \$1 each. Besley is operating the Ruby-Mansfield group of claims located 14 miles northwest of Patagonia in Santa Cruz County, Arizona.

H. R. Scott, Box 872, Globe, Arizona, D. P. McGarvin, c/o Arizona Tours, First Street and Monroe, Phoenix, Arizona, and John A. Devine, Box 872, Globe, are reported to be installing a 30-ton leaching plant at the Troy Copper Company's Rattler group of claims located about one mile east of Troy, Arizona, in the Dripping Springs district of Pinal County. The mine is said to carry a quantity of copper sulphate which is amenable to treatment by the leaching process. Scott is manager of the project which is said to be financed by eastern interests. Production is expected to be started at the property in about 60 days.

An RFC \$5,000 preliminary development loan has been awarded to H. R. Scott and John A. Devine, both addressed at Box 872, Globe, Arizona, and Harry A. Wright, 18 North Scott Street, Tucson, Arizona, a partnership operating the Alice mine. The property is located in Pinal County's Dripping Springs district of Arizona about two miles west of Troy. It is understood that the loan will be used to clean, retimber, and make accessible for sampling and further development the Alice Tunnel which is 2,300 feet in length. Devine is in charge of operations at the Alice property.

Dewatering and retimbering of the old workings is reported to be under way at the Copperville mine by Mines Development, Inc., which is leasing the property with an option to purchase. The company recently was awarded an RFC preliminary development loan on the property, which is located in the Cedar Valley mining district 25 miles east of Yucca in Mohave County, Arizona. Work already has been started on the mine road from Yucca preliminary to moving in necessary machinery and equipment. It is expected that a new flotation mill will be installed at the mine and that the property will be producing within the next two or three months. M. B. Dudley, Kingman, is president of Mines Development.

According to reports, P. W. Carico of Patagonia, Arizona, and Mrs. Henrietta Miller of 1110 St. Mary's Road, Tucson, Arizona, are planning to file application for an RFC preliminary development loan on the Prosperity group of claims. The four claims, formerly known as the Hulda mine, are located five miles southwest of Patagonia in the Richeson mining district of Arizona. Workings at the mine include a tunnel cutting the ore at about 200 feet and a 600-foot drift along the vein. The ore-shoot is reported to be five feet wide for a distance of 80 feet, showing from 5 to 5½ per cent copper.

Arnt Braathen of Amado, Arizona, is reported to be applying for an RFC loan to make accessible his Braathen mine, formerly known as the Combination No. 1 and No.

2 claims and located 10 miles east of Amado in Montosa Canyon, Santa Cruz County, Arizona. Development plans include dewatering and repairing the 60-foot shaft on the Combination No. 1 claim, and raising the collar about 10 feet to prevent flooding. Also, a half-mile road must be improved. Values at the mine are in copper, lead, and zinc. Equipment includes a compressor, pump, and 500 feet of track.

It is reported that operations are being resumed by Patagonia Metal Mills, Inc., and manganese concentrates are going to the Metals Reserve Company's stockpile at Deming, New Mexico. The plant was revamped recently in an effort to produce a manganese concentrate which would meet the MRC stockpile requirements as to grade and size. It is understood that Patagonia Mills has approximately 200,000 tons of proven ore, running 18 to 30 per cent manganese. Del Lord, Patagonia, Arizona, is president of Patagonia Metal Mills, Inc.

Earl E. Sherman, Box 469, Nogales, Arizona, and associates are reported to be shipping from the Indiana mine located at Washington Camp, a few miles from Patagonia in Santa Cruz County, Arizona. Values are in zinc and copper, and the ore is being treated at the Duquesne mill of the Callahan Zinc-Lead Company.



CALIFORNIA

A. R. and Mattie Bickford, Stonyford, California, are reported to have acquired manganese property in western Colusa County, California. It is understood that an application for a preliminary development loan has been made to the Reconstruction Finance Corporation by the Bickfords. Workings at the mine consist of two tunnels which were driven by former operators who were mining for gold. Assays have shown the ore from the Bickford property to contain approximately 40 per cent manganese, and plans are being made to construct a road to the mine in order that production may be started immediately. The property comprises ten claims and it is said that several tons of high grade ore are in sight at the mine.

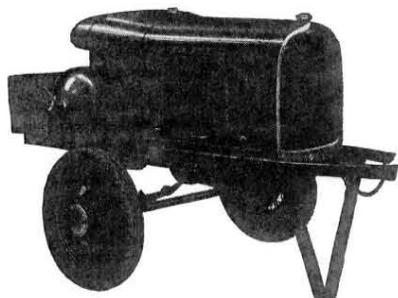
Victor Keller and Charles Butler of Stonyford, California, are said to have filed claims on manganese bearing properties in Stony Creek Canyon, Colusa County, California. Ore is being shipped to Fruto, California.

According to reports, Newton Rutherford, a Stockton, California, attorney, has acquired control of the Stockton Hill mine near Grass Valley, California, to satisfy the amounts due under three trust deeds executed by the Stockton Hill Corporation and the Stockton Hill Mine, Inc. The two corporations are alleged to have defaulted in the payment of the amounts due under the trust deeds and also in other covenants in the deeds. The title to the property, under the provisions of the sale, passes to Rutherford, who was named as beneficiary under the trust deeds.

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Articles of incorporation have been filed by the **Riverside Tungsten Company**, which will maintain headquarters at Riverside, California. Members of the board of directors include L. V. Wilcox and J. L. Richardson, Riverside, W. T. M. Cook, Santa Ana, California, Benton N. Colver, Glendale, California, and Clyde A. Pierson, San Bernardino, California.

It is reported that more than 150 men are being employed by the **Gray Eagle Copper Company**, which is building a concentration plant, tram line, and hotel at its Gray Eagle property near Happy Camp in Siskiyou County, California. It is understood that the distance from the mine to the railroad at Hornbrook, California, will be shortened 19 miles by the three-mile tramway, thus facilitating the shipment of concentrates over the mountains to Thompson Creek. Mining is proceeding in newly opened territory and the company plans to start production early in January of 1943. A total of 260 men will be employed by the company when capacity production is underway. Robert J. Hendricks, Happy Camp, is manager of operations for Gray Eagle.

An 800-foot haulage tunnel is being driven by the **U. S. Vanadium Corporation** to contact an underground ore body at the company's mine near Bishop in Inyo County, California. It is expected that underground ore will supply the mills during the winter months when weather conditions prevent operation of the open pits. Several Eimco Finlay loaders are being added to expedite tunnel driving. At present the company is handling daily approximately 1,400 tons of ore which are being mined from the open pits. The ore contains values in scheelite, molybdenum, and copper. More than 300 men are being employed in the U. S. Vanadium Corporation's mining operations near Bishop and 100 in the mill. Alfredo I. Rodriguez is mine superintendent at Bishop. Blair Burwell is general superintendent of all the company's operations and J. R. Van Fleet is vice-president, both of whom may be addressed at the company's New York office at 30 East Forty-Second Street, New York City.

It is reported that 200,000 tons of 1.5-per cent tungsten ore have been blocked out at the **Dorr tungsten mine** 22 miles northeast of Cima, California, in the New York Mountain range. Sixteen men are being employed at the property under the direction of James Elliott, general manager. It is understood that the project is being backed financially by the **United States Tungsten Corporation**, which invested \$84,000 for the purpose of developing the mine, constructing a road to the property, and building the 40-ton mill, which is in operation. Warren T. Potter, 2632 Boulder Road, Altadena, California, is president of United States Tungsten Corporation.

Development work is progressing at the **Chili Gulch gold mine** near Mokelumne Hill in Calaveras County, California, under the direction of the operator, Mervyn Porteous, Mokelumne Hill, California. A 30-foot headframe has been erected and installation of a hoist, compressor, power line,

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By G. A. Roush, Editor

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THE MINING JOURNAL

PHOENIX ARIZONA

transformer, and trommel mill has been completed at the newly reopened property. The shaft has been cleaned up and re-timbered and the workmen are reported to be following the old drifts, blocking out commercial deposits of ore. A crosscut has been driven on the 150-foot channel and a 120-foot drift was cleaned out to contact the undeveloped portion of the channel.

The **Consolidated Copper Company** is reported to be developing a group of copper claims near Portola in Plumas County, California. Development work is under commercial-grade ore has been blocked out at the property. The Consolidated Copper Company is controlled by Joseph R. Walker, Box 1079, Salt Lake City, Utah.

Equipment for a milling plant, including stamps, concentrators, and an amalgamating unit, is being assembled at the **Jamison** mine near Johnsville in Plumas County, California. Development work is underway and it is expected that production will be started in the near future. The property is under lease from the owner, Colonel C. A. Lundy, Blairsden, California, to George Frasher of Reno, Nevada, and is said to contain rich gold deposits. Noble H. Getchell, Box 2520, Reno, is reported to be associated with Frasher in the venture.

According to reports the **Permanente Metals Corporation** has started operations at a silicon deposit in the Mariposa County foothills about 25 miles northeast of Chow-

chilla in Madera County, California. Mining operations consist of blasting the rock, loading it by power shovels on giant trucks, and shipping it to the company's plant at San Jose, California. Permanente Metals plans to operate the property until the rainy season, at which time it will suspend work until next spring. Approximately 20 men are employed under the direction of John Podey, foreman, and the entire crew makes headquarters at Hotel Chowchilla in Chowchilla. Henry J. Kaiser, Latham Square Building, Oakland, California, is president of Permanente Metals Corporation.

It has been reported by the San Francisco office of the **Tightner Mines Company** that its Red Star mine at Alleghany, Sierra County, California, is being leased at present by the **Yellow Jacket Consolidated Gold Mines, Ltd.**, owner of the adjoining Yellow Jacket and Osceola mines. The Red Star property comprises 140 acres of patented ground, the surface of which is lava-capped, with the veins buried to a depth of 600 feet. It is understood that the main Osceola tunnel follows the Osceola vein into Red Star ground 500 feet below the bedrock, offering an economical means of exploring the Osceola and Tightner veins in the Red Star property. It is reported that the Osceola tunnel has been thoroughly repaired and the face is being advanced into the Red Star. Charles E. Trezona is managing director and Charles J. Ayers is superintendent for Yellow Jacket Consolidated, which has offices at Room 522, Security Building, Los Angeles,

California. The Tightner concern is headed by Robert E. McCulloch, Room 600, 74 New Montgomery Street, San Francisco, and W. T. Jenkins is vice-president; Carlo S. Morbio, secretary; and Edwin L. Oliver, treasurer.

Jack Sever and Elmer Landrebe, both of Cloverdale, California, are reported to be leasing the old **Mitchell** mine near Mercuryville in Sonoma County, California. It is understood that workmen have tunneled about 40 feet following a stringer of cinnabar and free silver, and that operations so far have indicated the possibility of satisfactory production.

According to reports, **Gronzotto and White**, Walnut Creek, California, are carrying on development operations at a manganese property on Post Creek Mountain in Trinity County, California, which was leased from the owner, Charles Crews of Hayfork, California. Ten men are reported to be working with bulldozer and compressor on the property, and shipment of ore from the mine is expected in the near future.

Installation of a portable compressor, power drills, and other equipment at the **Green** gold mine is being carried on in preparation for the extensive development program planned for the property. The mine is located near Placerville in the Mother Lode gold belt of Eldorado County, California, and is being operated by John I. Taylor, Placerville. It has been reported that, while crosscutting for a gold vein,

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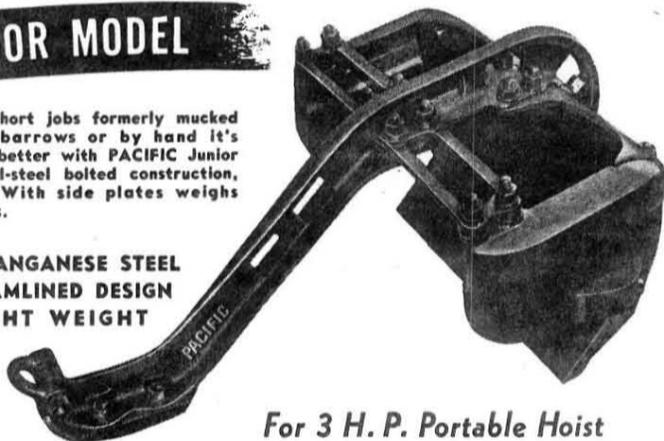
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SPEEDS MUCKING on short jobs or close workings

chrome ore was discovered below the main workings at a depth of several hundred feet and early chromite production from the Placerville mine is expected.

A 100-ton mill for the separation of mica from feldspar and silica is being installed by the **Mica Gem Mining and Milling Corporation** at a high-grade mica deposit located four miles east of Jacumba in San Diego County, California. The property comprises 1,200 acres and was leased by the Mica Gem concern from the owner, Joe Hubble, Encanto, California. It is understood that about 55,000 tons of mica ore have been blocked out at the mine and that there are approximately 170,000 tons of ore in sight. The mica is reported to be of a suitable grade for use in radio equipment and for gunsights. Thomas J. Williams, Box 119, La Mesa, and associates formed the Mica Gem company in the fall of 1941 with a capitalization of 100,000 shares of stock at \$1 par value.

The application of the **Sonoma Chrome Company**, Santa Rosa, California, for a preliminary development loan has been approved by the Reconstruction Finance Corporation, and the Sonoma concern is planning immediate unwatering and reconditioning of its chrome property in Sonoma County, California. Assays of the ore showed 41 per cent Cr_2O_3 and 10 per cent FeO , while an investigation of the mine disclosed that there are a number of openings which need cleaning out or de-watering in order to be put in shape for production. The property, which consists of 1,120 acres about two miles from Camp

Meeker, was leased by Samuel H. Dolbear of Wright, Dolbear and Company, New York, New York, in 1917, but was closed down after the first world war and has remained idle until the present time.

According to reports, present development work at the **Ballard Mother Lode** mine near Plymouth in Amador County, California, is being carried on from the 300-foot level for the purpose of contacting the footwall and hanging wall veins which are east and west of the shaft. It is reported that a drift has been run for a distance of 70 feet and will be continued another 400 feet. At a later date the operators plan to run a drift south to connect with the old Ballard shaft where one shoot of commercial ore already has been blocked out. Work is being conducted with a view to having from five to eight shoots of gold ore developed by the end of the war, at which time it is planned to install milling and recovery equipment at the mine. John Ratto, Sutter Creek, California, is president of Ballard Mother Lode Mines, Inc., the operating concern. George A. Kirkwood of Jackson is vice-president; Robert Jordan of Sacramento, secretary; and Albert Raggio of Jackson and A. E. Gardiner of Sacramento, directors.

A lead mine, comprising 14 claims and located on the Mojave desert near Baker in San Bernardino County, California, is reported to have been sold to the **Yucca Metals Company** of Salt Lake City. The former owners were C. A. and Ellen Housel and Walter H. Voyles, all of Nipton, California. For many years Voyles was presi-

dent of the Yucca Metals concern and managed operations at the company's mine in the Clark Mountain district 20 miles east of Nipton.

COLORADO

The **United States Vanadium Corporation** produced the first metal from its Durango, Colorado, smelter in mid-September. The 75-ton plant was completed recently and is supplied from stockpiles established this spring. These are being increased daily from the output of vanadium mines in the vicinity. Tom Brock of Durango is in charge of the company's Durango unit and Blair Burwell, 30 East Forty-second Street, New York, is general superintendent of all company operations.

A dividend of 1 cent a share, was paid September 24, 1942, to stockholders of record September 15, by the **Midnight Mining Company**, of which F. D. Willoughby of Aspen, Colorado, is president and general manager. The mine and 60-ton flotation mill are producing about 50 tons of lead-silver concentrate and 25 tons of zinc concentrate monthly. About 25 men are employed.

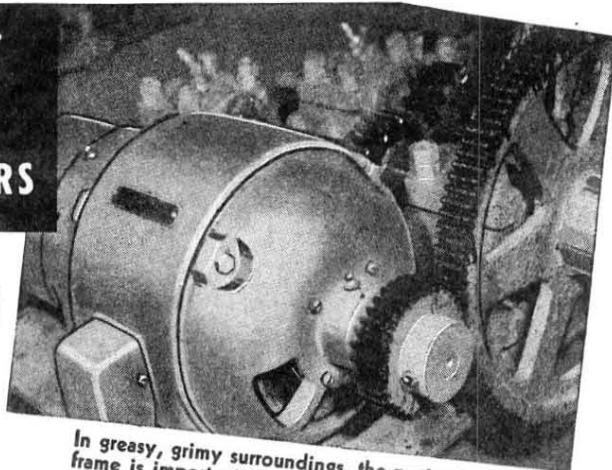
The **Hunt Oil Company** of Dallas, Texas, is reported to have acquired the Caledonian mine in Minnie Gulch near Silverton, Colorado, from the **Caledonian Mining and Mill-**

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Nation's Gold Mines to Cease Production

DESPITE bitter protests by gold mine operators and politicians, the War Production Board has given no indication that it intends to modify the provisions of its Limitation Order L-208. That is the order which halted production at all "non-essential mines." By definition, the term "non-essential mines" means all mining enterprises in which gold is produced, whether lode or placer, unless the operator is the holder of a serial number for such enterprise issued under Preference Rating Order P-56.

According to WPB, the closing order was issued so as to make manpower available for mining operations more essential to the war program. That agency estimates that from 200 to 300 mines will be affected, but that nearly all the labor to be made available will come from less than 50 mines. Officials further estimate that from 4,000 to 5,000 men are now employed in the gold mining industry, and that, when the mines are put on a "stand-by" basis, 3,000 to 4,000 men will be made available for other work. Large lode mines are expected to supply about 2,000 men, dredge mines 750, and the small mines of all kinds the remainder. Of the entire number, less than 1,000 are miners and muckers.

It will be recalled that L-208, issued October 8, 1942, required that within seven days from the issuance date all non-essential mines should cease breaking new ore and halt all development work or new operations about the mine. Also, the order specified that within 60 days from the issuance date the non-essential mines should cease the removal of ore or waste, whether above or below ground, and conduct only the minimum amount of work necessary to maintain buildings, machinery, and equipment in repair, and the access and development workings safe and accessible.

The provisions of the order do not apply to lode mines which produced 1,200 tons or less of commercial ore in 1941, nor to placer mines which treated less than 1,000 cubic yards in 1941, provided such properties do not exceed a production rate of 100 tons, or 100 cubic yards, per month. Another exception was made in regard to the mill, machine shop, or other facilities of a non-essential mine when used in the manufacture of articles to be delivered pursuant to orders bearing a preference rating of A-1-k or higher, or in milling ores for the holder of a serial number under Preference Rating Order P-56.

An appeal program was set up in L-208 for those who consider that compliance with the order will work an exceptional and unreasonable hardship upon them. Appeal must be made to the War Production Board by letter, in triplicate, setting forth the pertinent facts and the reasons for asking relief. The director general for operations may then take such action as he deems appropriate.

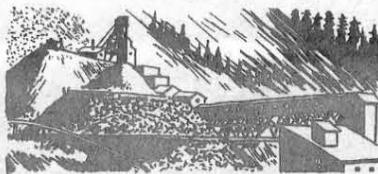
While WPB's order L-208 carried a note of finality, the issue is not yet settled. Gold producers throughout the country are taking advantage of the appeal provisions and are filing their cases for review. Some modification of the original order is expected by those who have followed Washington's procedure when comparable situations have arisen in the past.

IMMEDIATELY following issuance of the closing order, Paul V. McNutt, chairman of the War Manpower Commission, announced that production and maintenance workers released by the order will be given positive and immediate aid in finding work in copper and other vital nonferrous industries. Transportation expense for workers, and in some instances for their families, will be provided where transfers to new locations are involved, according to McNutt.

The War Manpower Commission has issued instructions to all employers not to "hire in, or hire for work in, Alaska or any state west of the Mississippi River, any person who on or after October 7, 1942, has left employment as a production or maintenance worker in connection with gold mining, except upon referral of such worker to such employer by the U. S. Employment Service." Similar orders have been issued to the war department establishments, contractors, and sub-contractors by the Army, Navy, and Maritime Commission.

The directive also instructs the U. S. Employment Service to refer gold mine production or maintenance workers to essential nonferrous metal mining, milling, smelting, and refining activities, and forbids their referral to any other type of work, except when such referral is in the best interest of the war effort, or when denial of referral would result in undue hardship for the individual.

Enforcement provisions require that all of the gold miners register with the U. S. Employment Service, and all gold mines have been instructed to furnish complete lists of all employes. Some teeth were added to the order when Army officials stated that they would keep track of each individual through official means and see to it that the miner worked only in mining unless otherwise certified.



PRIOR to the issuance of the order, a meeting was called by WPB at which the proposed plan was discussed with representatives of the gold mining industry and with operators of several large gold mines. This meeting was followed by conferences with western senators in the office of Senator Pat McCarran of Nevada. Vigorous protests, backed by facts and figures, were made against the closing order at these gatherings.

McCarran questioned the authenticity of the government's figures and asserted that comparatively few miners in the straight gold mines of today could be marshaled into the strategic metal mines. He estimated the number at nearer 250 to 300 and added:

"Mining methods differ, and the age of gold miners now runs from 48 to 60 years of age. The young men have been taken or are gone, and the remainder will not and cannot move."

Among the points brought out at the hearings were that the closing of placer operations would not release underground miners; that workers in gold mines are usually over age and otherwise physically disqualified for work in copper, lead, and zinc mines; and that many of those who might qualify would find their way into other war industries. It was asserted that the net result probably would show less than 1,000 workers for war mineral production, and that this figure would not warrant the complete disruption of the industry.

Western senators are on record as stating that "Great Britain is employing some 400,000 men in its gold mining operations, as compared with about 4,500 in this country, and we are paying Great Britain to mine this gold at \$35 an ounce." Senator McCarran stated in the spring of 1942 that in a three-month period \$5,000,000 worth of mining machinery had been exported to foreign countries, thus explaining why many domestic mining enterprises have been unable to secure the necessary priorities.

