

and later was connected with the old Arizona Copper Company. Prior to going to Deming, Bacon had operated the assay office of George W. Cameron of El Paso, Texas.

Roy R. Moore, consulting mining engineer and geologist, died at his home in Oakland, California, December 14, 1942, after a brief illness. He was 69 years old. Born in Tehama County, California, Moore received his education at Oakland and at Stanford University. He spent his life in oil and mining development throughout the western states, and at one time was an agent for the old Selby Smelting and Lead Company before it was absorbed by the American Smelting and Refining Company. In 1939 he was connected with the Alhambra-Shumway Mines Company, El Dorado, California, as a consultant on development.

ALASKA MINERS ELECT OFFICERS AND PLAN FOR COMING YEAR

THE new board of directors of the Alaska Miners' Association convened recently and reelected Charles J. Johnston of the Goodnews Bay Mining Company to the presidency. Al Anderson was renamed secretary. Other officials include the vice-presidents, A. E. Lathrop, L. A. Levensaler, James Robbins, William Castleton, and R. C. Gebhardt. E. N. Patty, Luther Hess, and Roy B. Earling were appointed to the executive committee.

A vigorous meeting was reported as an unusually large number of the operators were in Seattle, Washington, where the association headquarters are located, having closed their properties for the winter or for the duration. The problems of the Alaskan mine operator were discussed and plans formulated to aid the miners in supporting the war effort to the best of their ability and also to protect their interests against the time that full mining activity can be resumed.

WPB EXTENDS THE AUTHORITY OF ITS REGIONAL OFFICES

INCREASING decentralization of the War Production Board, with ensuing benefits to western industry, is indicated in the granting of authority for approval of individual emergency preference ratings to the regional field offices of WPB.

As announced by Harry H. Fair of San Francisco, regional director of WPB, regional directors of the board are now authorized to approve, countersign, and issue individual preference ratings for emergency repairs, up to and including AA-1. This is in accordance with specific instructions to be issued from time to time by the WPB deputy director general for distribution. Under this ruling, regional deputy directors of the WPB also may be authorized to perform these functions.

In addition, the 110 national district offices of WPB may for the first time grant ratings for emergency repair up to and including AA-2X. The authority delegated in this instance is limited to cases where the materials for which the applicant seeks priority assistance do not exceed \$500 in value.

SOUTH DAKOTA STUDIES NEW METHODS OF TIN RECOVERY

THE South Dakota School of Mines is engaged in research work leading to increased tin production in Bolivia. Neil A. O'Donnell, general manager of Minera Unificada del Cerro, one of the largest Bolivian tin producers, is said to be financing the work on flotation treatment. The new flotation method, it is hoped, will recover tin which now is lost with the waste.

Any increase in Bolivian tin would aid the war effort. A more effective milling process than the one in use might make available thousands of tons of waste rock, now hand-sorted and cast aside as too low in values for profitable milling. It is estimated that about 40 per cent of the tin values are lost in the slimes. The process now being studied in application to tin may make possible an increase in recovery from the present 60 per cent to 90 per cent. If successful, the new method not only would be valuable in increasing recovery from ores being mined, but could be used to recover values from the mine dumps.

NICKEL OUTPUT IS INCREASED 50,000,000 POUNDS ANNUALLY

INCREASED capacity for the production of primary nickel, the salvage of nickel-bearing scrap, and various conservation efforts have provided sources of nickel which should be adequate for vital war needs, states Robert C. Stanley, president of the International Nickel Company of Canada, Limited, in a review of the nickel industry for the past year. In connection with his company's \$35,000,000 expansion program, announced a year ago, Stanley said that it had progressed to a point where it makes possible an increase in productive capacity of 50,000,000 pounds annually over the 1940 rate of production. That was the increase in capacity rate promised when the expansion program was announced.

Despite this increased supply, Stanley warned that efforts to recover alloy scrap must be intensified if the war needs of the United Nations are to be met promptly. He

also commended measures taken by industry to conserve alloys.

"The importance of scrap metal salvage cannot be overemphasized. The heaviest demand for nickel today is for use in alloy steels. Nickel in alloy steel scrap, if delivered to the mills in suitable form, can supplement primary nickel. Thus scrap can relieve much of the burden from our mills and refineries. Members of the company's technical staff and field office personnel have been mobilized to aid nickel-consuming industries reduce nickel requirements where practicable, to advise on the most economical use of nickel, and to help the conservation of nickel by changing specifications.

"A most important conservation measure in the United States was the development of the National Emergency steels. These steels represent a joint development by the U. S. War Production Board and the American Iron and Steel Institute. National Emergency steels, as their name indicates, have been brought into being to serve a definite purpose—the spreading of available alloys as widely as possible. The receipt of alloy scrap to date has been sufficient to supply almost the entire need of the National Emergency steels. Available information indicates that almost no primary nickel is required now for these steels."