The first formal protest to the order was made to President Roosevelt in a letter signed by 21 western senators. The letter told the chief executive that the order would release relatively few miners for work in strategic metal mines and would disrupt the economy and morale of the gold mining areas. He was requested to stay the order "at least until the whole subject of the marshaling of manpower and the allocation of labor may be considered, and the vital questions involved concluded."

BITTER protests to the order have come, as would be expected, from the principal gold producing states of California, South Dakota, Colorado, Montana, Nevada, Arizona, and Utah. The California situa-

tion was summed up by Bruce McDonnel, chief of the California Bureau of War Minerals Production as follows:

"In 1941, about 6,000 were employed directly in the gold mining industry. At the time of the closing order, only about 2,000 employes were left and of these less than one-third would be available for work in strategic metal mines, because the younger employes had volunteered or been drafted for service with the armed forces, and because the mechanics, electricians, welders, machinists, and other skilled workers had long since departed to the industrial areas.

"It has been apparent, since early 1941, that most of the companies would find it most difficult to continue their operations through 1942. The factors basic to this observation were rising wages, the migration of miners to defense jobs, rising cost of supplies, higher taxes, and the fixed selling price of gold. Early in 1942, these factors all attained strength beyond that contemplated. In addition the scarcity of supplies was increased by the intensifying of the program of base metal production.

"Lode gold mining in California has been done principally in an area extending 500 miles in a north and south direction and from 50 to 70 miles easterly and westerly. This area includes the Sierra Nevada Mountains from Plumas County to San Bernardino County—13 counties in all. They contain 100 per cent of the gold producing lode mines of the state, and it is clear that the cessation of their principal source of employment and income will create cataclysmic changes in the living conditions among the residents thereof.

"There were, in 1941, approximately 200 lode mines operating 100 concentrating mills. The gross value of their production was approximately \$27,000,000, and from that income \$16,500,000 was paid locally for wages, salaries, and supplies other than fuel and electric power. The further sum of \$250,000 was paid as taxes by the operating companies to the various 13 counties. The amount paid to state and federal agencies as taxes of various nature cannot yet be definitely ascertained, although it probably will exceed \$1,000,000.

"It is the solemn responsibility of government to preserve the basic fabric of its peace-time industries during time of acute peril to its own existence. Government must do this in order to preserve the foundation upon which may be rebuilt our democratic way of life when the war effort is ended."

GOLD operators of Colorado are approaching the problem from another angle. David P. Strickler, president of the Stratton-Cripple Creek Mining and Development Company, states that his company will appeal the closing order to WPB and that if the appeal is rejected an injunction will be sought. He asserted:

"There is no act of Congress which authorizes the WPB to close any industry. Its powers are limited to regulating materials and supplies used in industry where necessary for the war effort."

The gravity of the situation in the Cripple Creek and Victor districts was pointed

SURCEASE GRANTED EXTENSION

THE Surcease Mine of Oroville, California, has been granted a 30-day extension of the rock-breaking deadline, i. e., to November 15, as a result of special appeal from Limitation Order L-208 filed by the operators with WPB. The added period of grace was given so that pillars and ore ends may be pulled in sections of the mine which are not expected to be accessible when the mine is again reopened.

out by Strickler when he stated that 95 per cent of the Midland railroad's revenue came from hauling ore from the camps to the mill; that about half of the coal production from the mines north of Colorado Springs goes to the Golden Cycle mill for use in generating power for treating ore, and that hundreds of hard-rock miners will be thrown out of employment.

Merrill E. Shoup, president of Golden Cycle Corporation, also has gone to Washington to present an appeal. Shoup stated that his company stopped breaking ore on the October fifteenth deadline and that cleanup operations would continue for 60 days as permitted under the order. He added that his company was conducting a survey of the zinc possibilities in Colorado and that zinc ore might be treated in the Golden Cycle mill in Colorado Springs. He indicated that the corporation would seek war contracts for machine shops at various mines, and added that the financial resources of the Golden Cycle Corporation will be used to keep Cripple Creek alive.

According to Shoup, the closing of the gold mines will fail in its objective because 30 per cent of the 2,500 employed in the gold mining industry are over 50 years old, and only 5 per cent, or 125, of the 2,500 would go voluntarily into the copper mines.

Shoup, whose other business interest is sugar, remarked:

"I feel that times are as bad for me as Will Rogers said they were in '33, when hitch-hikers stood on the road offering to go either way."



IN SOUTH DAKOTA, the closing of the gold mines presents a state as well as a local problem for it will wipe out 88 per cent of the state's mineral production (\$24,000,000 in 1941) and will cut off the state government's third largest revenue source. The 6 per cent state ore tax on gold yielded \$1,200,000 to the state treasury last year.

Although the loss of the ore tax is not expected to unbalance the state treasury immediately, because of a surplus of \$3,737,000 now on hand, officials have pointed out that closing the mines, in addition to reductions in gasoline tax receipts, may force the state to seek some other method of taxation, such as a revival of the old real estate levy. The state government has not levied on real estate for several years, relying on the ore tax, gasoline tax, and 2 per cent sales tax for most of its revenue.

The Homestake Gold Mining Company of Lead, South Dakota, largest gold producer in North America, had a production of more than \$20,000,000 in 1941. This company alone employs about 2,000 men, pays yearly dividends of \$9,000,000, and is the main support of three towns—Lead, Deadwood, and Spearfish—with a combined population of 14,900. The company will be permitted to maintain a "stand-by" crew and may be able to utilize some of its shops in the production of defense items. In addition, plans have been made to continue operation of the sawmill at Spearfish and a coal mine near Gillette, Wyoming.

The WPB order terminates the most prosperous period in the history of gold mining in the Black Hills of South Dakota. It began in 1933, when the government increased the price of gold to \$35 an ounce. Homestake in the last nine years has spent about \$13,000,000 in construction work, including two new 5,000-foot shafts. The payroll last year amounted to about \$4,300,000, nearly \$1,950 per employe.

Two other operating mines are closed by the order—Bald Mountain of Trojan and Canyon Corporation of Maitland. A third, the Holy Terror, was forced to close in September because of labor shortage.

WHILE some in the gold industry have accepted the closing order as final, many have announced their decision to fight the order as long as possible, believing that the move is ill advised since it will gain so little at such a tremendous price. They also claim that, due to the appeal provision in the order, there will be some relaxation of the regulations to protestants, possibly granting specific mines the right to continue production provided only workers over 45 years of age are used. Therefore, they are urging that all gold mines file protests immediately. This is on the theory that it will do no harm and that, in case some other disposition of the situation is made later, it cannot be said that the gold mining companies failed to protect their interests by filing under the proper procedure.

One executive stated that the members of the gold mining industry would accept L-208 with much better feeling had WPB thoroughly explored the field for other

ways and means of meeting the labor shortage in the copper mines and found them wanting. He then made special reference to the proposed importation of Mexican mine labor. Six months ago, the State Mining Board of California asked Governor Olson of California to include Mexican miners in his request for Mexican agricultural workers for California and other western states in dire need of such labor. To date, a few agricultural laborers have been imported, but no miners. It has been estimated that Arizona alone could use 3,000 Mexican miners to advantage.

"The War Production Board is only kidding itself," Dr. Francis A. Thomson said, "if it thinks it will divert new labor to copper mines by closing down all gold mines. The men who leave the gold mines are well-trained mechanics and unless they are forced to do otherwise, most of them will find their way into shipyards and other well paid defense jobs."

One commentator in Washington states that, while it would be difficult to prove, there is a suspicion that part of the pressure being applied to get the gold mining industry in a depressed condition comes from those having a definitely ulterior motive, and is not to secure additional workers for the strategic mines. He points out that stocks of the large gold lode mining and gold dredging companies have been considered prime investments by estates, and that the depression of gold stocks, which will have a ruinous effect on many individuals, will provide a fertile field for the accumulation of control of gold mining properties by international banking interests having sufficient capital to make long-range investments. As an example of what is happening, he mentioned the Homestake stock which was quoted at \$55 a share before the denial of priorities to gold mines by the War Production Board. The quotation then dropped to the \$35 level, and since the closure order to \$22 a share. Depreciation of conservative stocks such as this one, he stated, will be a tremendous loss to many small stockholders.

The concensus of opinion among gold operators seems to be that WPB's order is unwarranted and was taken without understanding or consideration of the serious results, economically and politically, which will follow throughout the west. This feeling is greatly intensified because no move has been made to curtail gold production in any other part of the world. In fact, South African and other foreign gold mines are still able to obtain mine machinery and supplies from American manufacturers, something which has been denied United States gold mines for many months.

BUTTE STUDENTS WORK IN MINES

TO RELIEVE LABOR SHORTAGE

OVER 125 students of the Montana School of Mines, at Butte, Montana, are working two and three shifts a week in the copper mines, both to gain practical experience and to give aid to a war industry sorely in need of manpower. For this reason the school has refused to furnish student labor in the sugar beet fields, feeling that the students can be of more value in the mines.

ARMY RELEASES MEN FOR STRATEGIC METAL MINING

A GROUP of 28 men, furloughed by the United States Army, has gone to work at the Morenci Branch, Phelps Dodge Corporation, Morenci, Arizona. This is the Army's first step in its program to release about 4,000 qualified hard-rock miners so that they may return to work in the strategic metal mines. It is stated that if the plan proves successful more men can be made available later.

It is understood that the men who are released will be placed in the enlisted reserve and that, insofar as possible, the furloughs will go to men recently inducted under selective service, despite their occupations, and to men in the higher brackets of the army age range. The Army's plan provides for returning the men to the mines from which they came originally, but, if a surplus is available, other mines which have not lost men to the army will be eligible to obtain such labor.

Two pools have been established under the new program, one at Camp McCoy near Sparta, Wisconsin, and another at Fort Douglas near Salt Lake City, Utah. Release of miners will be carried out through these pools.

Mining companies wishing to apply for this manpower may do so in two ways: company representatives may go to one of these pools, or to both pools, and make formal application for furlough of so many men for definite employment on the company's property; or the company may contact, directly, the representative of the United States Employment Service office nearest the company's headquarters, and request that the USES act as agent for the company in obtaining labor from these two pools.

The United States Employment Service has worked out a program under which certain transportation costs will be guaranteed to the individual miner furloughed by the Army. However, it is required that the employing company first guarantee a minimum of 90 days of actual work for the miner. If the guarantee is provided, it is understood that USES will pay for transport of household effects up to 2,500 pounds for a single man and up to 5,000 pounds for men with dependents.

In addition, USES also will guarantee transportation costs for single men and for married men with no more than three dependents by railroad coach, railroad tourist, commercial bus line, or private car over shortest route available at 5 cents per mile. The company or the individual miner must advance the money for the transportation costs, but may apply for a rebate at the local employment service office upon ar-

rival at the place of employment, and upon actually beginning work at the mine.

"It is understood," says Senator Hayden of Arizona, "that there are now seven or more company representatives at Fort Douglas, Utah, negotiating for labor from that pool, but only three company representatives are at Camp McCoy near Sparta, Wisconsin, where a larger pool is available."

In commenting on the labor situation, Hayden stated, "I feel that the primary problems in connection with mine labor supply revolve around maintenance of the present number of workers on the job, which can be done by proper administration of the Selective Service law and by the freezing order, administered by the War Manpower Commission. Further legislation by Congress may be necessary to make effective this latter procedure."

There has been considerable agitation for the importation of large numbers of workmen from Mexico to replace labor already drawn off, but Senator Hayden states: "On the basis of my own experience with this phase of the question, I feel that there is no great hope of securing large numbers of Mexican laborers, because of the attitude of the Mexican government and of our own federal agencies concerned."

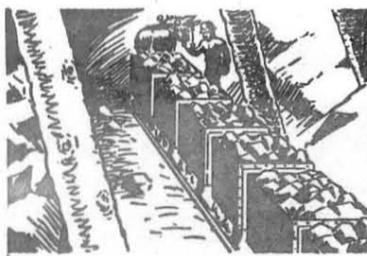
An agreement negotiated between our government and Mexico, providing specifically for importation of Mexican farm labor, also is applicable to "other types of labor." This agreement included certain specific requirements such as a guarantee of a minimum wage of 30 cents an hour, adequate housing and sanitary facilities, payment of transportation costs, and bonding of the corporation or individual concerned to guarantee return of Mexican labor to Mexico.

Mexico now is at war and, therefore, will have greater demand for manpower than has been the case heretofore, or than was the case during the last war, it was stated. Furthermore, there has been a considerable amount of recent development of mineral resources in Mexico which has drawn off some of the excess labor supply.

Hayden recently succeeded in obtaining authorization from the U. S. Employment Service and the Immigration and Naturalization Service for temporary employment, on a day by day basis, of approximately 500 Mexican farm laborers on truck farms in the Yuma, Arizona, area. This labor is using temporary daily border crossing cards, and it is believed that a similar procedure might be worked out in obtaining Mexican miners for day by day employment in mines along the southern border.

In applying for such labor, requests must be submitted originally to the local office of the U. S. Employment Service, and they will then be submitted in turn to the state office, the regional office, the federal office, and finally to the commissioner of immigration and naturalization.

In employing Mexican labor, it is pointed out that whatever the policies of our own federal agencies may be, nothing can be done without full agreement of the Mexican government, and regulations written into a labor agreement with Mexico must be observed completely.

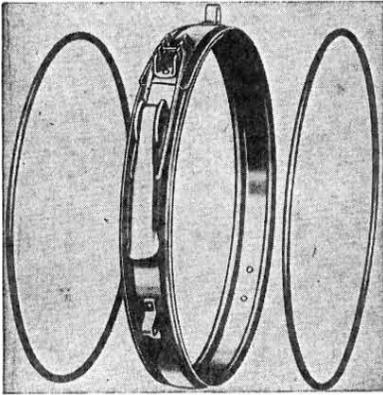


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ing Company's smelter at El Paso, Texas. It is understood that plans are being made for the installation of the necessary mining equipment and machinery to step up production at the property. Values are in lead with some silver and gold. It is believed that underground development has disclosed enough commercial ore to make future shipping continuous. The United Lead Zinc concern was incorporated in July 1942 to take over the claims, and is headed by Maurice Katleman of Los Angeles, California. Leonard Hoffman of Kingman and Clinton W. Randles and James A. Mabee of Long Beach, California, are vice-presidents.

Earl E. Sherman, Box 877, Nogales, Arizona, and associates are reported to be shipping from the **Indiana** mine located at Washington Camp, a few miles from Patagonia in Santa Cruz County, Arizona. Values are in copper, lead, and zinc, with a showing of silver, and the ore is being treated at the Duquesne mill of the Callahan Zinc-Lead Company, which is sub-leasing the mine to Sherman.



O. E. Lynch and Company is carrying on regular mining operations at its property on Kelso Creek 10 miles south of Weldon in Kern County, California. The ore is said to run about \$40 per ton in wolframite. The company address is Box 675, Isabella, California.

The **Newmont Mining Corporation** hopes to have the plant at the **Grey Eagle** copper mine ready for operation by April of 1943. Heavy machinery is being brought in by the company's 10-ton trucks, which will be used to haul concentrates from the mill to the Hornbrook rail station when the mine is producing. It is estimated that the ore body being blocked out will contain 600,000 tons. The Grey Eagle property was reopened recently by the Newmont concern and consists of 32 claims eight miles from Happy Camp, California. The claims were developed prior to the last war but were never put into production because of inadequate transportation facilities at the time and poor market conditions. Charles F. Ayer, 14 Wall Street, New York, New York, is president of Newmont.

H. D. Cowden and K. W. Walters, both of Yreka, California, are reported to have moved their suction dredge to the E. T. Weldon property on the Klamath River near Happy Camp, California. Cowden and Walters have been working the Forest Moore property in the same area, but report the operation unsuccessful. The dredge had been handling 1,500 cubic yards of gravel daily. Values at the Forest Moore ground were in gold, chrome, quicksilver, and other strategic metals.

The discovery of an extensive tungsten deposit has been reported at the **McCormick** mine about 10 miles west of Sonora, Cali-

fornia, in the Mt. Elizabeth district. Chrome shipments are being made regularly from the property to the government stockpile at Tracy. The announcement of the discovery was made by J. C. Rassenfoss, chairman of the industrial committee of the Tuolumne County Chamber of Commerce.

In spite of being handicapped by a shortage of labor the **Lava Cap Gold Mining Corporation** is producing 385 tons of gold and silver ore daily, as well as 150 tons of iron sulphides, which are shipped to the Selby smelter for use as a flux in lead production. The payroll numbers 300 at the Lava Cap operations in Nevada County, California. It is reported that work at the mine includes raising the Lava Cap tailings reservoir dam another 10 feet. When completed sometime in November it is expected that the project will provide tailings storage space sufficient to cover the company's needs for several years. Otto E. Schiffner, Nevada City, California, is general manager of Lava Cap Gold Mining Corporation.

Production at the **Spanish** mine is reported to be normal again after a short period of difficulty in obtaining experienced truck drivers to transport the barite ore from the mine at Washington, California, to the ore bins near the Washington Junction, where the ore is loaded into large trucks and trailers and transported to Stockton, California. The mine has been under lease for the past four years to the Industrial Minerals and Chemical Company, and a crew of about 30 men is maintained under the direction of Reynold J. Penrose, Washington, superintendent.

John A. Foley, Hearst Building, San Francisco, California, and J. Hampton Lashbaugh, Nevada City, California, are reported to have under development a manganese property on Mt. Hough, Plumas County. Shipping is to start as soon as a road to the mine is completed.

Development work on extensive cinnabar deposits in the Potato Peak region of Mono County near Bodie, California, has been reported to be progressing satisfactorily by the **Alta Quicksilver Mines** of San Francisco. It is understood that open cuts have exposed ore which indicates the possibility of regular production in the near future. The company is controlled by Warren Loose, G. A. Peterson, and John L. Rosencranz, all of whom may be reached at Bodie. Peterson formerly was associated with the Roseklip Mines Company as chief chemist. The Alta Quicksilver concern is maintaining headquarters at 2 Pine Street, San Francisco, California.

Chrome shipments are being made daily to the Metals Reserve Company's stockpile at Quincy, California, by Ellis R. Patterson, Oakley, California, from his mining claims in Plumas County near Quincy. Extensive development work is reported to have been done on the property during the summer months.

A crew of 18 men is being employed by the **Ancho-Erie Mining Company** in operations at its mine near Graniteville in Nevada County, California. According to re-

ports, commercial-grade ore was encountered while driving a crosscut to contact the famous Ancho-Erie vein, and the company is starting extensive development work under the direction of Fred Anderson, Grass Valley, superintendent. C. A. Helbach, 370 Alta Street, Grass Valley, is president of the Ancho-Erie Mining Company.

The first carload of manganese ore has been shipped from the B and K mine near Fruto in Glenn County, California. Results of this shipment will determine future development of the property. C. M. Cyar is in charge of operations.

A few shipments of tungsten ore are scheduled to be made during the month of October by E. M. Conlee, Pixley, California, and Jack Butcher of Corcoran, partners in the development of a tungsten claim in the Greenhorn Mountain district of northern Kern County, California. Conlee and Butcher have been doing development work on the mine for the past four months and have about 80 tons of 3 per cent ore ready for milling. Future plans include the installation of necessary machinery to treat the ore at the mine.

Fred Schmidt, 1420 Bush Street, San Diego, California, is reported to have located lead, zinc, and silver deposits on the Aubrey Sears ranch near Jamul in San Diego County. He also has reported discovering a deposit of tremolite south of Whispering Pines in Lake County, California.

Henry J. Kaiser, Latham Square Building, Oakland, California, has announced that production of pig iron at the Kaiser Iron and Steel Company's \$50,000,000 steel manufacturing plant at Fontana, California, will be started in January of 1943. It is expected that production of rolled plate will begin in February or March. Ore will come from Kaiser mines near Kelso, California, and coal will be shipped from Utah. The plant will have an initial capacity of 400,000 tons per year, but it is hoped that output will be increased to 1,000,000 tons annually. George W. Vreeland is consulting engineer for Kaiser Company, Inc., Iron and Steel Division, and is addressed at 515 Latham Square Building, Oakland, California. George Havas is chief engineer.

It has been reported that the Metal Mining Exploration Company is opening up new copper properties in the Copperopolis district of Calaveras County, California. The company controls the Star and Excelsior Consolidated copper mine at Copperopolis. John A. McDonald, 912 Russ Building, San Francisco, California, is president and manager of the Metal Mining Exploration Company.

Plans are under way by the Red Cloud Mines, Inc., to install a power line at its Blue Moon mine five miles north of Hornitos in Mariposa County, California. Although the property was operated formerly as a gold mine, the company intends to work a deposit of zinc which has been blocked out for some time. J. H. A. Williams is in charge of operations at Hornitos. Clendenin J. Ryan, 515 Madison Avenue,

New York, New York, is president of Red Cloud Mines, Inc., and David W. Morehouse, Hornitos, is resident agent for the company.

Luke W. Williams, 226 South Church Street, Grass Valley, California, is planning to begin operation of his Niagara mine northwest of Grass Valley in Nevada County, California, in the near future, following several months of preparation and assembling equipment. Test runs of the chrome ore are being made with a five-stamp mill, but Williams intends to install a ball mill at the property when preliminary milling and concentrating tests are completed. It is expected that ore from the Niagara will be milled at the Kentucky

Ridge mill about 2½ miles from the mine. Williams also has an interest in the Grass Valley Extension mine near Grass Valley, California.

C. M. McNallen, Route 1, Oroville, California, and T. W. S. Clark, 400 Tuolumne Street, Vallejo, California, are reported to be examining chrome properties in the Tri-County district of the state. McNallen and Clark have been shipping chrome ore to the Metals Reserve Company's stockpile at Sacramento, from their Clark and McNallen mine north of Oroville, but work has been suspended because of a lack of commercial ore.

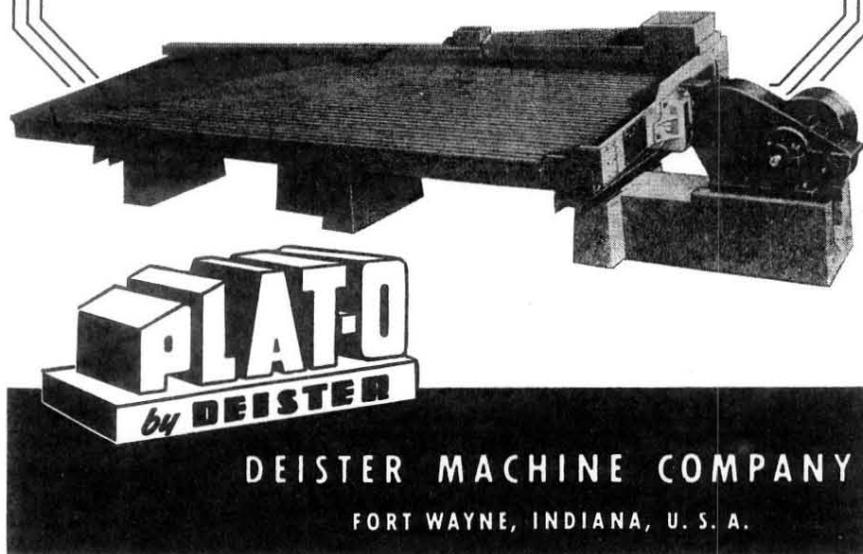
A recovery plant for the extraction of lead, gold, platinum, silver, quicksilver, and

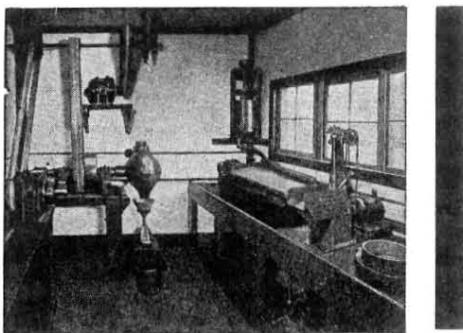
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zinc has been placed in operation by the **General Dredging Company** at Natoma about two miles from Folsom City in Sacramento County, California. It is understood that sand and gravel taken from sluices connected with dragline dredges are sent through a special long tom, where two units trap gold amalgam, quicksilver, amalgamated lead, platinum, and other metals. Gold amalgam and quicksilver from the first section go to the chemical department and the product from the second unit passes into a small trommel. One section recovers fine gold, platinum, and quicksilver, and the other extracts buckshot and other metals. Oversize coming from the trommel is hand-sorted for lead and gold nuggets. The mercury recovered is used in the amalgamation of gold in the next clean-up of sluices. The General Dredging Company is a partnership composed of A. F. Giddings, O. Jack Boucher, both of Sacramento, California, and W. H. Haines, 811 West Seventh Street, Los Angeles. The company recently took over the Arambidie quicksilver mine near South Dos Palos, Fresno County, California, and is putting the mine in condition for operation.

Dredging operations are reported to be underway at the property of the **Rand Gold Dredging Associates** located northwest of Randsburg, Kern County, California. It is understood that water from three of the four wells is keeping the dredge afloat. The steel dredge, floated in a pit 150 feet wide, 200 feet long, and 12 feet deep, operates a bucketline of four-cubic foot capacity and digs to a depth of 45 feet. Values sought at the location are tungsten and gold. This is said to be one of the few operations where water for dredging is supplied from wells. M. E. Howard, Box D, Randsburg, is superintendent of operations, and Newton Cleaveland, 351 California Street, San Francisco, California, is consulting engineer for Rand Gold Dredging Associates. Dredge Placers, Inc., is reported to be the management company for the dredging concern.

Open-pit mining of gold, which is producing values of about \$18 a ton, is proceeding at the **Hageman** mine two miles north of San Andreas, California. A new mucking machine recently was added to the mine equipment to facilitate the loading of ore cars. It is reported that workmen have opened a 25-foot vein of ore in the pit, and it is planned to tunnel into the mountain to follow the vein. Underground mining will be carried on because a large amount of waste material would have to be moved in order to continue by open-pit mining methods. It is understood that when the tunnel has been driven for a distance of approximately 50 feet, a 175-foot shaft will be sunk to connect with the underground workings of the mine. Equipment consists of an 18-stamp mill, a double-drum hoist, four amalgamation tables, two concentrating riffle tables, two vanner tables, and a 150-horsepower Diesel engine which operates a generator to supply electric power. Raymond Hageman, Box 104, San Andreas, California, is owner and operator of the Hageman mine.

Results of development work being carried on at the **Wide Awake** mine are re-

ported to be satisfactory and it is expected that production will begin soon. It is understood that work carried on with bulldozers and tractors has exposed substantial cinnabar deposits. The **Wide Awake** is located in the Wilbur Springs district of California in Colusa County and is owned by W. W. Gibson, 1801 Webster Street, Alameda, California.

A 2 1/2-yard Link-Belt dragline, oil tanks, and other miscellaneous equipment have been delivered to a new tungsten operation south of the Stringer mining district near Atolia in San Bernardino County, California. Further shipments, to include the equipment for the clean-up process, are scheduled to follow shortly. It is expected that operations will be started by **Smelters Corporation** within the next two months, depending upon the availability of the necessary machinery. It is understood that the prospective needs of the new project are making necessary a revamping of the Atolia substation of the California Electric Power Company. It is planned to increase the substation from 600 to 900 horsepower. W. B. Thurman, Lodi, California, is president of Smelters Corporation, and Grant Morton, Lodi, is engineer in charge of operations. Morton is being assisted with installation work by Robert Ogden, Harry Rickwalt, B. H. Patrick, and A. C. Dennison, and by a crew of local men.

Panaminas, Inc., is reported to have acquired control recently of the **Phelps and Nichols** tungsten properties on Hilton Creek near Independence, Inyo County, California, and development work will begin immediately. A. H. Heller is manager of west coast operations for Panaminas, Inc. The new operating company is a subsidiary of Ventures, Ltd., a Canadian firm, and also operates the Adamson tungsten mine near Bishop, California, under lease from the owner, D. B. Adamson of Bishop. From the latter property, Panaminas expects to be able to ship approximately 300 tons of ore daily to the U. S. Vanadium mill near Bishop.

According to reports, H. W. Thorne, president of **Producers' Mines, Inc.**, Chloride, Arizona, is developing a tungsten property near Visalia in Tulare County, California. The Producers' Mines company had been considering plans for transforming the mill at Chloride into a 300-ton selective flotation plant to treat zinc-lead sulphide ores from mines in the Cerbat Range of Arizona, but it is understood that this program has been discarded for the present. Monte Ivy is general superintendent of Producers' Mines, Inc., and Don Neely is mill superintendent.

Articles of incorporation have been filed by the **Midway-Apex Mining Company** of Los Angeles, California. Edward Baker, 239 Edeln Avenue, Los Gatos, California; Turner M. Garr, 1008 N. Huntington Boulevard, Pomona, California; and James G. Whyte, 1399 Via Turita, Claremont, California, have been named as directors of the new concern. For some time Garr, who will be the company's legal representative, and associates have been operators of the Midway-Apex properties 40 miles east of Barstow, California. Values are in gold and copper.

used successfully in the Bureau of Mines pilot plant. Ore is mined by power shovel and trucked to the ore dump. From there it is conveyed by belt to a crusher, which breaks it to a size of less than six inches. The material is lifted by a conveyor belt to the stockpile above the pit, and from there another belt conveys it to the drying kiln. That product is elevated to the top of a 50-foot structure where the shale and clay are screened and washed from the nodules. A small percentage of the ore is found in small particles, but most of the manganese is in nodules over 1/16 of an inch in size.

The second unit of the pilot plant uses explosive shattering. Ore is placed in a steam cylinder under high pressure. As the pressure is released suddenly, the ore nodules break away from the shale and clay.

Installation of an improved matte smelting process developed by the Bureau of Mines has been recommended for the South Dakota field by the WPB. This would reduce the ore to a 63-per cent metallic manganese, throwing it well into the class of ferro-grade ore. However, it also would raise the problems of additional fuel and a supply of pyrite.

LOS ANGELES GROUP WILL HAVE MACHINERY CLEARING HOUSE

ESTABLISHMENT of a mining machinery clearing house in Los Angeles to save millions of dollars worth of irreplaceable equipment in Southern California, Arizona, and Nevada; to speed installation of facilities for mining strategic minerals; and to rationalize salvage collection of scrap metals, has been announced by the Los Angeles County Chamber of Commerce.

"Hundreds of mines have been shut down and scores more will be forced out of business every month," states E. O. Slater, chairman of the chamber of commerce mining committee. "Practically every bit of their abandoned machinery is of incalculable value now. A very large percentage of it cannot be replaced until the war is over. Even mines engaged in strategic mineral production cannot replace certain equipment when broken, because needed metals must be allocated for other purposes under pressure of war emergencies."

The Arizona Department of Mineral Resources has been engaged in inventorying idle mining equipment for the past several months and now has on file a comprehensive list of available machinery. The program worked out by the department has been adopted by the Industrial Conservation Division of the War Production Board, and arrangements are now in process in Washington to make the information on idle mining machinery available for all states—that is, to provide for intercommunication between state lists.

COPPER PRODUCTION AND WAR DEMANDS

(Continued from Page 5)

ing the virtually impossible to increase our supply of critical materials.

Labor shortage continues to be one of the major problems facing copper producers. Current production actually is being cut by manpower shortage, an estimated 5,000 tons of copper having been chopped off July output by labor shortage in mines and smelters.

Imports are playing a big part in our copper supply. We will receive larger amounts than ever from some of our Good Neighbors to the south, principally Chile, Peru, and Mexico, and from Africa and Canada. Our copper problem is the problem of all the United Nations. We must expect that some of our copper will have to be sent to others, and it is possible that some of the copper we now receive from Canada will, in a few months, have to be sent to Great Britain.

SOME non-military uses of copper are essential and must be continued. Light and power for industry and housing must be provided, communications must be maintained, and a few other uses without which our society could not operate are being taken care of in a limited way.

Aside for these, you could not legally buy a pound of copper with an equal weight of gold! Restrictions on copper use for non-essentials are being enforced by WPB General Conservation Order M-9-c and other orders so that no copper may be used without specific authorization of WPB.

In industry, many ways are being found to substitute other materials for critical copper. Silver is being used in some electrical equipment, revisions of brass specifications are being made even in Army and Navy munitions to conserve copper, and other switches to less critical metals are being made wherever possible. Steel is being used in shell casings instead of brass. Simplification of pipe fittings by WPB saves enough copper in a year to put the rotating bands on a million 14-inch shells.

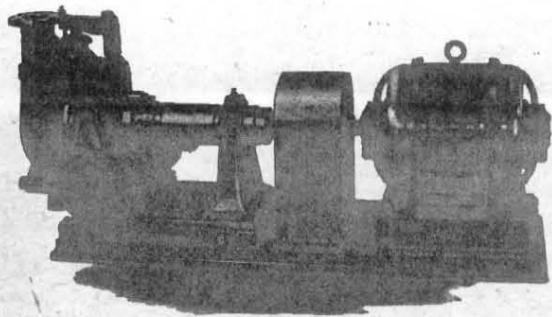
A VAST mine of copper exists in this country, the obtaining of which can be speeded by every American. That mine is unused scrap and waste copper. By collecting old scrap and channeling it back into production, we hope to make available this year an additional 300,000 to 400,000 tons of copper.

One part of this program is handled by Copper Recovery Corporation, which acts as an agent of Metals Reserve Company, buying up stocks of unused copper and brass, and even fabricated products made of these metals, which are not being used in essential war work. This agency will serve to direct such unused stocks into the hands of those who need copper, thus avoiding the continued existence of idle inventories. Collection and resale of this inventory copper and copper alloy by Copper Recovery Corporation are running as high as 5,000,000 pounds per week, on a purely voluntary basis. Efforts are being made to step up the volume of copper and copper alloys made available by CRC some five-fold, in order that every available pound of idle metal may be properly used.

The American people, through their governmental representatives, have willed that all available copper be put into essential war production. Even the fisherman gives up his copper tackle so that the metal can be made into 60 million rounds of armor-piercing ammunition for machine guns. The little brass bands that lead pencils used in one year will make 126,000 .30-caliber machine-gun bullets.

The copper picture looks black, and it is black, but government, industry, and every one of us from the Atlantic to the Pacific, must conserve, substitute, and gather scrap—so that copper, the pacemaker of modern war, may be adequate for the maintenance of American freedom.

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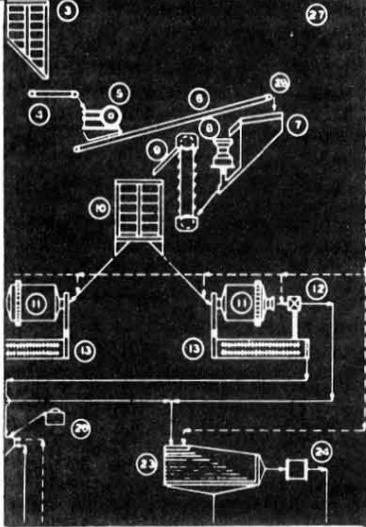
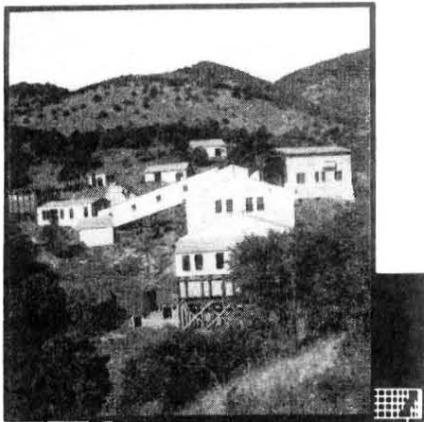


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the nine months ended September 30, 1942. This compares with a net profit of \$1,117,389 or \$2.74 a share in the like period of 1941. In the 1941 report a profit of \$319,130 from the sale of securities was included while in 1942 there was a loss of \$192,861 from the sale of securities. E. G. Dentzer, Superior, is general manager of Magma operations. Charles F. Ayer, 14 Wall Street, New York, New York, is president of the Magma Copper Company.

Reconstruction Finance Corporation engineers are reported to be examining the **Storm Cloud** mine located 15 miles south of Prescott in Yavapai County, Arizona. It is understood that Richard Simis, Jr., 320 Luhrs Building, Phoenix, Arizona, has completed work under the Class C, RFC loan granted on the property and plans to apply for a Class B development loan. The vertical shaft has been dewatered and the drifts cleared and the mine is ready for production. Values are in copper and silver. The property is being leased by Simis from the O'Brien Mines, Ltd., of Ottawa, Canada. Mark Gemmill, 132 South Pleasant Street, Prescott, Arizona, is superintendent in charge of operations.

The **Westlake Tungsten** mining claims are being leased by Mrs. Bryce H. Westlake, Globe, Arizona, owner, to Mrs. Eva Grace Winterbottom, 718 West McDowell Road, Phoenix. The property consists of five claims in the Globe mining district of Arizona. The new operator is planning to equip the mine in order to make tungsten shipments to Tucson, Arizona. Harry Dean is in charge of operations.



William A. Franklin, consulting engineer, 512 North Heliotrope Drive, Los Angeles, California, is reported to be preparing his mining property in San Bernardino County, California, for immediate production. Values at the mine are in lead and zinc.

Development work at the copper mine of the **Consolidated Gold and Metals Company** in Plumas County, California, is reported to be progressing satisfactorily, with 5,000 tons of ore on the dump and in sight on the property. The mine consists of 11 patented mining claims, and the ledge is traceable for over 3,000 feet, being 20 to 40 feet in width. Fifteen feet will assay more than 3 per cent copper, and the ore also carries values in gold, silver, and silica, the high silica content making the ore suitable for fluxing copper concentrates. It is being planned to construct a road from the mine to the railroad at Taylorsville or Crescent Mills in order to be able to ship for smelting to Salt Lake City, Utah; Ely, Nevada; or Tacoma, Washington. Joseph R. Walker is president of the Consolidated Gold and Metals Company and is addressed at Box 1079, Salt Lake City. The company's offices are in the Newhouse Building, Salt Lake City.

The War Production Board is reported to have granted the **Surcease** mine, Oroville,

California, a 30-day extension of the rock-breaking deadline, as the result of a special appeal by the operators, **Hoefling Brothers**, J. W. Hoefling, Box 786, Sacramento, California, managing partner. The extension will allow the operators to pull pillars and ore ends in sections of the gold mine which are not expected to be accessible upon re-opening. Hoefling Brothers recently acquired a copper-zinc property near the Surcease, and, if development is favorable, the Surcease mill will be adapted for flotation concentration of the ores from the new operation.

Definite announcement has been made by Wilbur A. Nelson, administrator of the Mining Branch of the War Production Board, that the **Lava Cap Gold Mining Corporation** is not included in the Gold Mining Limitations Order L-208, recently passed by the WPB, and that production may be continued from the Nevada County, California, operations, as long as it is considered essential in the operation of the American Smelting and Refining Company's lead smelter at Selby. The Lava Cap concern has been producing, besides 385 tons of gold and silver ore daily, 150 tons of iron sulphides which are shipped to the Selby smelter for use as a flux in the production of lead. The company has been working under the handicap of a severe labor shortage, but it now is hoped that the payroll may be increased from 300 to 375 men in view of the fact that miners in other gold operations in the same area will be thrown out of work as a result of the WPB shutdown of gold mines. Otto E. Schiffner, Nevada City, California, is general manager of Lava Cap operations.

Yuba Consolidated Gold Fields, Ltd., has declared a dividend of 5 cents a share payable November 2, 1942, to stock of record October 14, 1942. In the two preceding quarters, dividends of 10 cents a share were paid. Yuba Consolidated follows the practice of declaring 10-cent quarterly dividends during the first three quarters of the year and then gauging the size of the last dividend for the fiscal year, ending February 28, by results for the 12 months. In the year ended February 28, 1942, a total of 50 cents a share was paid, comparing with 60 cents in the fiscal year of 1941. F. C. van Deirse, 351 California Street, San Francisco, California, is vice-president in charge of operations for Yuba Consolidated Gold Fields.

Operations have been started by the **War Manganese Company** at its property in the Paymaster district of Imperial County, California, about 30 miles from Glamis. Several hundred tons of manganese ore are on the dump and equipment and machinery are being installed. The company has a government contract for 5,000 tons of manganese ore. Facilities at the mine include a 150-ton mill, camp buildings, and a permanent water well pumping 260,000 gallons a day. Roy M. Pike of San Francisco, and associates, are developing the property.

About 2,500 cubic yards of gold-bearing gravel are being treated daily by **Sunmar Dredging Company**, Oroville, California. A crew of 14 men has been employed by the company under the direction of William F. Baxter, Box 228, Oroville, general man-

ager, but priority regulations will make it necessary to shut down the mine. J. H. Frasher, Box G, Palermo, California, is general superintendent for Sunmar Dredging.

Joseph S. Lawrence, Jr., of Sutter Creek, California, recently sold his newly located *Mary Ann* quartz claim to Walter T. Lucot, also of Sutter Creek. The property is located in the Drytown mining district of California.

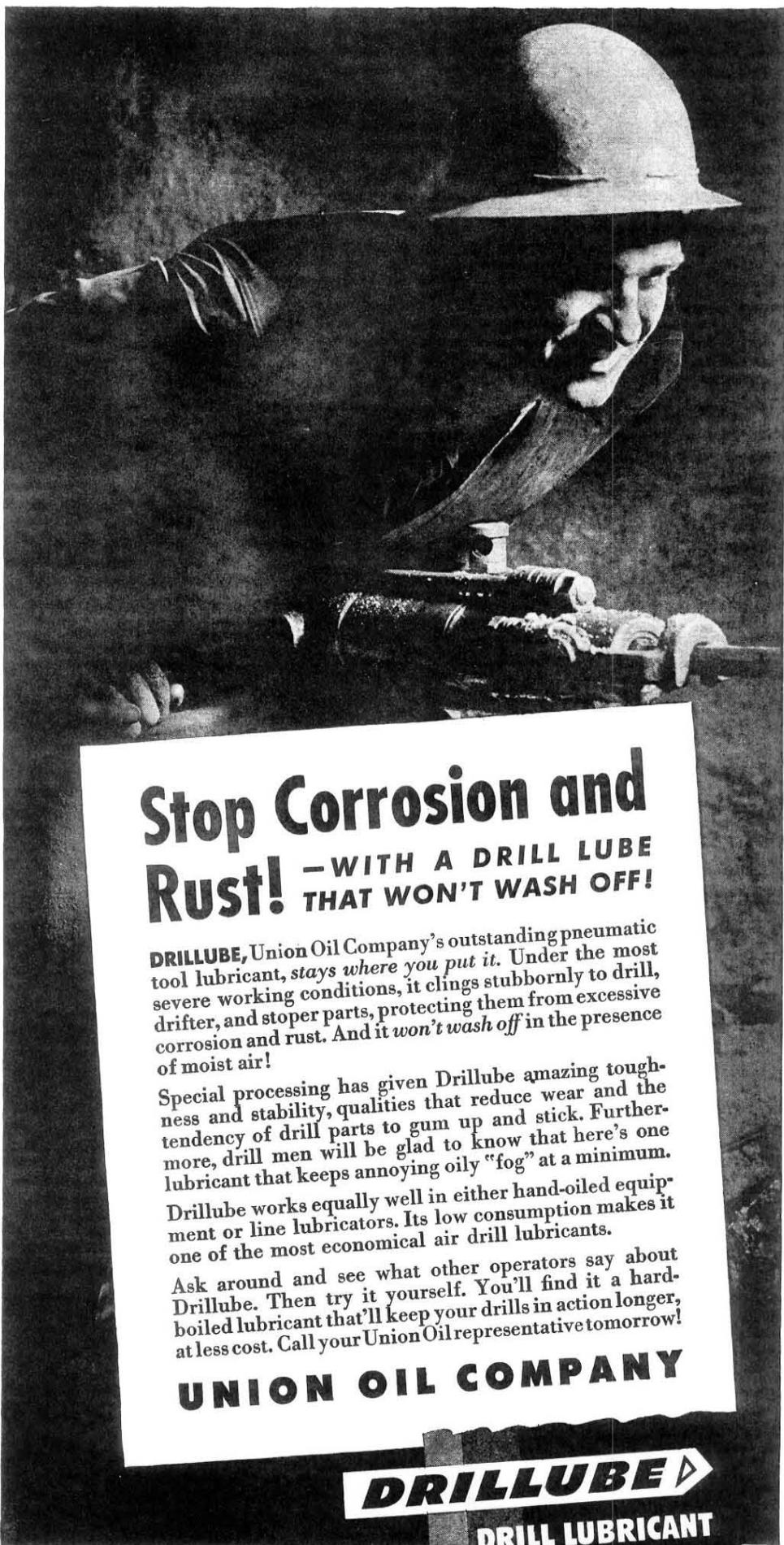
W. G. Donaldson, Box 296, Solvang, California, is producing an average of 45 tons of quicksilver ore daily at the *Red Rock* mine in the Cachuma district of San Luis Obispo County 12 miles east of Los Olivos, California. Charles Gruenig is in charge of operations.