OREGON GIVES DECENT BURIAL TO COMMERCIAL TIN CLAIMS

AS the Oregon Department of Geology and Mineral Industries states, there is nothing it would rather do than to demonstrate the presence of an important deposit of tin or any other strategic mineral in the state, but in the case of the Juniper Ridge deposit near Burns, Oregon, this seems to be clearly impossible. The present discussion, which apparently is between a group personally interested in the property on one side and engineers and bureaus of mines on the other, started in 1939, although about 15 years ago samples were taken and sent to Blackwells in London for analysis.

The department recently published a minutely detailed account of every test made from a total of 15 samples taken at points where "highest grade ore" was reported to occur. Qualitative and quantitative chemical methods and spectrographic methods of analysis were used on Juniper Ridge rock. Standard solutions of tin and mixtures of tin or tin compounds were intentionally added to portions of Juniper Ridge rock samples, which were then used as controls for studying the analytical reagents or tests.

Chemical methods, which detected the presence of tin in the control samples to which tin had been added intentionally, failed to show the presence of tin in Juniper Ridge rock samples in amounts greater than 0.005 per cent. Spectrographic methods showed the presence of tin in Juniper Ridge rock samples in amounts varying from 0.001 per cent to 0.005 per cent.

The full report of the investigation has been published by the department as Bulletin No. 23 and may be obtained for 40 cents from the departmental office at 702 Woodlark Building, Portland.



"Mendelson can't seem to forget his chain grocery store days."

Concentrates from Western States

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



ARIZONA

E. M. Marshall, Box 3, Vicksburg, Arizona, is reported to be employing three men in breaking and sorting ore at the Moore group of claims, which he is leasing from the owner, Erven Brewer of Santa Cruz, California. The property consists of 46 patented claims in the Plomosa district of Yuma County, Arizona, and has values in copper and silver. Ore is trucked by contract to Vicksburg, a station on the Santa Fe Railroad, where it is loaded on cars and shipped to the Clarkdale smelter.

Lawrence DeZee, Crown King, Arizona, is reported to have been granted a \$7,500 RFC loan for further development of his Del Pasco mine four miles north of Crown King. The loan will be used to sink a 100-foot shaft in order to block out lead, zinc, and silver ores. Production will be made direct to the smelter at El Paso, Texas.

The Reconstruction Finance Corporation recently approved a \$5,000 preliminary development loan for the Butternut mine located in the Big Bug mining district of Arizona and a few miles from Mayer. The property is owned by Evert Breckenridge and Ethel Edwards, both of Mayer, and carries values in copper, gold, and silver.

The Falcon Mines Company is reported to be building an ore chute and finishing construction of a small mill at the Falcon mine 10 miles southwest of Miami, Arizona. Further mine development is being planned, consisting mainly of driving a deeper tunnel. A mile of mine access road will be built. Six men are employed and production is being maintained at the rate of five to six tons daily. The property is owned by S. Midler, Cecil Clark, Old Dominion Hotel, Globe, and associates. Al Greer is mine superintendent and Abe Ferra is mill superintendent for Falcon Mines.

Small shipments of lead-silver ore are being made from the 81 mine in the Castle Dome Mountains of Yuma County, Arizona. A crew of three to four men is regularly employed and 300 feet of development work has been done. The property is owned by Donna F. Williams, 2579 University Avenue, San Diego, California.

Charles M. Turner, Cleator, Arizona, is reported to be installing a small pilot mill at his Christmas mine located in the Peck mining district of Yavapai County near Goodwin, Arizona. The property comprises three claims having values in gold, silver, lead, and copper.

H. C. Herrick, Box 1817, Nogales, Arizona, and Louis Verdugo of San Luis, Arizona, are employing five men at the Blue

Nose Extension mine, about four miles south of the A. S. and R. Trench mine near Patagonia, Arizona. The tunnel has been driven about 180 feet to a vein of high-grade lead-zinc-silver ore. About 40 tons of ore are on the dump and the operators are planning to ship this ore to the Duquesne mill of the Callahan Zinc-Lead Company. At present the crew is drifting on the vein and taking out approximately six tons of ore per week, and it is expected that production will be stepped up shortly to 50 tons per month. The property is being leased from Rupert Byerly of Nogales.

E. B. and E. H. Escapule, Box 695, Tombstone, Arizona, are making preparations to ship a car of lead concentrates to El Paso, Texas, from the Escapule mill near Tombstone. The ore being milled is from the Escapule dump and mine. The concentrates are reported to run about 40 per cent lead and some silver. Four men are employed.