It has been reported that construction has been completed by the *Montrose Mining and Milling Company* on its custom mill near Castella, California, which will treat chrome ores from nearby claims. It is expected that operation of the mill will be started by the company immediately. Phil Munko and L. D. Taylor of Dunsmuir are working with the company, having taken leases on a number of claims in the district, from which they expect to extract ore for milling at the new plant. They are understood to hold a contract with the Metals Reserve Company for 10,000 long tons of chrome ore. Max Schmidt of 39 Baywood Avenue, San Francisco, California, is president of the *Montrose Mining and Milling Company*.

Reconditioning of the *Rough Diamond* crystal mine in Chili Gulch near Mokelumne Hill, California, is reported to be progressing steadily. The old tunnel is being repaired, and necessary machinery and equipment for operation of the mine are being brought in, with early production scheduled. The mine has not been worked for 75 years and is owned by John J. and Thomas McSorley of Mokelumne Hill. S. Menchini is superintendent of operations. It is believed that the urgent need for crystals in military radio equipment will provide a market for the output of the *Rough Diamond*.

Steady progress has been reported on the tunnel being driven from the South Fork of the Yuba River to connect with the workings of the *Zeibright* mine of the *Empire Star Mines Company, Ltd.* The tunnel will make possible the disposal of *Zeibright* tailings into the Yuba River. It is understood that the driving of this tunnel has been the only work carried on at the *Zeibright* during the last year and the mill has not been operated since the tailings dam was destroyed in February of 1940. John R. C. Mann is manager of operations for *Empire Star Mines* and is addressed at company headquarters at Grass Valley, California.

The *Central Eureka Mining Company* has announced a net profit after operating expenses of \$97,700 for the seven months ended July 31, 1942. Production for the period amounted to \$435,505 from 28,769 tons of ore, while depreciation and taxes totaled \$45,500. It is understood that the company paid out \$36,000 in dividends to its stockholders. The company's Sutter



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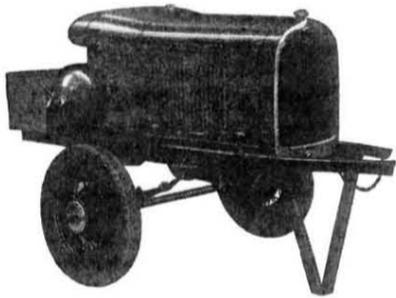
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Creek, California, gold mining property went on a maintenance basis effective October 1, 1942, and a strategic mineral property in Nevada has been acquired by the company. However, recent underground development and diamond drilling at the Sutter Creek mine have indicated a large tonnage of ore between the 3,500 and 3,800-foot levels, and it is expected that the mine will be reopened after the war. C. C. Prior, 111 Sutter Street, San Francisco, California, is president of the Central Eureka Mining Company.

COLORADO

The Revenue Tunnel property at Ouray, Colorado, is reported to have been purchased by L. K. Requa, Box 550, Weiser, Idaho, and William M. Cutler of Ouray. The mines, former producers of lead, silver, copper, and zinc, are owned by the Reynolds Morse Corporation, 1555 Sherman Street, Denver, and include the Cumberland, Revenue-Virginus, Wheel of Fortune, and Terrible claims. A 2,200-foot shaft and 8,000-foot tunnel open the Revenue and a 760-foot shaft has been sunk from the tunnel level. About 17 levels have been opened and most of the production has come from the Virginus and Terrible, with very little work having been done on the Cumberland and Wheel of Fortune veins. Deadwork, development, and production operations will be carried on through the winter months by the new owners.

Lead and zinc values are being recovered from the Mountain King mine dump near Ouray, Colorado. The dumps are under lease to William McCullough and G. A. Franz, Jr., both of Ouray. Several carloads have been shipped out and the material of lower grade will be treated in the Franz mill at Ouray.

H. M. Gregory, 663 Concord Street, Boulder, Colorado, is reported to have secured a government loan for the Vasco No. 2 and Vasco No. 5 mines which he is leasing from Gold, Silver and Tungsten, Inc. The property, which has tungsten values, is located at Tungsten in Boulder County.

H. Guy Pyle and Tom Holden, both of Ward, Colorado, are turning to zinc mining now that the gold mines are being closed. Pyle and Holden formerly operated the Nancy gold-silver mine near Boulder under lease, organized as the Hardrock Mining Company. They now have acquired the Gillard zinc property in the same district.

Water in the Oregon mine is reported to be under control. George Jump, 728 Tenth Street, Boulder, Colorado, is working the property with his sons, under lease from the Vanadium Corporation of America. Unwatering and rehabilitation of workings is being carried to the third level of the mine. Production of high-grade tungsten is said to be coming from the second level.

The Ore and Chemical Company of New York has contracted for the design and construction of a 1,000-ton mill at Leadville, Colorado. The metallurgical design

of the plant was provided by the American Cyanamid Company and will employ the MBI process, one of the heavy-media separation processes. The mechanical design and construction will be done by the Western-Knapp Engineering Company. O. Walvoord of Western-Knapp's San Francisco office is in charge of construction at Leadville, and Kurt A. Spohr, Leadville, is manager for the Ore and Chemical Company. The mill is scheduled for completion January 15, 1943. During the past 10 months the Ore and Chemical Company's metallurgists have tested dumps of most of the mines in the Leadville district. It is estimated that there are more than a million tons of dump ore that will yield 4 per cent lead and about the same amount of zinc by the methods to be used in the new mill. Concentrates also will carry appreciable values in silver.

The General Chemical Company, 40 Rector Street, New York, New York, is reported to have taken over the Alice group of fluorspar claims in Boulder County near Jamestown, Colorado. The property, formerly operated by the Crystal Fluorspar Company, will be worked in conjunction with General Chemical's Yellow Girl, Chancellor, and Burlington fluorspar mines in the same area, some of which also were formerly held by Crystal Fluorspar. The Alice group includes the Eva, Elsie, Hilda, Little Baron, Little Floss, Tom Boy, and Alice mines. Wilbert J. Trepp is superintendent of the company's Boulder County operations, with headquarters at Boulder.

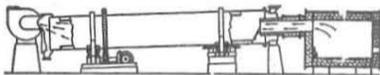
High-grade silver-lead ore is being shipped direct to the Leadville smelter by Red Elephant Metals, Inc., according to reports, and the mill-grade material is being treated in the company's 50-ton flotation and gravity concentration plant. Holdings are in Clear Creek County near Lawson, Colorado. J. D. Cannon, Box 393, Idaho Springs, is general manager.

IDAHO

The Linfor copper-silver property in Shoshone County 10 miles from Enaville, Idaho, on the Little North Fork River, is reported to have been taken over by George Austin, West 611 Twenty-eighth Avenue, Seattle, Washington. The mine, which consists of two patented and three unpatented claims, has been idle in recent years. It is owned by Mrs. Al Page of Spokane. A 350-foot shaft has been sunk on the vein and Austin will reopen the mine from the mill tunnel level, retimbering the shaft from that point.

Purchase payments on its property are stated to have been completed by the Lucky Friday Silver-Lead Mines, Inc., on October 17, 1942. It is stated that the mine and its development were paid for by ore production made during the development program. Present operations are being carried on under contract by the Golconda Lead Mines, John Featherstone of Wallace, Idaho, manager. The mine, located at Mullan, Idaho,

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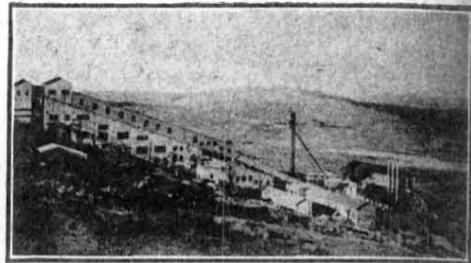
It is believed that economies can be effected and efficiency increased by the transfer as all funds available for geophysical work can be combined and all work carried on by one department. Recent Congressional action made available to the Bureau of Mines additional funds for mineral explorations, and the new geophysical division will engage in certain aspects of this work, demands for which are increasing as the war program gains momentum.

DULIEN TO OFFER MINE AND MILL EQUIPMENT FOR SALE

DULIEN STEEL PRODUCTS, INC., of California, has purchased and is offering for sale the equipment, material, buildings, etc., located at the Fremont Gover mine one mile east of Drytown, California. This equipment formerly was the property of the Fremont Gover Corporation of Nevada.

The Fremont Gover mine holdings were acquired originally by the Fremont Consolidated Corporation of Nevada and had been operated intermittently until 1941. The principal ore values are in gold. Mine development includes two three-compartment shafts: the Fremont, which is down 2,900 feet, and the Gover, which extends to the 1,500-foot level. Prior to a shutdown in August of 1939, the mine had been on a regular production basis for some time, a well-equipped flotation mill treating from 175 to 200 tons of ore daily.

The Dulien interests also are liquidating the equipment, material, and buildings of the Timber Butte mill, formerly the property of the Anaconda Copper Mining Company, and of the Black Rock mine, at one time owned by the Butte and Superior Mining Company. The Butte and Superior company, more or less idle since 1930, was acquired in 1940 by the Anaconda interests. Both the Timber Butte mill and the



The Timber Butte mill at Butte, Montana, which is being liquidated by the Dulien Steel Products.

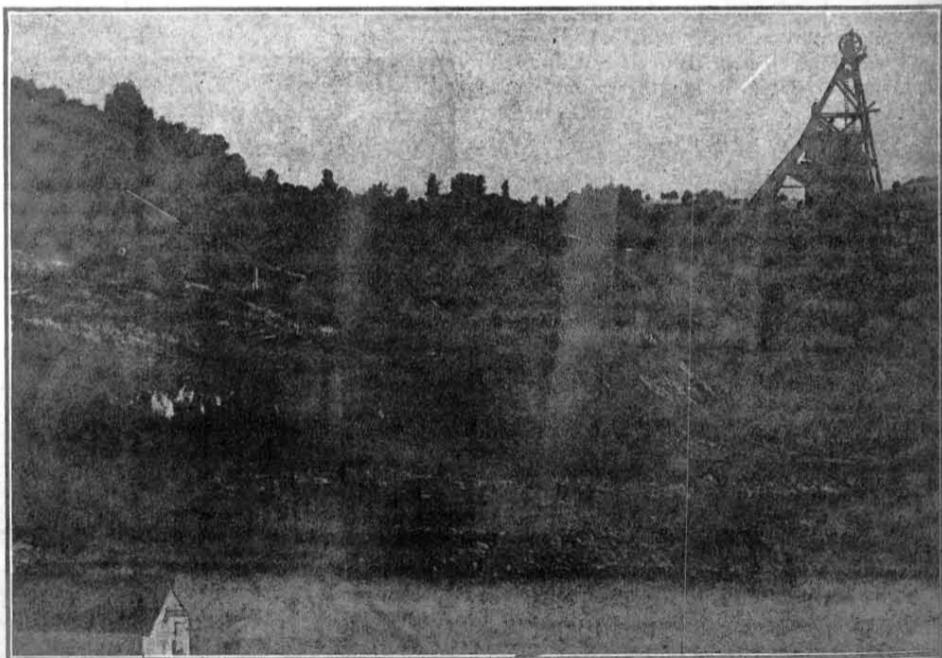
Black Rock mine are located at Butte, Montana.

In Nevada, a 95 per cent stock interest in the Tonopah and Goldfield Railroad Company has been acquired by Dulien Steel Products, Inc., and it is understood that the Dulien interests will operate the railroad between Mina and Goldfield. It was believed at first that the entire 102-mile line would be taken up and sold for scrap.

Dulien Steel Products, Inc., maintains offices in Los Angeles, San Francisco, Portland, Seattle, Butte, New Orleans, and New York. During the current liquidation of the Fremont Gover equipment, a representative is stationed at that property, near Drytown, California.

CAR OWNERS COOPERATE FOR ECONOMY AT ANACONDA SMELTER

THE Anaconda Copper Mining Company has made a complete survey of car owners among its employes at the Anaconda smelter in order to reduce the use of cars to a minimum. The owners were registered and transportation plans were laid out so that a maximum of people could be carried to and from work with a minimum use of cars. This action is in line with the OPA transportation plan.



A general view of the Fremont mine of the Fremont Gover Corporation, showing steel headframe, wooden ore bin, timber shed, electrical store room, warehouse, and hoist control room. All equipment is being offered for sale.

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Palace at Lovelock. In recent years he carried on several milling projects, re-treating old tailings in Nevada and California.

Wilford Dennis, 68, of Reno, Nevada, died after a brief illness on October 29, 1942, at Reno, Nevada. A native of Sutter Creek, California, Dennis had been working the Desert Queen and Oro Fino mines in Churchill County, Nevada, in recent years as the Manitou Gold Mining Company, Inc. As a young man he was active in many different enterprises and worked gold properties both in California and in Nevada.

J. Parke Channing, a retired mining engineer, died October 11, 1942, in Los Angeles, California, at the age of 79. Channing was born in New York and was graduated from Columbia University in 1883. His early work was in the Lake Superior iron and copper mines and in Montana, but in 1896 established consulting offices in New York. He developed and equipped the mines and reduction works of Tennessee Copper Company, which he served as president from 1903 to 1908. In 1905 he organized General Development Company which developed Miami Copper Company.

William D. (Johnnie) Green, 61, flotation metallurgist for the Combined Metals Reduction Company at Bauer, Utah, died October 22, 1942. Green, who has specialized in flotation technique, especially as applied to complex zinc ores, was associated with the early development of the Fagergren flotation machine. He was employed at the Butte and Superior property in Montana and by the Utah Copper Company. He developed the process which Combined Metals is using at its Bauer plant in Utah and the new plant at Pioche, Nevada.

Thomas Skewes Saunders, prominent consulting mining engineer in Mexico, died in Mexico City, October 28, 1942, at the age of 62. Saunders was born in Plymouth, England, and after graduating from the Camborne School of Mines in Cornwall, he came to America. He was employed by the Phelps Dodge Corporation at Globe, Arizona, and then went to Mexico where he remained for the next 40 years. He was superintendent of the San Luis Mines, Gabriel, Durango, Mexico, and of Los Ocotes, Oaxaca, Oaxaca, Mexico, and was general manager of Cia. Minera Dos Estrellas, El Oro, Michoacan, Mexico.

Edward Bohlinger, 67, is believed to have killed himself at the home of his sisters in Phoenix, Arizona, November 4, 1942. Bohlinger, who was of Patagonia, Arizona, had retired as an Arizona state senator last April because of ill health. He was a veteran of the Arizona legislature, having served several terms in the House of Representatives, retiring after the twelfth session. In 1939 he was appointed a member of the Senate in the fourteenth session to succeed H. C. Roesner of Nogales, who resigned. Bohlinger also was interested in mining in Arizona, having been vice-president and acting manager of the Richardson Real Estate, Mining and Commercial Corporation, Patagonia, Arizona, and at one time superintendent of the Hardshell mine, Patagonia.

FRED H. PERKINS

FRED H. PERKINS, field engineer for the Department of Mineral Resource in the eastern district, died November 7, 1942, at Phoenix, following a brief illness. He had been a resident of Arizona since 1911 when he came to Williams to engage in sheep ranching.



Fred H. Perkins

Perkins, a native of Kansas City, Missouri, was graduated from the University of Missouri in 1900 with a degree in civil and mining engineering, and a bachelor of science degree in general science. For 10 years after completing his education he was associated with mining companies in Wyoming, Utah, and Oregon. Following three years of sheep ranching in Arizona, he entered consulting practice in the Southwest and Mexico, continuing in that work for six years.

He joined the staff of the state land department in 1920 and two years later became associated with the engineering department of the City of Phoenix. After five years with that department he transferred to the office of the city assessor, where he worked on the project of revaluing the property of the entire city.

In 1930 Perkins undertook the development of the Hassayampa Mountain Club project at Prescott, directing the subdivision of 600 acres of land. He went to Winslow in 1932 and for the next two years was employed as inspector and as assistant to the city engineer. Following a three-year period of general practice, he went to the Arizona State Teachers College at Tempe where he was employed on engineering projects. For 3½ years, before he joined the staff of the Department of Mineral Resources in May 1942, he had engaged in a general mine consulting practice in the Southwest and Mexico.

LEROY V. ROOT

LEROY V. ROOT, secretary of the Mohave County Council, Arizona Small Mine Operators Association, and member of the board of governors, Department of Mineral Resources, died at his home in Kingman, Arizona, November 10, 1942. He had been ill for more than a month, but continued his work as editor of the Mohave County Miner until a few days before his death. He was 73 years old.

Born in Lansing, Michigan, Root came west while still a boy. He had devoted most of his life to newspaper work, having established the Needle's Eye, later the Needles Nugget, at Needles, California, and the Gallup News at Gallup, New Mexico. For the past six years he had been editor of the Mohave County Miner. He was active in mining, also, and held interests in mining properties in the Mohave County district. In addition to his other activities, Root held the post of president of the Mohave County Chamber of Commerce.

Box 776, Atolia, California, president; H. R. Golenor, vice-president; and James I. Moore, 2850 Fermentia Street, San Bernardino, California, general manager. Company offices are at 610 South Broadway, Los Angeles.



A dividend of 25 cents a share has been declared by the Golden Cycle Corporation, payable December 10 to stockholders of record November 30, 1942. Last March and again in June the company paid 50 cents a share and 25 cents in September. During 1941 dividends amounted to \$2.75 a share. Plans are being drawn by the WPB and the company to convert the custom gold plant at Colorado Springs to handle custom zinc ores. A lack of milling facilities to treat the complex zinc-bearing ores in Colorado is hampering the operation of many properties. Many mines can be operated if a market can be provided by the conversion of the Golden Cycle plant. Merrill E. Shoup, Box 86, Colorado Springs, Colorado, is president.

George E. Collins, 307 Boston Building, Denver, Colorado, is reported to be planning to reopen the Pozo zinc property in the Nevadaville district of Gilpin County, Colorado. The mine is near the holdings of the California Hidden Treasure Mines Company of which Collins is president. An electric power line will be extended to the Pozo.

The New Jersey Zinc Company, 160 Front Street, New York, reports a net profit of \$5,480,789 for the nine months ended September 30, 1942, after provision of \$950,000 for estimated additional federal taxes for the nine months. This equals \$2.79 a share and compares with \$7,033,390 for the like nine-month period of 1941 or \$3.58 a share. For the September quarter the company shows a net profit of \$1,986,471 before provisions for increased taxes under the new revenue bill. This compares with \$2,519,490 for the September quarter of 1941 and \$2,152,984 for the quarter ended June 30, 1942. The company operates in the western states as the Empire Zinc Division.

NEW COINS

Plastic pennies, wooden nickels, perhaps a 2½-cent piece, may make their appearance next year. Senator Wagner has introduced a bill permitting the Treasury to make any coin under 10 cents of any kind of material, and to change denominations under a dime.

The new nickelless 5-cent piece, now being minted, is said to look just like the old one. It is made of an alloy carrying 56 per cent copper, 35 per cent silver, and 9 per cent commercial manganese. The standard nickel is 25 per cent nickel and 75 per cent copper.

N. B.—It is guaranteed to work in all 5-cent slot machines.

Between 12 and 16 men are employed by the Denver Equipment Company in reopening the San Antonio group of claims near Ouray, Colorado. Buildings have been constructed and equipment installed at the old Koehler tunnel and work in the tunnel is being started. C. L. Brown is at Ouray for Denver Equipment, assisted by Glen Boyd. Denver offices are at 1419 Seventeenth Street, with Arthur C. Daman, president and general manager.

E. W. Creel of Ouray, Colorado, is continuing the development of the Mickey Breen property near Ouray. The company is an old producer.

An electric line is being installed at the Colorado Sunrise mine near Ouray, Colorado, and equipment is on the ground awaiting installation. The property, which has values in copper, lead, and zinc, will be operated steadily throughout the winter. Ralph B. Wright, Ouray, and associates are working the mine.

It is reported that the recent ruling which closed gold mines will not affect the Telluride Mines, Inc., at Telluride, Colorado, which has a P-56 rating. Besides recovering gold and silver from its ores, the company has installed equipment to recover zinc values. Recent developments are showing higher zinc content. Harold S. Worcester of Telluride is manager.

The Climax Molybdenum Company, 500 Fifth Avenue, New York, reports for the quarter ended September 30, 1942, a net profit of \$3,143,800 equal to \$1.25 a

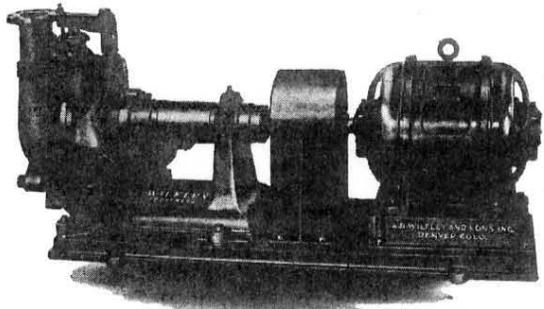
share. Provision for federal income, surtax, and excess profits taxes totaled \$2,871,300. This compares with a net profit for the like quarter of last year of \$2,569,627 or \$1.02 a share, when federal taxes were \$820,990. For the nine-month period ended September 30 the company reports a net profit of \$8,927,600, equal to \$2.54 a share, compared with \$6,288,332 or \$2.49 a share for the same period of 1941. Federal taxes for the nine months totaled \$7,203,000 against \$1,988,027 in 1941. The report states that these figures do not take credit for the 10 per cent postwar refund of excess profits taxes, which will amount to \$373,400 for the nine-month period of this year. A special dividend of \$1 per share, was paid November 17, 1942, to stockholders of record November 5. A similar payment was made in November of 1941. This brings the payments in 1942 to \$1.90 a share.



Charles La Marr of Stanley, Idaho, is driving a crosscut into his Warrior's Mark property in the Seafoam mining district. The tunnel is below the old workings of the mine and will open a body of lead, silver, zinc, and antimony ore which outcrops on the Warrior's Mark No. 1 claim. The crosscut tunnel will be about 250 feet long and will undercut the outcrop at a depth of about 40 feet.

Development work has been started by the Highlands Aurora Mining Company, a new organization formed in joint action by the Butte Highlands Mining Company and the Aurora Mining Company in an effort to open the Aurora ground for production. Action was authorized by stockholders of both concerns, each of which holds 600,000 shares in the new company. The Aurora company has agreed to option 300,000 additional shares of Highlands Aurora stock at 10 cents a share to provide funds for development. A 1¼-mile power line is being strung to the Aurora property in the Beaver Creek district 15 miles north of Wallace, Idaho, to connect with the main line of the Washington Water Power Company. A 500-foot shaft will be put down

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dated **Copper Company**, Inspiration, Arizona. It is expected that the plant's acid production will be used by the company in leaching operations for the extraction of copper. The plant was constructed by the Chemical Construction Company, New York, New York, with M. H. Maurer as engineer in charge.



W. G. Donaldson, 50 Alta Road, Berkeley, California, recently disposed of his interest in the **Redrock** quicksilver mine to Harvey Mudd, 1206 Pacific Mutual Building, Los Angeles, California, and associates. The property is located about 50 miles north of Santa Barbara and 20 miles east of Solvang in the Cachuma mining district of Santa Barbara County, California. Operations were carried on formerly under the name of the Red Canyon Mining Company, but Mudd and associates will operate as the **Cachuma Mining Company**. The mine office is Box 296, Solvang, California.

Stripping of overburden has been started at the **Spud Patch Placers** in the old Spud Patch area at Atolia in San Bernardino County, California, by the **Hoefling Brothers**, J. W. Hoefling, managing partner, Box 786, Sacramento, California. Water connections to the washing plant a few miles away are being completed. The stripping is being done with a 2½-yard dragline and a D-8 Caterpillar unit. The washing plant has a capacity of 50 yards per hour. The Spud Patch property was a scheelite producer during the last war and was worked on a hand mining basis.

B. H. Patrick, Harry Rickwalt, and associates are reported to have sold three quartz lode claims, the Sunshine No. 1, New Deal, and Bronx in the Randsburg, California, area, to **Placer Concentrators**. The new operating company is headed by W. B. Thurman of Lodi, California, and Grant Morton, Lodi, also is associated with this group. Placer Concentrators is reported to have installed a Straub ball mill, Denver pan amalgamator, and a Universal Overstrom table in the Stringer district near Atolia in San Bernardino County, California. The same group is operating a tungsten property in this area under the name of Smelters Corporation.

Discovery of a large deposit of high-grade manganese ore near Santa Maria in San Luis Obispo County, California, has been announced by Ed Quillen, 221 West Main Street, Santa Maria. The land is comprised of 90 acres and Quillen is planning to start immediate development at the property. Quillen formerly was operating in Montana.

At the present time an average of 4½ tons of manganese ore are being shipped daily from the **Stirnman** mine near Pioneer, via Jackson, in Amador County, California, and plans are being made to increase daily production to 10 tons within a short time. A total of 50 tons of ore

are reported to have been shipped to the government stockpile at Auburn, California, since the mine was reopened recently by Dr. J. T. Stacy of Jackson. It is stated that the ore being shipped carries as high as 53.65 per cent manganese. Present operations consist of driving a second tunnel at the mine to connect with the one from which recovery of ore has been made. A major problem at this property has been transportation of the ore and it is understood that a petition seeking aid in construction of an access road from Pioneer Station to the mine, a distance of approximately 1½ miles, has been made by Stacy. Ten men have been employed at the Stirnman.

Shoshone Mines, Inc., has completed sinking the main shaft of the Noonday mine to the 600-foot level, opening up a large body of lead-zinc-silver ore. The property is located near Tecopa and north of Baker in Inyo County, California. Ore is being trucked for a distance of 90 miles to a spur on the Union Pacific Railroad at Midway, California. The company also is working the Gunsight mine and the adjacent Great Extension group, which is in the same district and is said to contain large low-grade lead deposits. W. Buford Davis, 10600 Lindbrook Drive, Los Angeles, California, is vice-president and general manager of the company. Burhl Dykhouse, formerly with the Golden Anchor Mining Company of Idaho, also is associated in the Shoshone Mines operations.

About 40 tons of quicksilver ore have been shipped from the property of the **Geyser Development Company** in Hog Canyon in the Geyser Peak district of Sonoma County, California. It is understood that the western portion of the canyon has been subleased by Frank Dewey of Healdsburg, California, to C. M. Chandler, Nelson Peterson, Matt Bartlett, and Tom Cordoza. At present the new lessees are engaged in permanent construction work and spring water is being piped for use at the mine. A road is being constructed to the mine by the operators.

According to reports, the old Great Northern quicksilver mine was acquired recently by Bryan W. Burch of Seattle, Washington, and operations are already

under way. The mine is located 24 miles from Yreka in Siskiyou County, California, and will now be known as the **Empire Canyon Quicksilver** mine. William S. Barquist, Yreka, is manager in charge of operations.

The **Anglo-American Mining Corporation, Ltd.**, Walter Lyman Brown, 206 Sansome Street, San Francisco, California, president, is reported to have suspended all work at its Yellow Aster cyanide plant near Randsburg, California. It was explained by the company that the action was due primarily to the shortage of labor. However, the recent federal ruling closing gold operations has been appealed by the concern because its crew did not include men who could engage in copper mining. Eighteen men had been employed in the operations. The corporation began its operations at the Yellow Aster mine in 1933 and the cyanide plant was constructed in 1935. Since that date the plant has handled approximately 2,500,000 tons of tailings and it is estimated that there are from 250,000 to 500,000 tons remaining at the property untreated. Lewis S. Allsman, Randsburg, is general superintendent of the plant for the Anglo-American Mining Corporation.

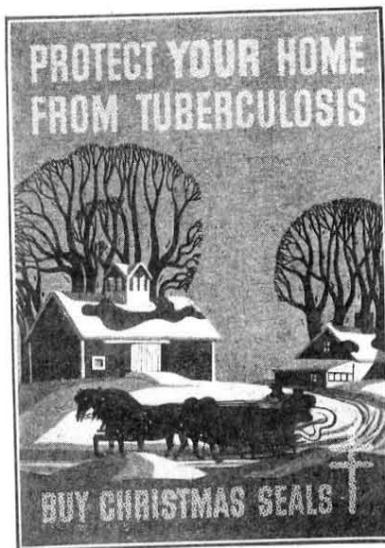
It has been reported that the **Ocean View** mine near San Simeon in San Luis Obispo County, California, was leased recently to Oscar E. Hanno, Cambria, California, by the owner, the Hearst Sunical Land and Packing Corporation. The Ocean View is a quicksilver property.

Dwight Douglas, Garden Valley, California, is reported to be installing a tungsten concentrator east of Garden Valley in El Dorado County, California, to treat scheelite from a deposit being developed near Rock Creek. The property is being worked under the name of the **Bear Creek Tungsten Mining Company**. H. G. Walker is agent and superintendent for the company.

Luke Williams, 226 South Church Street, Grass Valley, is planning to start concentration of chrome ore at a large deposit which he owns northwest of Grass Valley in Nevada County, California. A five-stamp mill and other machinery have already been installed at the property and plans are being made to move in a ball mill after preliminary testing of the ore. Williams reports that 3,300 feet of flume and ditches will be completed shortly to bring additional water to a reservoir located behind the dam. The Adams Company of San Francisco is understood to have operated the mine during the last war and shipped 2,000 tons of chrome ore.

Four carloads of lead ore are being shipped monthly from the **Ophir** mine, nine miles northeast of Trona, California, in the Panamint Mountains, by C. O. Mittendorf, Box 321, Randsburg, California. Mittendorf is leasing the ground from the Engineers Exploration Corporation. Tom Hitz is associated with him in the operation of the Ophir.

According to reports, **Panaminas, Inc.**, is planning to increase the crew at its **Adamson** tungsten mine from 40 to 150 men for operations throughout the winter. The property is near Bishop, California,



and is being leased from the owner, D. B. Adamson, Bishop, by Panaminas, Inc., a subsidiary of Ventures, Ltd., a Canadian concern. Underground work is reported to have reached a depth of 180 feet and drifts are being run from this level. A tunnel has been started toward the base of Mt. Morgan for the purpose of tapping deposits at a depth of 2,100 feet. Arrangements have been made with the Metals Reserve Company for marketing the company's output and it is planned that Panaminas, Inc., will ship approximately 300 tons of ore daily to the U. S. Vanadium Corporation mill near Bishop. A. H. Heller, 1800 North Hill Avenue, Pasadena, California, is manager of operations for Panaminas and Frank Merrillee is superintendent.

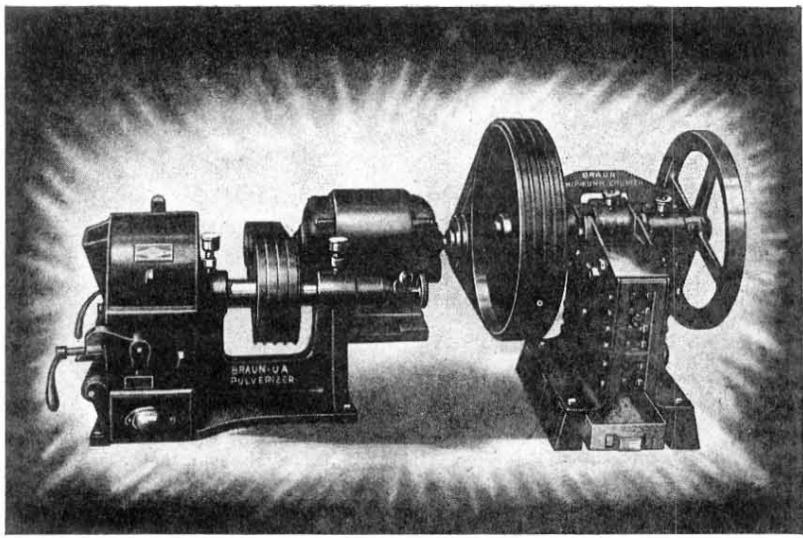
The Rowe or Empire No. 1 shaft at the Empire mine of the Empire Star Mines Company, Grass Valley, California, is reported to have been sunk to a depth of 1,400 feet, 300 feet beyond the connecting level with the Empire No. 1 shaft. It is expected that additional connecting levels will be opened up as sinking of the Rowe shaft is continued. John R. C. Mann is manager of operations for Empire Star Mines and is addressed at company headquarters at Grass Valley, California.

Lawrence K. Requa, Box 550, Weiser, Idaho, is reported to have acquired under lease with option to purchase the six Polar Star mining claims in San Luis Obispo County, California. The Polar Star is a quicksilver property.

Shelby L. Elliott, Meridian, California, and Todd B. Elliott, Box 305, Berkeley, California, have acquired a 10-year lease on portions of the Canada de Los Osos and La Laguna ranches from the owner, V. L. Souza. The chrome property is located in Los Osos Valley of San Luis Obispo County, California. According to the terms of the lease, the Elliotts agreed to commence operations within 60 days and will employ no less than 60 men on eight-hour shifts daily.

An appeal has been made on behalf of the Golden Feather Dredging Company, Oroville, California, in order that further work can be carried on by the firm before shutting down completely in compliance with the recent War Production Board ruling concerning gold mines. It is hoped that the company will be able to clear the channel of the Feather River near Oroville in order to prevent the possibility of a flood. The project would require at least 60 days. E. A. Wiltsee, Room 1003, Wells Fargo Bank Building, 14 Montgomery Street, San Francisco, California, is general manager of the Golden Feather Dredging Company.

Milling operations have been started by the Mine Development Company at the Pride of Mojave mill located three miles south of Mojave in Kern County, California. The company leased the mill recently and revamped the plant so as to begin recovery of tungsten immediately. The company also is reported to be working the Chocolate Drop ground near Blythe in Riverside County, California. Officers of Mine Development are Hewitt S. West,



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The Manufacturers Tell Us

Two Hundred Years of History—The Taylor-Wharton Iron and Steel Company, High Bridge, New Jersey, is celebrating this year the 200th anniversary of the company's founding and in commemoration of the event has prepared a history of the organization, America's oldest iron and steel producer.

The booklet is an exceptionally interesting one, replete with pictures of old legal documents to verify the dates of important company transaction, of the ruins of some of the early day structures, and of Taylor-Wharton products which have helped to make 200 years of industrial history. Other groups of pictures show the company's products which have seen service in every war in which the United States has been involved. These range from the old mold used to cast cannon balls for Washington's army to the pierced and drawn seamless steel cylinders for high-pressure gases, the shell forgings, and the steel treads for medium tanks which are being manufactured for World War II.

Taylor-Wharton dates its history back to 1742 when Allen and Turner of Philadelphia leased 3,000 acres of land on Spruce Run and erected their first iron furnace, carrying on the operation under the name of Union Iron Works. Operations at the Union Iron Works continued under various names until incorporation of the Taylor Iron and Steel Company in 1892 and the company's initials were taken for the present trademark "Tisco." The present organization, Taylor-Wharton Iron and Steel Company, was formed in 1912.

New Electrode Plant—The National Cylinder Gas Company, 205 West Wacker Drive, Chicago, Illinois, announces that its new electrode plant, located in California, is now in production. It is said to be the first in the Pacific Coast area.

The strong industrial position of the Pacific Coast area has been stimulated to such a great extent by war production that the supplying of welding electrodes became a serious problem. To meet this demand, National Cylinder Gas, in cooperation with the U. S. Navy, put this first electrode plant for the area into operation in the short period of three months. Millions of pounds of Hollup "Sureweld" protected-arc electrodes have been produced, the entire output going to industries essential to the war.

The California plant is the third which National has in operation, the others are

located in the Midwest and Canada. B. R. Tryyna, plant superintendent, and Arnold Russell, chief inspector, have had many years' experience at the company's Midwest plant. The Pacific Coast sales office of National Cylinder Gas Company is under the direction of A. A. Klein, vice-president, and is located at 4950 Santa Fe Avenue, Los Angeles, California.



Respirators with Plastic Filter Containers—Mine Safety Appliances Company, Pittsburgh, Pennsylvania, announces that filter cases of black plastic have been designed for its M.S.A. Comfo dust respirator so that metal may be saved for vital war uses. According to the manufacturer the re-designed plastic filter cases have high impact strength with no electrical conductivity, and are not affected by perspiration. It is believed that they offer a better appearance plus less resistance to air flow.

The respirator has twin side-placed replaceable filters of unusually large area. The unit is easy to clean and maintain, and is available in types to meet various dust and mist conditions. The new filter container units are thinner, with rounded edges, permitting greater sidewise and downward vision.

Instrument Catalog—Wheelco Instruments Company, Harrison & Peoria Streets, Chicago, has issued Bulletin Z-6100, giving a condensed listing of the company's complete line of measuring and control instruments. Unit construction of temperature controllers is described and illustrated, as is the company's "electronic" principle for obtaining control without contact between measuring and control functions of the instrument. The bulletin contains prices and the numbers of complete catalog sections on each piece of equipment.



Detection of Scheelite by Ultra-Violet Rays

SCHEELITE, the principal mineral of tungsten, as well as certain other substances, will glow when subjected to ultra-violet radiation, and reacts most strongly under the near ultra-violet (3,200—4,000 Angstrom region), commonly called "Black Light." Other materials react only under the far ultra-violet, or in the 2,537 Angstrom region. (1 Angstrom unit=4 billionths of an inch, approximately). Substances are classified as fluorescent if they glow only during the period of excitation.

Phosphorescent materials glow when subjected to light and ultra-violet radiation, and continue to glow for some time after the source of excitation has been removed.

Fluorescence is the ability of a substance to absorb invisible ultra-violet wave lengths. The exact cause of fluorescence is rather uncertain, but it is probable that the following explanation is applicable. Minerals, in common with other substances, are believed to consist of atoms, which are units too small to be visible as such, even under high-powered microscopes; their existence and structure are deduced by scientists by reasoning from the electromagnetic behavior of matter. According to the Bohr theory, atoms are believed to consist of a central nucleus around which electrons revolve in orbits. When an atom is exposed to ultra-violet radiation the electrons pass from an inner orbit to an outer one; energy supplied by ultra-violet light is absorbed during the passage. In this disturbed condition the atoms are unstable and, in order to re-establish themselves, the displaced electrons tend to return to their inner orbits. During their return, the electrons emit energy in the form of radiations absorbed in their displacement outwards. These radiations of wave lengths of light are visible to the eye and are known as fluorescent light. The substances capable of emitting such light are known as fluorescent substances.

Ultra-violet wave lengths are considered to be those lying between 136 Angstrom units and 4,000 A. Visible light lies between 4,000 and 8,000 A., and infra-red or heat rays lie between 8,000 and 20,000 A.

NOT all minerals fluoresce under ultra-violet radiation, or even all varieties of the same mineral. The exact cause for this is unknown, but it may be due to minute amounts of impurities present in the different mineral varieties; these amounts are so minute that their presence can be determined only spectrographically.

The natural color of any mineral cannot be correlated with the color of its fluorescence; some colorless varieties of the same mineral often will show different intensities and colors of fluorescence, depending on the source of the ultra-violet

While there are four main sources of ultra-violet radiation, the mercury vapor arc is the one used most generally by geologists and engineers for the detection of scheelite. The brilliant fluorescence of scheelite makes possible the detection of small areas, down to the size of a pin head, on the exposed surfaces of mineralized material.

radiations. Of the four main sources of ultra-violet radiation, the Argon bulb, iron arc, germicidal lamp, and the mercury vapor arc, the latter appears to produce the most intense fluorescence in the largest number of minerals. This is due to the greater intensity of the shorter ultra-violet wave lengths emitted and the correlation between these shorter wave lengths and increased excitation of fluorescence in minerals.

There are approximately 125 minerals which have the property of fluorescing under sources of the shorter ultra-violet wave lengths. Among those minerals which fluoresce most easily under almost any source of ultra-violet radiation are the following: some fluorites, some ambers, hyalite opal, dacite, scapolite, petroleum, some sphalerites and willemites. Scheelite is not included in the above list as it will not fluoresce except under a strong source of ultra-violet radiation.

Scheelite may fluoresce from an oyster white to a golden yellow, depending on the impurities present, and the locality from which it is obtained. However, as a rule, scheelite fluoresces a vivid blue.

Aside from scheelite certain other tungsten minerals also have the property of fluorescing under high intensity ultra-violet radiations, for example, powellite fluoresces orange, and cuproscheelite yellow.

IN practice, ultra-violet radiations are obtained from three main sources, to wit, strong-arc, mercury vapor lamps, and the G. E. germicidal lamp with corning filter.

The strong-arc type of lamp consists of the following component parts:

1. Transformer to step 110 volts a.c. up to 4,500 volts.
2. Mica condenser with a capacity of 0.004 microfarad at 3,500 volts.
3. A spark gap with adjustable and replaceable iron electrodes.

The wave length of the ultra-violet radiations emitted by a high-tension spark between iron electrodes lies between the range of 4,270 to 2,100 Angstrom units. Scheelite will fluoresce brilliantly under radiations from such a source.

Mercury vapor lamps are so constructed that an electrical discharge is sent through the mercury vapor between metallic mercury electrodes. This type is well suited for the detection of scheelite.

The new General Electric 30-watt germicidal lamp, with a corning number 986 filter having ground and polished surface, is an ideal unit for permanent installation. It is a cheap source of ultra-violet radiations and produces an abundance of the higher intensity ultra-violet radiations. Scheelite will fluoresce very satisfactorily under radiations from such a source.

Ultra-violet radiation is now widely used by geologists and mining engineers for the detection of scheelite. As scheelite is earthy in lustre and may vary considerably in color from oyster white to orange, it is not always distinguishable in ordinary white light from certain gangue minerals, such as quartz, carbonates, and some lime—silicates. Under the influence of the shorter wave lengths of ultra-violet light all scheelite will fluoresce, unless too contaminated by impurities. Quartz never fluoresces and the carbonates only rarely, and then usually to a strong pink color which is easily distinguished from the vivid blue of scheelite. Due to the brilliant fluorescence of scheelite, small areas down to the size of a pin head can be recognized readily on exposed surfaces of mineralized material.

In quartz veins and veinlets in which scheelite is white in color and occurs in small grains, it may be detected readily only by its fluorescence under the influence of ultra-violet radiations.

Scheelite which occurs very intimately associated with sulphides, particularly in a vein in which the proportions of the sulphide gangue are large, is most readily recognized by the use of ultra-violet light. The variety and shades of colors possessed by many different minerals found in calcic—silicate zones, makes the field detection of scheelite difficult in ordinary light, but very simple if made in ultra-violet light.

SCHEELITE from any new discovery always must be checked chemically. It must be noted that willemite, Zn_2SiO_4 , a mineral which commonly occurs in calcic—silicate zones with scheelite, fluoresces strongly and care must be taken not to confuse this mineral with scheelite.

The best results are obtained by taking a portable ultra-violet unit underground, or using it in a dark room. The examination of surface workings at night may be inconvenient, but by observation of the actual outcrop with the ultra-violet lamp, the distribution of the scheelite within a vein or in an irregular replacement area, may be studied and any trends or directions of improved mineralization noted.

*Metallurgist, Toronto, Ontario, Canada

The cards shown in the accompanying figures may be used in grading scheelite-bearing veins. The cards should be mounted on a piece of stiff cardboard the same size. The areas blocked out on the cards are in square inches. This method is described in the Bulletin of the Canadian Institute of Mining and Metallurgy, February 1942, in detail, and is said to be very accurate.

To grade a scheelite bearing vein, a card is selected which shows areas that are similar in size and shape to areas of scheelite in the vein. The area of each aggregate of scheelite is measured by comparison with a standard area on the cards. The vein surface should be reasonably smooth and clean, and should total about 10 square feet. The approximate grade of this section of the vein is given by the following formula:

Per cent WO_3 equals the sum of scheelite in squares inches divided by the total area vein surface in square feet times 1.2.

REOPENING ANNOUNCED FOR OLD NEWTON COPPER MINE

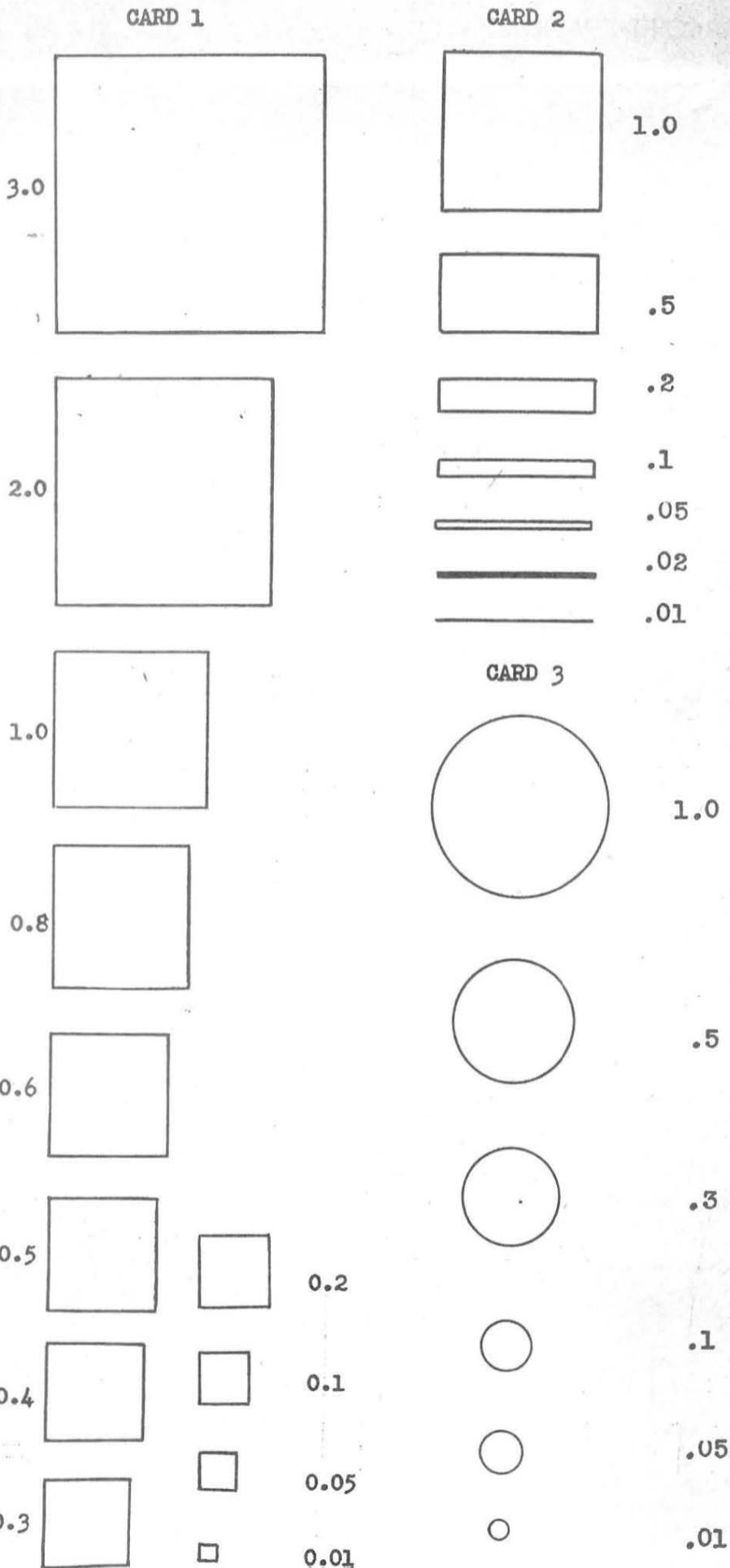
THE old Newton copper mine, located about seven miles west of Jackson in Amador County, California, is being reopened by J. H. Lester, Jackson. The property comprises 675 acres and is under option to Lester from Fred W. Dufrane.

Dewatering of the mine to the 400-foot or lowest level is reported already completed by the new operator and at present the first of three 1,000-foot drill holes, contracted for by the Sullivan Core Drilling Company, has reached the 900-foot point. The drilling program is being carried on by the Bureau of Mines under the direction of Frank J. Wiebelt, Tucson, Arizona, resident engineer. It is planned to tap the ore body at a depth of 750 feet below the Newton croppings. Before the mine was closed down 43 years ago, ores from this mine were said to be distinguished by their purity, having values in copper and very little gold and silver.

Lester plans to ship ore from the Newton to the International Smelting and Refining Company at Salt Lake City, Utah. It is expected that a crew of 40 to 50 men will be employed at the mine when regular operations are under way.

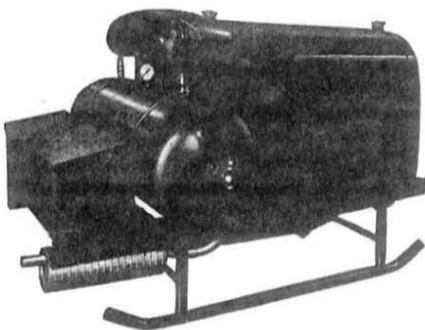
This mine was first operated in 1866 by C. T. Meader and Company, which had purchased a controlling interest in the property in 1865. Workings at that time are reported to have developed a vein of copper sulphides, ranging from 12 to 34 per cent copper. Only a small tonnage of ore was taken out by the Meader group. It is estimated that during this operation the Meader company shipped about 1,200 tons of copper ore, leaving from 30,000 to 40,000 tons of ore in sight when the mine was shut down.

In 1886 the mine was reopened by Howard D. Ranlett, who installed an 80-ton smelter at which he treated about 3,500 tons. In 1889 Ranlett discontinued underground mining. Total production from 1866 to 1890 has been listed as 33,000 tons of ore. From 1901 to 1902 Ranlett treated about 10,000 tons of dump material at the Newton.



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cently following the destruction by fire of the company's mill, has gone to Republic, Washington. He is working on the staff of the Knob Hill Mines, Inc. Wagner had been with the Carson Hill Gold Mining Corporation for the past eight years, and prior to that time worked in mines in the Philippines.

Walter H. Wilson, Portal, Arizona, has accepted the position of district engineer in Brazil under Carl Schwegler, director in Brazil for the Board of Economic Warfare. Wilson recently was granted a Class C RFC loan for the Ainsworth mine in Cochise County, Arizona, and applied for a Class B loan for the King Copper mine, which adjoins the Ainsworth. Wilson has appointed Ralph T. McKinnon in charge of these mining operations.

H. E. Hall of Lovelock, Nevada, who has been employed for the past year as mine foreman by the United Tungsten Mines, Ltd., at Lovelock, has been promoted to general superintendent of the company's mining and milling activities in Nevada. The United Tungsten concern operates under bond and lease the Contact tungsten property south of Lovelock in northern Churchill County, owned by Hall and E. H. Hackett of Pioche. Hall was formerly in charge of the Contact property when he and Hackett were operating as the Contact Mining Company.

Oscar Mills, W. W. Hartman, and Fred W. Koehler recently were appointed as directors of the Mining Association of the Southwest and will serve during the remainder of the year in that capacity. Mills is president of Nevada Scheelite, Inc., 11320 South Alameda Street, Los Angeles, California. W. W. Hartman heads the Maine Machine Works, 1230 East 109th Street, Los Angeles, and operates several mining properties in California and Nevada. Fred Koehler is connected with the Arizona Manganese Corporation as secretary-treasurer and is addressed at 1310 San Ysidro Drive, Beverly Hills, California.

J. van den Broek, president of the Tin Processing Corporation, Texas City, Texas, is reported to have resigned from that position to become Finance Minister of the Netherlands, with headquarters in London, England. He is being succeeded by J. van den Berg, who formerly was vice-president and general manager for the company. J. B. Peyrot will be associated with the company as vice-president and treasurer; M. MacElhinny is secretary; and J. F. W. van den Meulen is assistant secretary and assistant treasurer. Ethelbert Warfield of the law firm of Satterlee and Warfield has been elected chairman of the board of directors.

CALIFORNIA SUPERVISORS

SURVEY STRATEGIC MINERALS

THE County Supervisors' Association of California is conducting a strategic minerals survey to determine the known kinds and quantities of strategic minerals within the state. The survey is being made in order to aid the small miners in the solution of their problems and to assist them in obtaining federal or private aid for the development of properties.

California miners and operators are urged to fill out the survey sheets, which

are available at the offices of the county clerk in each county. Separate sheets are to be made out for each mineral and a sample of ore is to be sent for classification and determination.

P. M. Millsbaugh is directing the strategic minerals survey, and offices of the association are at Room 5, Hotel Sacramento, Sacramento, California. M. C. Merrill of Groveland, Tuolumne County, California, is president.

RULING SAYS PROSPECTORS NOT ELIGIBLE FOR TIRES

SINCE a prospector is not actually a producer of war metals, he is not eligible for new tires, according to the ruling of Newton Morris of the Reno, Nevada, Office of Price Administration. The prospector is recognized as a potential mineral producer, but until such time as he is actually taking out ore, he cannot have new tires.

OBITUARIES

Sam J. Miller, 83, who had prospected in Arizona for almost half a century, died November 17, 1942, at his home in Lowell, Arizona.

John Kohlen, pioneer resident of Tombstone, Arizona, died in Douglas, Arizona, November 3, 1942, at the age of 78. Kohlen went to Tombstone in 1906 and for many years was engaged in mining activities in that district.

Edward E. Bethel, 81, died November 10, 1942, in Patagonia, Arizona, where he lived for the past 40 years. He had been the operator of the Chief mine at one time, and owned the Jaguar mine near Old Soldier Camp and the Tia Juana mine near Patagonia.

Oscar Leland Kettenbach, 58, mining engineer of Tucson, Arizona, died November 21, 1942. Kettenbach went to Tucson in 1924, after being stationed since 1919 in the Philippines as general superintendent of the Benguet Consolidated Mining Company at Baguio.

Albert Milliken, for the past 60 years a resident of Yavapai County, Arizona, died of a heart attack at his home in Prescott, Arizona, November 10, 1942. He was 69 years old. At one time Milliken was subleasing the Prince Albert group of claims near Groom Creek, Arizona.

Patrick Henry McCullough was found dead November 8, 1942, in his cabin at the Rawhide mine near Alamo in Mohave County, Arizona. McCullough was born in Minnesota on March 18, 1878, and had spent the past 25 years prospecting and mining in the Mohave County district.

Joseph C. Effrick, 70, Nevada mine operator since 1902, died November 15, 1942, in Ely. For some years he was superintendent of the Olinghouse Mining Company at Wadsworth, Nevada, and for a while he operated the Olinghouse mill as a custom plant and leased a portion of the mine.

Tony Gabrich, 60, of Tonopah, Nevada, was found dead at his home November 21, 1942, and it is believed that he had succumbed to a heart attack about two days before. For the past five years or so he

000, payable December 15, 1942, to stockholders of record November 27, 1942. This dividend brings total payments for the year to \$2 a share compared with \$2.50 in 1941, when the company disbursed \$1 a share in December. E. G. Dentzer, Superior, is general manager of Magma operations, and Charles F. Ayer, 14 Wall Street, New York, New York, is president of the Magma Copper concern.

Rehabilitation of the 188-foot shaft and the lateral workings at the **Muheim-Grafen** mine in the Helvetia district, Pima County, Arizona, is now possible as the result of the recent grant by the RFC of a \$3,500 loan on the property. The mine is being operated by Joe M. Muheim, Jr., 824 East Helen Street, Tucson, who has a three-year lease. Values are in copper.

Future development work at the **Copper Bell** mine in the Amole district of Pima County, Arizona, includes dewatering and repairing the shaft and preparation for sampling of the main workings. The RFC recently approved an application for a preliminary development loan filed by John Greenwood, 40 East Fourteenth Street, Tucson, Arizona. Greenwood, one of four partners owning the property, has a lease and option from the partnership. It is said that more than 53,000 tons of 3 per cent ore is indicated through present development. Values are in copper with very little gold and silver.

It has been reported that the **Bagdad Copper Corporation**, Hillside, Arizona, is expected to start full production at its new plant by the middle of January 1943, when the power line from Parker Dam is completed. At present the mine is producing 200 tons of ore per day, but it is planned to step up production to 2,500 tons daily. A three-compartment shaft has been sunk 500 feet, the main haulage way on that level has been completed, and the new stope sections have been opened for block caving. The new copper and molybdenum flotation plant was designed and is being constructed by the Southwestern Engineering Company of Los Angeles, California. Other installations nearing completion are the 125-foot steel headframe, hoist, and a four-mile tailings disposal line to a site on Boulder Creek. Construction of the mill and mine surface installations is under the direction of C. Q. Schlereth, Route 8, Box 258-B, Phoenix,

MORE ABOUT CALIFORNIA GOLD MINES

Of the 25 mines which were the largest gold producers in California during 1941, it has been reported that nine were shut down prior to the War Production Board order of October 8, 1942, limiting gold mining operations.

vice-president of the Bagdad company. Jack W. Still, Hillside, is general manager of operations.

Milton Ray of Aguila, Arizona, has leased his **World's Best** strontium mine near Aguila to Fred W. Koehler, 1310 San Ysidro Drive, Beverly Hills, California. The lease is drawn up for a term of 50 years or more. Ray has reported that ore values at the mine run as high as 96 per cent Sr₂SO₄. Koehler is secretary-treasurer of the Arizona Manganese Corporation and also owns mining property located in the Artillery Peak district of Mohave County, Arizona.

The **Phelps Dodge Corporation**, Louis S. Cates, 40 Wall Street, New York, New York, president, has declared a dividend of 40 cents a share payable December 10, 1942, to stockholders of record November 25, 1942.

A crew of fifty men is being employed in operations at the **Van Dyke Copper Company's** mine located near Miami in Gila County, Arizona. The property was reopened recently by means of Defense Plant Corporation funds after a long shutdown. Cleve W. Van Dyke, Miami, is president of the copper company.

In about two months shipping will be resumed at the **Lime Cap** mine at the rate of three cars of ore a week. The ore contains about 30 per cent lead and zinc and some vanadium and is sent to the Ozark Smelting and Mining Company at Coffeyville, Kansas. The property is located 14 miles northwest of Clifton, Arizona, and is being developed on two levels by means of a \$20,000 Class B, RFC loan. The mine is owned by Matt, Ed, and George Danenhauer, and S. G. Murillo of Clifton, Arizona, Charles K. Barnes of Duncan, and L. E. H. Huber of Phoenix, Arizona. Eight men are being employed in the operations.

An application for a Class B Reconstruction Finance Corporation loan for the **Parrot** group of claims recently was filed by the **Victory Mining Company, Inc.**, J. W. Buckley, Box 871, Clifton, Arizona, president. The property, which was formerly known as the **Polaris** and is located seven miles northwest of Clifton, is being leased by the **Victory Mining Company, Inc.**, J. W. Clifton, owner. At present, two men are cleaning up the workings at the mine and it is planned to sink a 150-foot shaft to the 450-foot level and then drift on the vein. The ground has values in copper.

Operations have been resumed at the **Silver Bell-Martinez** property, located 26 miles from Superior, Arizona. The work is under the direction of T. S. O'Brien, general manager, who is making his headquarters at Hughie's Camp, Superior. Joe Julian, formerly of Cave Creek, is superintendent of operations. The property is an old lead producer, having a recorded output of 1,200,000 pounds of lead between 1926 and 1928. Small silver values also are present. Production will be started as soon as the roads to the property are repaired.



Herbert J. Kelm, Raymond, California, is reported to be opening an extensive manganese deposit near Jasper and southwest of Coulterville, Mariposa County, California. The ore contains 48 per cent manganese, and some iron, silica, alumina, and phosphorus. Kelm has been stripping overburden at the site and now has ore exposed for a distance of a mile. A stockpile has been started. Kelm also owns the **Blue Moon** mine near Hornitos, California, which formerly was a gold producer but now is being worked by the **Red Cloud Mines, Inc.**, for its zinc values.

The **Marsman Company of California** recently took a lease on the **Dobbas** chrome mine in the Rattlesnake mining district of California from the owner, D. J. Dobbas of Auburn, California. The Marsman Company, formerly a large gold producer in the Philippines, now is maintaining headquarters at 2504 Russ Building, San Fran-

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cisco, California. J. O. Enberg is general manager of Marsman operations.

The Alhambra-Shumway Mines Company, Inc., El Dorado, California, is reported to have taken a lease on two chrome properties near Garden Valley from the owners, John W. Randolph and Andrew Wolf. The property comprises 600 acres. The company formerly carried on gold mining operations in this district. John H. Webb, 180 Monroe Street, Coalinga, California, heads the Alhambra-Shumway Mines Company. J. L. McNabb of Cool, California, is mill superintendent for the company. Work is carried on under the direction of W. J. Loring, El Dorado, managing engineer.

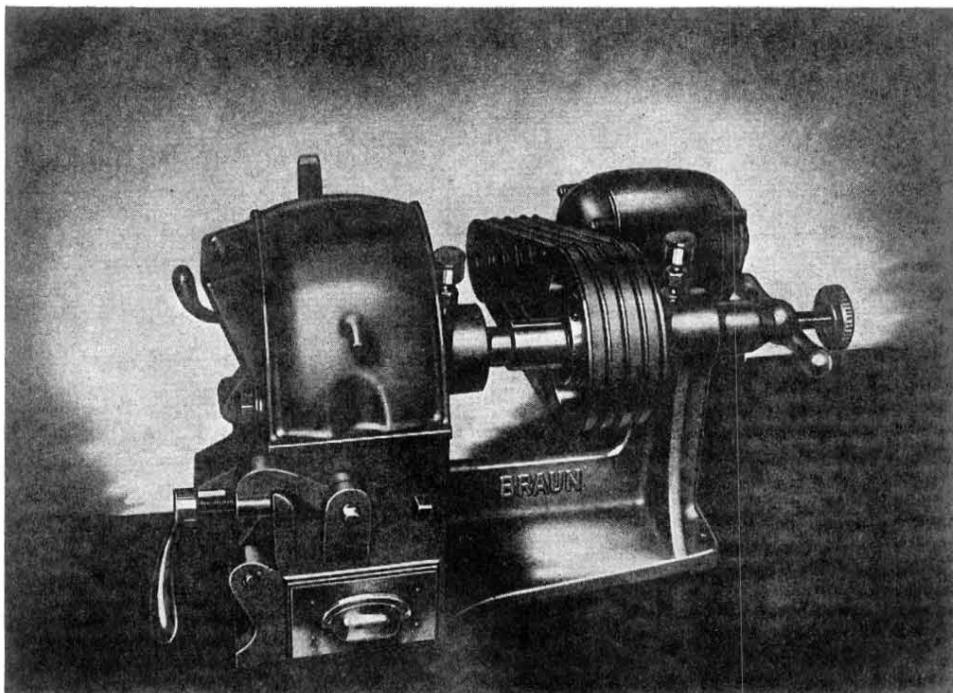
Joe Rivers of Orleans, California, is said to be opening a manganese mine in Elk Valley, California, and it is planned to start regular production after the winter season. He is being aided by San Francisco capital in the new venture. Rivers is associated with Dorothea Reddy Moroney in chrome mining in that district and also has interest in several other chrome, manganese, and quicksilver properties in California.

A skeleton maintenance and pumping crew of about 10 men will be retained at the Tropic mine by the Burton Brothers, Rosamond, California, for the duration of the war. It is expected that operations will be resumed after the war. The mine, one of the oldest gold producers in the district, was closed down recently in compliance with the WPB ruling on gold operations. The mine has been worked by Cecil and Clifford Burton since 1910.

H. H. Pike, 3330 F Street, San Bernardino, California, is completing dewatering of his molybdenum mine located in the northeast part of San Bernardino County, California. He has a bond and lease on four patented claims and development work so far has indicated that the ore body at this property is quite large. Workings at the mine consist of one main shaft 250 feet deep and a second shaft driven about 300 feet from the main shaft and located lower in the canyon. There are approximately 90 feet of drifts from the main shaft and it is reported that from the 150-foot level of this shaft the width of the vein is from six to seven feet and the molybdenum content averages about 2 per cent.

Announcement has been made that the Oro Fino Consolidated Mines has been named the purchasing agent for the Powhatan Mining Company, which has supplied technical asbestos since 1915 to the army and navy, as well as to industrial plants. The Oro Fino concern will locate and inspect asbestos deposits throughout the western states for the Powhatan company. The Oro Fino Consolidated Mines formerly was operating the Oro Fino gold mine in the Ophir district near Auburn, California, milling on the average about 100 tons of ore daily. J. C. KempvanEe, 381 Bush Street, San Francisco, California, is general manager of Oro Fino, and George Beck, Box 432, Auburn, is mine superintendent.

The Newmont Mining Corporation, Charles F. Ayer, 14 Wall Street, New York, New York, president, declared a dividend of 62½ cents a common share payable



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December 15, 1942, to stockholders of record November 27, 1942. This compared with a dividend of 37½ cents a common share paid September 15, 1942.

It has been announced that the Reconstruction Finance Corporation has authorized a loan of \$26,000,000 to the Kaiser Company, Inc., Iron and Steel Division, to be used in enlarging the company's steel plant at Fontana, California. The additions made possible through this loan will make the unit a complete steel plant, including coke ovens, blast furnace, open hearth furnaces, plate mill, 28-inch structural mill and high-speed precision merchant mill. It is expected that the production of pig iron at the steel manufacturing plant will be started in January of 1943, while production of rolled plate will begin in February or March. The plant will have an initial capacity of 675,000 tons of ingots per year with these proposed additions. George W. Vreeland is consulting engineer for Kaiser Company, Inc., Iron and Steel Division, and is addressed at 515 Latham Square Building, Oakland, California. George Havas is chief engineer.

A crew of 16 men is being employed by the Rand Gold Dredging Associates, which is operating a dry land dredge for the tungsten values at property located northwest of Randsburg in Kern County, California. The dredge handles an average of 3,000 yards of material in 24 hours. The steel dredge, floated in a pit 150 feet wide, 200 feet long, and 12 feet deep, operates a bucketline of four-cubic foot capacity, and at the present time is operating in 16 feet of water. This is said to be one of the few operations where water for dredging is supplied from wells, three 3,000-foot wells having been drilled at the location. The company formerly carried on operations near Cottonwood in Shasta County, California, before dismantling the dredge and moving it to the Randsburg property. M. E. Howard, Box D, Randsburg, is superintendent of operations and Newton Cleaveland, 351 California Street, San Francisco, California, is consulting engineer for Rand Gold Dredging Associates. Dredge Placers, Inc., is reported to be the management unit for the dredging concern.

Development work and timbering are progressing favorably at the Spring Hill mine located near Grass Valley in Nevada

ASBESTOS PROJECTS HELD UP

Difficulty in obtaining priority releases from the War Production Board is delaying the exploration of asbestos deposits on the Apache Indian Reservation north of Globe, Arizona, according to J. H. Hedges, district engineer in Arizona for the U. S. Bureau of Mines. The bureau's development program is being undertaken with a long-range view and as "an insurance against the future."

Compressors, trucks, and drills, the three principal items needed, have been frozen and must have WPB priority releases before they may be purchased by the Bureau of Mines. Arizona asbestos mines are said to be the only ones in the nation that produce an iron-free, soft-fiber asbestos, such as is in great demand for electrical installations in all types of military equipment. Hedges said that the nation has a fairly large asbestos stockpile at present, but "if the war continues we shall likely have a shortage of this grade unless these mines can be opened."

County, California. Dorsey E. McLaughlin, 1911 Mills Tower, San Francisco, California, now is sole owner of the Spring Hill property, and C. C. Cushwa, Box 1001, Grass Valley, California, is superintendent in charge of work at the mine.

Reconstruction of the headframe, as well as installation of a hoist and change room facilities, are being completed at the Gold Basin mine in the Randsburg mining district of California, and it is expected that development will be started immediately. Plans for the property include continuing the shaft to the 300-foot level and driving lateral drifts from the new level to facilitate the extraction of the scheelite ore in sight. The mill at the mine will be revamped and provided with additional water storage facilities, jig, and a tailings disposal unit. The mill changes will be finished as soon as possible so that custom milling may be carried on until the ore production at the Gold Basin requires full-time use of the mill. The property is owned by Clarence A. Barker, Barker Brothers, 840 West Seventh Street, Los Angeles,

California, and James B. Nossler is in charge of operations at the Gold Basin.

The Natomas Company, Thomas McCormack, Forum Building, Sacramento, California, president, announced that the company directors have declared the regular quarterly dividend of 25 cents a share on capital stock, payable December 15, 1942, to stockholders of record November 21, 1942. It has been announced by the company that the September quarter net income was \$203,846 or a little less than 22 cents a share on the stock outstanding. This compares with the net income of \$269,625 or 28 cents a share for the third quarter of 1941. Before the recent WPB ruling closing down gold operation the company had seven dredges in the Folsom district of California.

COLORADO

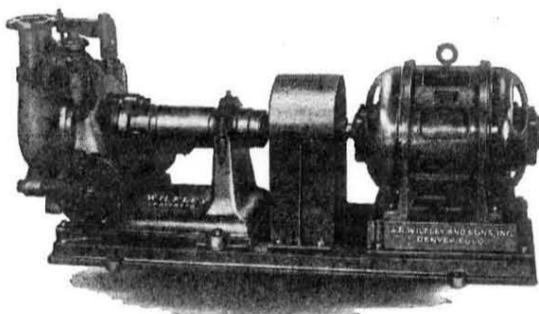
B. J. Ward of Silver Plume, Colorado, and associates are reported to be operating a lease on the Gold Belt property near Silver Plume. Six men are employed cleaning out and timbering the Silver Plume tunnel through which the group will work.

Ore bins are being erected by the Utze Lode Mining Company at the Silver Spruce mill near Idaho Springs, Colorado, so that milling operations will not be interrupted in case heavy snow prevents steady hauling. The company is completing the conversion of the plant to selective flotation and soon will start regular shipments of ore from its Tolland County Tunnel claims in the Cascade district to the mill. E. S. Goodwin is president of the Utze Lode company and Albert Hall Peek, Idaho Springs, is manager.

A 40-ton cyanide mill is being completed by A. H. Price of Idaho Springs, Colorado, at the Whale mine. The property is located in the Fall River district near Idaho Springs.

Julian E. Hall of Aurora, Denver, Colorado, is reported to have leased two groups of claims in Prospect Gulch near Silverton. The properties, known as the Joe and John group and the Henrietta mine, are being reopened under an RFC loan. Harry J. New-

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Contracts for the work in other states are being arranged and the construction will be rushed to completion at the earliest possible date.

SENATOR MURRAY INTRODUCES RELIEF BILL FOR GOLD MINERS

SENATE Bill No. 2909, which has been introduced by Senator James E. Murray of Montana, is designed to provide relief for the operators of lode or placer mines who were forced to cease operations because of the war. Principal features include suspension of lease and/or option agreements by the courts; granting of RFC loans for maintenance and taxes; and suspension of assessment work for the duration of the war.

Under the terms of the bill, persons holding leases or options on mining property closed down due to the war emergency may apply to the courts for relief. If, in the opinion of the court, the ability of the persons to perform the work or make the payments required under such contracts has been substantially impaired, it may order the suspension, in whole or in part, of the requirement that such work be performed or that such payments be made. However, such suspension may not extend for a period beyond one year after termination of the present war.

When a proceeding is instituted under this section of the bill, the court may make a temporary order suspending the require-



ments of the lessee's or optionee's contract until such time as a proper disposition of the case has been made.

Section 3 of the new bill provides for an amendment to the Reconstruction Finance Corporation Act, to be known as section 5i. Under the terms of the amendment, the RFC is authorized to make loans in order to prevent loss or damage to gold mining properties, lode or placer, when the corporation has determined that deterioration of the property will occur without such relief.

Such loans also may be made for the payment of local, county, or state taxes, or for such expenditures as may be necessary to maintain the property with a minimum amount of deterioration. These funds also may be used to pay interest on outstanding obligations or to pay off such obligations as constitute an encumbrance on material or equipment essential to maintaining the property in good condition.

The aggregate of such loans together with other outstanding obligations on the

combined real and personal property shall not exceed 75 per cent of the current fair market value of such ore bodies, placer gravel, or real or personal property, nor shall the interest rate exceed 4 per cent per annum.

Loans may be granted for one year following the termination of the national emergency as proclaimed by the President on May 27, 1941, and no payments of principal or interest on such loans shall be deemed due until two years after the expiration of said unlimited national emergency.

The bill also provides for suspension of assessment work on lode and placer claims from July 1, 1942, until the first July 1 to occur after the President shall have issued a proclamation declaring that hostilities have ceased.

CHROME PROJECT IN OREGON NEARLY READY TO START

CONSTRUCTION of a chrome sand concentration plant between Bandon and Marshfield, Oregon, will be started in the near future. The Humphreys Gold Corporation, A. E. Humphreys, First National Bank Building, Denver, Colorado, president and general manager, has acquired during recent months a number of chrome properties in the Coos Bay area, including the Lagoons and Shepard mines.

It is understood that plans have been drawn for a plant which will turn out 10,000 tons of 20 per cent chrome oxide concentrate a month by gravity concentration.

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NATIONWIDE SALES AND STOCKS

ALASKA GOLD MINERS URGED TO SELL GAS AND OIL STOCKS

MINE operators in Alaska have been requested to offer for sale the fuel oil and gasoline they had taken in to gold operations which have been shut down for the duration. Many gold mine operators already had put in the winter supply of fuel oil and gasoline when the government order closing gold properties was received. Strategic mine operators and war construction projects in the territory are interested in supplies which the gold operators are now unable to utilize.

Officials of the Alaska Miners' Association had urged gold miners to sell or rent their equipment, especially dirt-moving machines, to war projects. Since that time, however, the government has issued a ruling freezing the gold mining machinery and requiring operators to file an itemized list of machinery and equipment with the War Production Board, indicating the items available for sale or rental. Upon receipt of such lists, WPB will furnish mine operators with forms on which the operator can describe the machinery he wishes to sell.

CONSTRUCTION ON BUREAU OF MINES PLANTS TO CONTINUE

ANNOUNCEMENT has been made by the War Production Board that its suspension order of October 20 has been revoked to permit the completion of nine wartime construction projects sponsored by the Bureau of Mines. This decision was made following hearings held by the Facility Review Committee. Representatives of the Department of the Interior and the Bureau of Mines urged that the construction work on all projects essential to the war be permitted to continue. Appearing at the hearings were: Dr. R. R. Sayers, director of the bureau; R. S. Dean, assistant director; H. P. Greenwald, superintendent of the Central Experiment Station; and A. C. Fieldner, chief of the Fuels and Explosives Service.

The plants to be completed are:

1. Amarillo, Texas, helium plant and Cliffside gas field.
2. New helium plant.
3. Four additional helium plants estimated to cost \$11,000,000.
4. The Fischer-Tropsch project for producing gasoline fuel oil and petroleum by-products from coal.
5. Buildings for research on explosives.
6. Chemical control laboratories for the alumina pilot plants in the East.
7. Lima-soda-sinter pilot plant in the East.
8. Aluminum pilot plant for extracting pure alumina from clay deposits in the South.
9. Pyrometallurgical alumina pilot plant in the South.

Action on two projects has been deferred, pending presentation of additional information. These were: (a) Pilot plant for the gaseous reduction of zinc ores, and (b) Sponge iron pilot plant at Laramie, Wyoming. The committee recommended that the sponge iron pilot plant at Johnstown, Pennsylvania, be discontinued immediately.

OREGON KING COMPANY SIGNS AGREEMENT FOR MINE WORK

THE Oregon King Mines, Inc., has made a working agreement with George I. Fenton of Boise, Idaho, and C. E. Silbaugh of Pendleton, Oregon, whereby these partners will operate the property of the Oregon King Mines. They have charge of the mine work, labor, and working materials. Fenton is superintendent at Ashwood, Oregon, where the Oregon King property is located.

E. Rohlfling, 316 Security Building, Portland, president and general manager of the Oregon King Mines, Inc., who has general supervision of the property, has been retained by the new operators as manager of their Portland office. The mine remains under lease to the Oregon King company from its owner, J. G. Edwards of Portland.

During the past year a new 50-ton flotation plant was installed by the Denver Equipment Company. L. E. Marston is mill foreman. The mine has been a leading producer of silver and lead in the state and some copper and gold output is reported. Present work, however, is to increase production of strategic metals. Additional pumps and equipment have been installed. Ore and concentrates are trucked to Gateway, Oregon, for shipment to Tacoma or Utah smelters.

REYNOLDS METALS REPORTS FOR NINE-MONTH PERIOD

REYNOLDS METALS COMPANY and subsidiaries report for the nine months ended September 30, 1942, a net profit of \$733,957 after charges and provision of \$2,339,631 for special five-year amortization and \$2,483,900 for federal income and excess profits taxes. That equals, after preferred dividend requirements, 52 cents a common share and compares with \$2,293,040 or \$2.04 a common share for the nine months ended September 30, 1941.

Because of the war the company's aluminum and lead foil plants and the aluminum powder plant are closed, its main activities now being centered in the production of aluminum. Alumina from the Reynolds plants in Alabama is sent to the Longview, Washington, plant where about 350 men are employed three shifts a day, seven days a week.

STEVENS AND PEND OREILLE LIST MINERAL DEPOSIT DATA

AS A contribution to the war effort Stevens and Pend Oreille counties in northeastern Washington have made an inventory of all known mines and mineral location in the area. To date, they have 22 distinct types of metals and non-metals listed.

All known information, such as the location and types of these ores, ownership of all the properties, production possibilities, including data on road and rail transportation, is available by writing to the secretary of Stevens County P.U.D., Colville, Washington; the secretary of Pend Oreille County P.U.D., Newport, Washington; or the Colville Engineering Company at Colville, Washington, which is in charge of the field work.

the country that use copper are going to be shut down in 1943, unless some new sources of copper production, not visible to this official, are opened up.

Can this be done? It seems imperative that attempts should be made, in this direction.

UNFORTUNATELY, there are at least four different government departments, each of which has made since December 7, 1941, a substantial contribution, (perhaps unwittingly), to prevent the attainment of maximum metal production. Strangely, none of these four government departments is held to accountability, or responsibility, for metal production.

The Treasury department is solely responsible for the disappearance of venture capital from the metal mining field. Notwithstanding persistent efforts on the part of western mining men to impress upon Treasury officials the indispensable nature of venture capital in metal mining, the secretary of the Treasury turned a deaf ear to all such appeals, and insisted on taxing venture capital out of existence. On June 20, 1942, The New Mexico Miners and Prospectors Association adopted a resolution which stated that most of the marginal mines and prospects of the strategic metals were still idle because of prohibitive tax laws and government regulations (ceiling prices), and suggested the adoption of measures to encourage venture capital to resume its necessary and immemorial function. Despite the fact that this suggestion received the support of many western Senators and Congressmen, it was turned down flatly by the Treasury.

The Office of Price Administration placed ceiling prices over the metals at levels low enough to prevent production from high-cost mines. Taking copper for an example again, a ceiling is now set at 12 cents a pound for old production, and 17 cents for new production or production in excess of 1941 production, notwithstanding the fact that, as has been mentioned before, the average price of copper during World War I was about 24 cents.

The government lending agencies (RFC and its subsidiaries) are charged with the responsibility of financing war metal production by means of government loans (which require some form of security). There is no security in the development of prospects into mines, or in the re-opening and development of old mines to search for new ore bodies. Security simply is not inherent in such undertakings. They always have been done by venture capital which require no security. At a later date this defect in the attempt to accomplish the work of venture capital by means of loans was recognized officially and it was announced that "Development loans would thenceforth be made, for sums up to \$20,000 for any one mine, without collateral security, provided that applicants could first win the approval of the War Production Board and later the approval of the lending agency involved." Very few of these so-called development loans have been made to date.

The Department of Labor (and the War Labor Board) have made a contribution to the prevention of maximum metal pro-



duction by creating (probably unintentionally) a labor shortage at the metal mines. These labor agencies either permitted or encouraged labor unions to take charge of the labor situation at the new defense plants and construction projects throughout the country, and establish wages at very high levels. These high-wage levels attracted thousands of miners away from the mines (despite the enforced payment of large sums for admittance to labor unions, a necessary prerequisite to getting these jobs). The mine operators, in the mean time, could not raise wages high enough to compete effectively for their labor supply, because of the price ceilings that had been placed over the metals.

The fact that each of these government departments or bureaus is doing something to prevent maximum metals production, but that none of them is answerable to anybody for metal production, seems to indicate that a serious organizational defect in the war effort is causing this unfortunate state of affairs.

The law of supply and demand has been unceremoniously thrown "out of the window" by the executive departments of our government in Washington, and something has been substituted for it that does not seem to be working any too well.

The metal-production program needs reinvigoration.

Metals prices should be raised immediately to adequate levels; in no case lower than the average prices of World War I, and in most instances, considerably higher. Venture capital should be coaxed out of hiding, by revision of the new tax laws that chased it into hiding. Wage scales should be arranged so that mining, the most important part of war production, can pay the highest wages and attract ample labor. This would happen automatically if the law of supply and demand should be "unfrozen." Also, the selective service should take cognizance of the fact that many underground jobs in metal mines can only be done by husky young men of the same type as those who are needed in the fighting forces.

If these suggestions are carried out, a sudden and huge increase in metal production will result.

WESTERN CAMPS TO HAVE NHA HOUSES FOR MINERS

CONSTRUCTION of more than 2,000 family dwellings has been authorized by the National Housing Agency, John B. Blandford, Jr., administrator, to meet the urgent housing needs of nonferrous metal mining and smelting communities in six western states. The houses, of temporary, row-type construction containing from one to three bedrooms each, are being erected in 14 communities by the Federal Public Housing Authority, construction and management unit of NHA. This action was taken as a result of a joint agreement by War Manpower Commission, War Production Board and NHA.

The WPB granted a blanket priority certificate for materials for the needed housing before the specific projects were programmed. The NHA made \$8,000,000 of its funds available to finance construction. The War Manpower Commission and the NHA each sent a representative to the states concerned to visit together the communities where the housing was needed. The FPMA regional representative, who is in charge of construction and managing each project, accompanied the other officials and generally took along his architect and surveyor.

The result of this cooperation was that usually within 24 hours after the party arrived in a community a project had been decided upon and approved, a site selected and secured, and preliminary work on plans started. The agencies concerned believe that this program will meet the immediate threat to nonferrous metals production. Within 60 days after each project is started the houses should be ready for occupancy. The first units will be completed by January 15.

The communities in which projects have been assigned definitely are:

		Number of Houses
	UTAH	
Garfield	American Smelting and Refining Company and mills of Utah Copper Company	134
Lark	United States Smelting Refining and Mining Company	50
Tooele	Anaconda Copper Mining Company's smelter and Combined Metals Reduction Company	250
	ARIZONA	
Globe-Miami	Inspiration Consolidated Copper Company and Miami Copper Company	230
Morenci	Phelps Dodge Corporation	230
Bisbee	Phelps Dodge Corporation and Shattuck Denn Mining Corporation (Dormitory accommodations)	236
Ajo	Phelps Dodge Corporation	150
	NEW MEXICO	
Hanover	Peru Mining Company American Smelting and Refining Company Black Hawk Mining Company Empire Zinc Company	200
	MONTANA	
Anaconda	Anaconda Copper Mining Company	200
	COLORADO	
Leadville	Climax Molybdenum Company and several zinc mines.	210
Rifle	U. S. Vanadium Company	44
Uravan	U. S. Vanadium Company	68
Naturita	U. S. Vanadium Company	50
	CALIFORNIA	
Livermore	Westvaco Chlorine Products Company	40
	Total	2,142

housing units and 286 dormitory accommodations.

Housing programs are being planned at Luning, Nevada, and Bishop, California, but details have not yet been announced.

JOHNSON CLAIMS ACQUIRED BY SAN FRANCISCO GROUP

SAN FRANCISCO, CALIFORNIA, interests, headed by E. B. Stephens and James D. Culbertson, are reported to have taken over the famous old W. I. Johnson lead and zinc claims located near Supai in Coconino County, Arizona. The new group, known as the Havasu Lead and Zinc Mining Company, recently was formed to operate the property, and has established headquarters at Goodwin, Yavapai County, Arizona. At present machinery and equipment are being moved in and a small crew is employed getting the mine ready for active operations.

The claims are in the Havasu Canyon, formerly known as Cataract Canyon, below the Supai Indian village, and were first prospected about 1885. The Bridal Veil claim has within its boundaries the second largest falls in the Grand Canyon, the Bridal Veil Falls, which has a drop of about 100 feet. It is said that the first prospectors let themselves down into the canyon with ropes, while pack animals had to be lowered over the cliff with ropes and a derrick.

From 1885 to 1901, mining at this property was mainly for the silver-lead ores, and about 100 tons of high-grade were shipped to the smelters during that period. About 1902, an eastern company was formed to prospect the area. The concern was known as the Grand Canyon Gold and Platinum Company and is reported to have made great expenditures in fairly unsuccessful attempts to build trails out from the mine. W. I. Johnson went into the district about 1906 and made five locations, erecting a small concentration plant through which he ran several hundred tons of lead ores. Johnson's plant did not recover all the lead, and he made no attempt whatever to recover the vanadium, so that, on the whole, the operation was unsuccessful.

In 1921, C. A. Heberlein, mining engineer of Prescott, Arizona, took over an option to purchase the Johnson claims and during the next few years expended approximately \$15,000 in actual development work. The property has been operated intermittently on a small scale since that time.

OWNER'S POSITION IN RELATION TO MINE LOAN IS EXPLAINED

IN response to numerous inquiries, the mine loan division of the RFC has issued a ruling on the question of the owner's responsibility in the matter of mine loans made to lessees.

RFC ruled that a lessee cannot obligate property in any way and that, if the lessee obtains an RFC mine loan, the lien upon the ore is in effect only so long as the lease is in effect. Without the express approval of the owner, the property cannot be placed in danger through the actions of the lessee.

An individual, continues the statement, cannot have more than one active loan, but a loan held by a corporation does not hinder the individual officials of that corporation from having other loans on properties in their own names.

NORTHERN ARIZONA COPPER AREA AWAITING DEVELOPMENT

WHAT is believed to be the largest prospective copper area in the United States, with huge possibilities for expansion, may soon be under extensive development, according to an announcement by J. S. Coupal, director of the Arizona Department of Mineral Resources. The department has assisted in the exploration of the area and George A. Ballam, field engineer, recently spent 10 days in the district, making a complete examination of the copper bearing sandstone. The deposit is located on the Navajo Indian Reservation in the vicinity of The Gap, north of Cameron, Arizona.

Initial development in the district has been undertaken by the Mardun Company, O. F. Marvin, chief engineer and general manager, The Gap via Cameron, Arizona, and a 75-ton pilot mill has been installed. An entirely different process was worked out for treatment of the ore which is a windblown sandstone. The deposit is made up of sand grains of practically uniform size and each grain is coated with an amorphous film of chrysocolla and malachite. By gentle attrition, the chrysocolla and malachite can be freed from the sand grain as a fine, palpable powder, which can be removed by suction.

This principle is used as the basis for the processing method worked out in the pilot plant. By passing the ore through a series of disintegrators with suction at each point where dust is created, this malachite is drawn into standard dust collectors, leaving the sand practically free of copper. The pilot plant, through which over 4,000 tons have been run, is reported to be making a 90 per cent recovery. The project is a steam-shovel operation and, as the ore breaks readily and disintegrates easily, costs are relatively low. Average grade of the sandstone beds is estimated to be 0.7 per cent with localized areas going much higher. A 15 per cent concentrate can be produced.

The Mardun Company has made application for an RFC mine loan to be used for construction of a 1,000-ton plant, and plans for the project have been submitted to RFC officials. The new plant would make provision for removal of excess moisture in the material.

"If the funds are provided for this plant, and it proves to be commercially profitable, it may lead to the establishment of many such plants in the area," Coupal declared. "Similar deposits are known to extend east into New Mexico and north into Utah and the area may well become one of the large copper producing districts."

The Shattuck Denn Mining Corporation, Bisbee, Arizona, also is interested in the district and has carried on an extensive

MINING INSTRUCTORS FOR BRAZIL

The Bureau of Economic Warfare is arranging to send a group of men to Brazil to instruct native miners in American mining methods. The miners are to work in mica properties and they must know mining and timbering, since mica workings are in soft earth which requires timbering.

drilling campaign in areas adjoining the Mardun holdings. The company is engaged in assaying and tabulating the results of this drilling program and it is understood that, so far, these have borne out the Mardun findings. Concentration tests also have been made.

REPRESENTATIVES OF ARIZONA GROUPS DRAFT SILICOSIS BILL

REPRESENTATIVES of various interested groups are engaged in drafting an Arizona occupational disease law, aimed principally at silicosis, preparatory to its introduction at sessions of the Sixteenth Arizona Legislature in January. It is hoped that a law can be worked out which will directly and adequately compensate the men who have become disabled by an occupational disease, and yet eliminate the "racket" which so frequently has weakened the effectiveness of the laws in other states and which has militated against the adequate compensation of those who are entitled to relief.

The Utah law is being used as the general pattern for the proposed Arizona measure, modifications being made to adapt it to the Arizona set-up insofar as operating details are concerned.

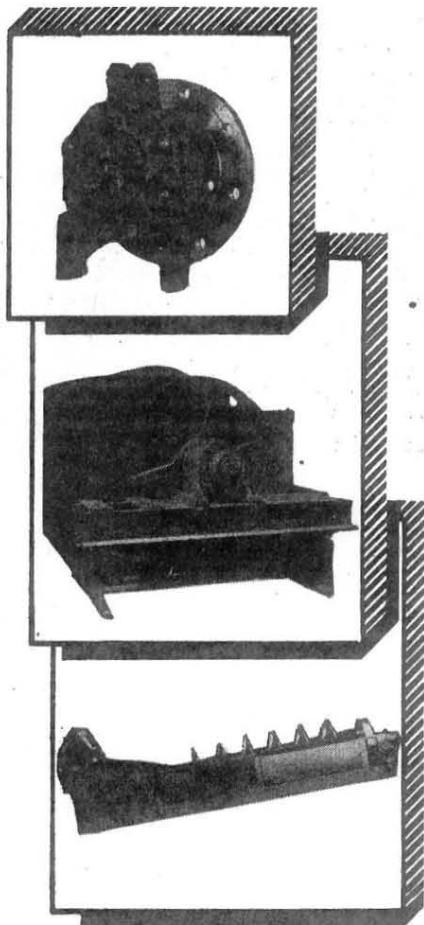
HYDRAULIC MINES CONTINUE OPERATIONS FOR SIX MONTHS

THE Red Star Mining Company, Inc., one of several companies to receive the announcement that the board of appeals of the War Production Board has granted them permission to continue normal hydraulic operations for a period of six months. The Red Star has been operating on the Middle Fork of the American River in Placer County, California, and has been employing about 25 men. In granting the appeal, the WPB placed two limitations on the Red Star's future operations. It is understood that only elderly men, not suited to war work, shall be employed, and no critical materials may be used in the operations.

D. M. Ray, Georgetown, California, is president of the Red Star Mining Company, Inc., and J. A. Shields, Auburn, is consulting engineer. A. F. Erickson, 2510 Chanote Road, Santa Rosa, is secretary and purchasing agent for the company. Red Star headquarters are maintained at 210 Post Street, Room 911, San Francisco, California.

The WPB also has granted permission to continue normal operations to the Pioneer Project mine, Downieville, California. This operation includes the old Grass Flat mine, together with the Riffle, Challenge, and Comet claims, and part of the Pioneer mine, all of which are located near Downieville in Sierra County, California. Andrew J. Modglin, La Porte, California, is superintendent of the project and one of the owners of the property. William Pike, La Porte, also is an owner.

Several other hydraulic mining operators have been granted similar approval of future operation, including: J. W. Bergin, Box 31, Weaverville, California; Charles L. Crowder, Orleans, California; W. E. Woodbury, Weaverville; H. E. Nicols of San Francisco; and the Judge Hydraulic Mine Company, San Francisco.



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Gold mining in the Cripple Creek properties has been started in addition to the limited amount of work previously allowed to provide flux for the Golden Cycle plant. Conversion of a 300-ton unit of the plant over to zinc ores is under way and is expected to be completed within 60 days. This task will not be difficult as the plant treated zinc ores from 1919 to 1939 when the practice was discontinued. The six-month period is designed to cover the transition period during the conversion of the Golden Cycle plant. When questioned about steps to be taken at the expiration of the time, a WPB official is quoted as saying, "We expect to be . . . in a position to do what is reasonable." In the meantime the Golden Cycle will convert its mine machine shops to war work in the expectation of handling subcontracts.

On the Comstock Lode in Nevada it was shown that the average age of all miners is 47 years and, therefore, these men would not be available for transfer to strategic mines. The towns of Virginia City, Gold Hill, and Silver City are completely dependent upon mining for their existence. With these and lesser factors in mind, the WPB granted the same relief to Comstock miners. This will permit the renewed operation of the milling plants of Consolidated Chollar, Gould, and Savage Company and Dayton Consolidated Mining Company, which handled custom ores from this and other districts in the state.

In South Dakota the Homestake Mining Company, largest gold producer in the nation, was the first concern to be allowed to resume work for the next six months and later the same consideration was given the Bald Mountain Mining Company near Trojan.

GRAZING BUREAU REPORTS ON ACCESS ROADS APPROVED

A SURVEY of the mine access road program covering roads originating through the Grazing Bureau shows that as of December 15 final War Production Board approval has been given to 37 projects in the various western mining states, the total cost of which is estimated at \$418,208. All in all, 290 requests for access road assistance have been filed with approval of the Grazing Bureau with the result that the Bureau of Mines has approved 108, rejected 60, and has pending 118. Of the Bureau of Mines approved projects 30 have received approval of the Public Roads Administration and are now awaiting action by the War Production Board.

The mines to which these access roads are to be built are for the development of the following metals:

Metals	Number
Vanadium	20
Copper	1
Manganese	2
Lead	6
Zinc	2
Tungsten	4
Mercury	1
Chrome	1

Of the projects approved, four will be built in Arizona for the development of zinc, lead-zinc, lead, and lead-copper mines; five in Colorado to serve vanadium prop-

CAROLS BROADCAST UNDERGROUND

Carols sung 2,000 feet underground were broadcast by the Columbia Broadcasting Company on Christmas Eve. The performers were the Grass Valley Cornish Carol Singers and the broadcast came from the 2,000-foot level of the Idaho Maryland mine, Grass Valley, California.

erties; one in New Mexico for a zinc deposit; three in Nevada for mercury, lead, and manganese holdings; two in Montana for chrome and lead; three in Idaho for lead, manganese, and tungsten; and 19 in Utah, one copper, three tungsten, and 15 vanadium.

The above report does not cover such access road projects as may have originated with the Indian Service or with the Forest Service.

WESTERN MINING WAR CONGRESS WILL BE HELD IN DENVER

THIS year the annual meeting of the Colorado Mining Association will be known as the Western Mining War Congress. Although to be held in Denver, the meeting will be regional in character rather than a state gathering. It will take place January 29 and 30.

A number of matters which have come up or which have changed since the Salt Lake meeting will be discussed and a policy laid out. Western senators, governors or their representatives, and government officials will be invited to participate in the meeting, but it is planned to have the mining men themselves dominate the gathering, rather than government officials.

APPEALS BOARD MODIFIES GOLD MINE CLOSING ORDER

THE appeals board of WPB has granted limited relief from the provisions of Limitation Order L-208 to several gold mines closed by the order. Permission is extended to these few mines to continue to remove ore already broken for a limited time, and to refill the stopes with waste. The appeals were granted in recognition of the fact that elderly or infirm men may be used for this work, and that no hard-rock miners needed in essential nonferrous mines will be used.

According to an official announcement, the appeals board is prepared to entertain appeals from, closed gold mines when substantial amounts of critical materials are not used, and when:

1. All work is performed by elderly or infirm miners not useful in critical metal mining; and
2. Ore is broken and needs only to be removed from the mine, and the stopes refilled with waste; and
3. In the case of placer mines where equipment is not now in a place of safety, the appeal is for the purpose of permitting operation until equipment can be moved to the nearest place of safety.

All appeals are considered on an individual basis and the board emphasizes the point that it is not disposed to grant any appeals where hard-rock miners would be employed in non-essential gold mines.

property is approximately 33 miles southeast of Kingman, Arizona. It is expected that regular production will be started as soon as necessary machinery and equipment can be moved in.

A crew of three men is being employed in development work at the **Gold King** mine under the direction of Frank Ahlburg, Box 711, Kingman, Arizona, and plans are being made to convert the mill for use as a selective flotation unit. The property is 30 miles southeast of Kingman in the Maynard mining district and is being leased by Ahlburg from the owner, P. M. Woods of Los Angeles, California.



Active mining operations at the **Spanish** mine are expected to continue until snow prevents the trucking of the barite ores from the mine to a San Joaquin, California, reduction plant. The mine is located near Washington, California, and for the past four years has been under lease to the Industrial Minerals and Chemical Company. Mining is by the open-pit method and an average of 100 tons of barite ore daily has been produced by a crew of about 30 men. Reynold J. Penrose, Washington, is superintendent of operations at the Spanish mine.

The **Tulare County Tungsten Mines** is reported to be treating about 50 tons of ore daily and plans are being made to install new machinery so as to increase production. At present the plant is producing approximately two tons of concentrate weekly. Machinery on the ground consists of two sets of crusher rolls and three tables. Kenneth Dunham, Exeter, California, is superintendent of operations at the mine, which is located about 10 miles east of Exeter in Tulare County, California. H. G. Teale is general manager.

Mrs. Ethel Appleby and Harold Strickland, Exeter, California, have announced that they have gone into partnership on the construction of a tungsten milling plant in Yokohl Valley in Tulare County, California. Work already has been started at the property and it is expected that the plant will

MINERS COMBAT LAYOFFS

Two Silver City, New Mexico, mines are reported to have entered into competition to reduce layoffs and are recording on bulletin boards at the mines the number of men absent each day. This number appears under the heading A.W.O.L. In this way a committee of workers has succeeded in cutting down layoffs to 4 per cent. However, even more drastic action is being planned by the enthusiastic committee, for in the future not only the number of absentees but also the name of each will be listed as A.W.O.L. By this method it is hoped that layoffs will be reduced to 2 per cent by the first of the year.

be put into operation sometime in January of 1943. Several deposits of tungsten and copper have been located in this vicinity and will furnish ore for the new mill, which will be operated on a custom basis. The unit will be known as the **Yokohl Tungsten Mill**.

Officials of the **Sixteen-to-One Extension Mines, Inc.**, Alleghany, California, are reported to be looking into the possibility of continuing limited operations at their mine under the modification of the WPB's order for gold mine shutdowns. It is hoped that the concern may be able to carry on work on a limited rate sufficient to pay at least a part of maintenance costs. It is expected that the company will not be allowed to increase its present maintenance crew. Under normal circumstances the company had been employing an average of 100 men, but at the time the mine was closed down in October only 50 were on payroll, the others having gone to war industries or more highly paid work. Clayton Bennett, Alleghany, is general superintendent of Sixteen-to-One operations.

Recent operations at the **Stirnaman** mine have included driving two development tunnels and building an access road from Pioneer Station to the mine, which is located near Pioneer, via Jackson, in Amador County, California. Production has been maintained at the rate of 4½ tons of manganese ore daily, but plans are being made to step up the mine output to 200 tons per month. Ore is going to the government stockpile at Auburn, California. A

crew of ten men is being employed in the operations. The property was recently reopened by Dr. J. T. Stacy of Jackson, California.

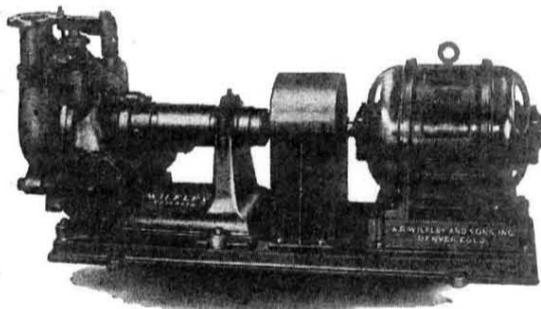
Operations are being started at the **Cosumnes Copper Mine**, 18 miles east of Plymouth, Amador County, California, on the Middle Fork of the Cosumnes River, by F. Hall, J. Williams, and George M. Thomas, Jackson, California. So far the operators have run a 65-foot crosscut, which has indicated that the ore body is of commercial value, containing copper, molybdenum, and tungsten. F. H. Hood of Oakland, California, is the former owner of the mine.

The United States Bureau of Mines is reported to be conducting an extensive drilling program at the **West Belt Copper Mines** of Copperopolis, Calaveras County, California. It is understood that the Sullivan Machinery Company, Michigan City, Indiana, has been awarded the contract for 9,000 feet of drilling at the property.

The **Marsh Flat Chrome Associates**, a partnership, with offices at 582 Market Street, San Francisco, California, recently was organized to develop a chrome property in Tuolumne County, California. The mine consists of five claims. C. A. Lindsay and F. A. Gowing are general partners. At present development work is being carried on at the property, with The Merrill Company, metallurgical engineers of San Francisco, doing the laboratory and testing work. A flowsheet is in the process of development, and plans call for the completion of a concentration plant next spring. It is understood that initial operations at the mine will be by surface mining methods, with Gowing as superintendent in charge of the work. Lindsay is acting as general manager of Marsh Flat operations.

Mrs. Alice P. Stanton of San Francisco, California, is reported to have recently acquired an option on the **Chrome Mountain** claims from the owners, Charles J. Fry, Eric Wold, and Eric Anderson of Medford, Oregon, and Mrs. Emma Robinson of Salem, Oregon. The deposits are located in Northern California, and at present three miles of trail for winter access to the property are being built under the direction of A. R. McDaniel, Mrs. Stanton's representative. It is expected that as soon as the trail is completed machinery will be moved in for immediate operation. Mrs.

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Stanton is reported to have contracted with a New York firm to do the development work at the Chrome Mountain claims.

An extensive development program is being planned for the **Black Oak** quicksilver property on Squaw Creek in Sonoma County, California. Ralph Thompson, Cloverdale, California, owner, is reported to have sold an interest in the property to San Francisco parties and will continue at the mine as general manager of operations. A bulldozer will be used to strip a large area of mineralized rock at the mine.

G. M. Trent, Auburn, California, is reported to be installing a 50-ton mill at the **Highway 40** mine about one-half mile west of Newcastle, California. The new plant will treat custom ore from near-by mines as well as ore from the **Valley View** and **Buzzard** mines, which are being leased by Trent. The Valley View is located approximately 18 miles northwest of Auburn in Placer County, California, and has values in copper, zinc, gold, and silver. The Buzzard mine is a zinc-gold property three miles down the American River from Rattlesnake, which is south of Auburn.

A 300-ton zinc selective flotation plant is being installed by the **Mountain Copper Company** at its property in Shasta County, California, and necessary equipment is being moved in from the company's Big Canyon gold property located in Eldorado County, California. It is understood that the firm has a contract with the Metals Reserve Company to ship zinc concentrates to the Anaconda smelter at Great Falls, Montana, but the copper concentrates will be marketed at the Tacoma smelter of the American Smelting and Refining Company. Ore shipments are expected to be started in April of 1943. William F. Kett, 216 Pine Street, San Francisco, California, is general manager for Mountain Copper.

H. C. Scott, Oakland, California, has started operations at the **Harrison** quicksilver mine in Morgan Valley near Reiff, California, and has completed installation of a 60-ton rotary furnace at the mine. Mining is carried on by the shovel method.

The **Mangachrome Company**, Auburn, California, is installing a screen washing plant with a concentrator to handle fines at its Duggan operations, located in the Wolf mining district, Nevada County, California. It is reported that approximately 40,000 yards of overburden have been moved at this property. Examinations of the ore so far have shown an average of 51 per cent manganese. Mangachrome holds a 1,000-ton manganese contract from the Metals Reserve Company. Charles A. Neville, Auburn, is general manager of operations.

The **Arlington Manganese Company** now is actively engaged in shipping manganese ore from its claims located about 14 miles west of Midland in the McCoy Mountains, Riverside County, California. A crew of 15 men is being employed in blocking out the ore and loading it for shipment. It is understood that the company has constructed its own bins on the Santa Fe Railroad, about three miles south of Midland. A. B. Minor of Los Angeles is re-

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Portland, Oregon

ported to be one of the principal owners in this project. The Arlington claims formerly were worked during the first world war, with several hundred men being employed at one time.

William A. Dewitt, Lyon Building, 106 East Second Street, Reno, Nevada, and associates are preparing to start development at the Walker placer claims southeast of Randsburg, Kern County, California. The new operators will be known as the Desert Tungsten, Inc., and will maintain headquarters at Randsburg. Jigs and other recovery machinery are being moved in and it is expected that production at the approximate rate of 50 yards per day will be started as soon as all equipment is on the ground. Arrangements have been made for water from the Little Butte and Big Butte mines in the same district, and at present a 50,000-gallon reservoir is under construction at the Walker property. L. C. Brittain, formerly of Douglas, Arizona, and Oscar Sundin, Box 322, Randsburg, are supervising installation and construction.

According to reports, about 100 miners, deprived of work because of the closing of gold operations in the Grass Valley, California, district, have been employed by the Lava Cap Gold Mining Corporation. This brings the total number of men employed by this concern to 325. A production rate of approximately 350 tons of gold-silver ore daily is being maintained at its Nevada County property. The Lava Cap company was not included in the gold mining Limitations Order L-208 recently passed by the WPB and production may be continued by the company as long as it is considered essential in the operation of the American Smelting and Refining Company's lead smelter at Selby. Lava Cap has been producing not only gold and silver ore but also has been shipping iron sulphides to the Selby smelter for use as a flux in the production of lead. Otto E. Schiffner, Nevada City, California, is general manager of Lava Cap operations.

The Newmont Mining Corporation is reported to have acquired recently several extensive copper holdings in Shasta County, California. The necessary location and discovery work is being done by a crew under the direction of Mike Maguire, Grass Valley. Newmont also has a copper property eight miles north of Happy Camp in Siskiyou County, California, and at present is making plans to handle 600 tons of ore daily by January 1, 1943. The ore from this operation will be shipped to a Tacoma, Washington, smelter.

Announcement has been made by Charles H. Reed, county bureau of mines engineer, San Diego, California, of the production of scheelite at the Sunshine mining property in the Laguna Mountains. The plant is being operated by N. Sutherland and V. L. Miller and six men are employed on the project. Sutherland also has four other scheelite claims 2½ miles west of the Sunshine and he is planning to install a 50-ton milling plant on land which he is leasing near Cuyamaca Lake.

E. E. Sisson, 456 Subway Terminal Building, Los Angeles, California, has been granted a \$5,000 RFC development loan

for the old Jezebel copper property in the southern part of the Sierras. He has already started work there. Sisson formerly was engaged in gold mining in the Downieville, California, area until the mine was closed in compliance with the recent WPB ruling concerning gold mining.

An RFC development loan has been granted for the old George A. Muller chromite property near Forest Hill, California. The mine is being operated by Fitzgerald and Russell. It has been reported that this property produced 70 tons of chromite ore in 1941.

Dorothea Reddy Moroney, Yreka Inn, Yreka, California, is reported to be shipping 20 tons of chrome ore daily to the Yreka stockpile from the Joe Rivers property. Two bad earth slides and inclement weather have hampered production. Harvey White recently was appointed superintendent of the mine, which is located near Orleans, Humboldt County, California.

It is expected that the old Nelson Hydraulic mine, on the Klamath River seven miles from Orleans, California, and 3¼ miles from Somesbar, California, will be in operation by the first of January 1943. A small crew of men is employed under the direction of Mrs. Dayton Murray, Eureka, owner of the property.

A third shipment of ore was made recently from the Atolia Mining Company's Flat Iron mine by a group of lessees composed of Max Hess, James Christensen, Emil Schultz, and James Nosser, all of Randsburg, California. The ore was taken from the 200-foot level of the mine on the old Spanish vein and is reported to have been worth approximately \$7,000. Nine sets of lessees, totaling 18 men, have arranged for leases on the property which is located at Atolia, California. In addition, the company is employing a crew of 90 men, under the direction of Hugh W. Coke, superintendent, Atolia.



Because the Hayden Mining Company was unable to get its access road in shape before winter, operations have been suspended, but will be resumed early in the 1943 season. The company, headed by Ralph E. Ruder, Box 1071, Colorado Springs, Colorado, holds the Morning Star lead-zinc mine near Whitepine in Gunnison County, Colorado.

The Marmac Mining Company will continue development work throughout the winter months this year in order to have considerable ground opened for production next summer. The company, headed by Edward F. McNees, holds the Little Nation mine and 100-ton mill at Howardsville in San Juan County, Colorado. Ore values are in lead, silver, copper, and zinc. McNees, who has until recently been in personal charge with headquarters at Silverton, has returned to his home at 6731 Paseo, Kansas City, Missouri, for the winter.