J. Dewey Chadwick, Tombstone, Arizona, is reported to be making application for a \$10,000 Reconstruction Finance loan for his Conlig tungsten mine in the Whetstone district 10½ miles south of Benson, Arizona. The property comprises 14 claims held by location and it is understood that there are 2,500 feet of workings including shallow shafts, open cuts, and tunnels, numbering about 200 in all. Several tons of ore have been run through the 10-ton mill and the concentrates have been shipped to Fernstrom and Company, Tucson, Arizona. Preliminary examinations have shown a large potential tonnage of ore, averaging about 0.75 per cent WO₃, and it is believed that mill capacity could be stepped up to 25 tons daily.

Unwatering and retrimbering have been completed to the 240-foot level of the Pittsburgh-Tonto mine located one mile from Felton in Gila County, Arizona. About 150 feet of an old drift have been reopened and an additional 100 feet of drifting have been done on the vein on the 240-foot level. The lessees, J. C. Anglin, Box 172, Globe, Arizona; Clay R. Young, Felton; and J. N. Geaslin, San Diego, California; have applied for a Class B RFC loan in order to be able to continue development work. Bert Beluzzi and Tony Menges of Felton are the owners. Values are in copper.

Pierre Perry, Box 182, Mayer, Arizona, has been elected president of the Mountain Copper Corporation, now operating prop-

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.

erty which is part of the late R. Herzog estate located five miles from Mayer. Since September of this year Perry has shipped several carloads of copper ore from the 110-foot level, but it is understood that he cannot operate below that level until the 470-foot shaft can be dewatered. About 1,740 feet of diamond drilling have been done on the 465-foot level and 193 feet of ledges from 3 to 25 feet wide have been indicated. Perry is applying for a Class C government loan of \$5,000 to unwater the two shafts at the mine.

An ore ledge has been discovered recently at the Belmont-McNeil mine and 55 tons of lead and copper ore have been shipped to El Paso, Texas. The property is located at Palo Verde in western Maricopa County, Arizona, and is operated under lease by Pierre Perry, Box 182, Mayer, Arizona. Perry is planning to speed up production at the Belmont-McNeil during January 1943.

Preparations are being made to deepen the Denn shaft of the Shattuck Denn Mining Corporation at Bisbee, Arizona, to the 2,900-foot level. It is planned to open two new levels for exploration below the present depth of 2,680 feet. Several months will be required to complete the new sinking program and a crew of 25 men will be employed. The Denn shaft has four compartments and is serviced by counter-balanced hoisting cages as well as a small hoist. J. A. Wilcox, Bisbee, is general manager.

Shipping of concentrates will be started from the Plumed Knight property in the San Xavier district of Pima County, Arizona, 18 miles southwest of Tucson, as soon as installation of the new mill is completed. The Plumed Knight is a large low-grade copper deposit and is being leased, along with the Mineral Hill mine in the same district, from the Barnsdall Corporation, the parent company for the Mineral Hill Consolidated Copper Company. There are said to be 1,000,000 tons of ore available, running between 3 and 3½ per cent copper and suitable for large-scale operation. During the first world war the property produced approximately 8,000,000 pounds of copper, but was shut down immediately after the war. Harold Whealton and Robert Nicolai, Box 1948, Tucson, Arizona, are the lessees.



CALIFORNIA

Shipments of high-grade manganese ore have been started by the War Manganese Company which operates property in the Paymaster mining district of Imperial County, California, about 30 miles from Glamis. The average grade of the manganese is between 40 and 44 per cent and, because of this high manganese content, the ore requires no milling before shipping. The company holds a contract with the Metals Reserve Company for 5,000 tons of manganese ore. Roy M. Pike of San Francisco and associates are developing the property and at present about 35 men are being employed in operations.

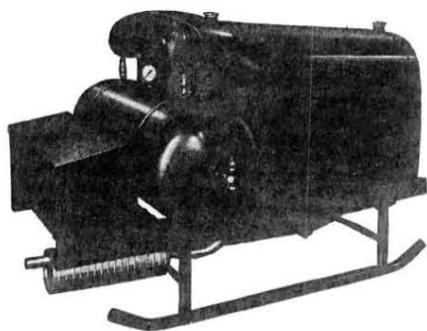
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Regular development work is being carried on at the Modoc mine by Edson Abel, 2890 California Street, San Francisco, California, and shipment of lead-silver ore has been started. The property is located east of Lone Pine in Inyo County, California.

Production is being started by the Oak Hill Mining Company of San Francisco, California, at the Oak Hill mine where the company has been carrying on unwatering operations. The mine is located about four miles north of La Grange in Tuolumne County, California. The company will produce a copper-zinc sulphide, which will be shipped to Tooele, Utah, for reduction. Workings at the Oak Hill include the main shaft which is 600 feet deep. Diesel hoist, compressor, and other necessary equipment already have been installed. Eight men have been employed in unwatering, but it is expected that the company will employ a regular crew of 15 to 20 men.

Underground development is being continued by the Imperial Metals, Inc., at its Darwin mine, two miles north of Darwin, California, while the 250-ton mill is being revamped. The company had been employing a crew of 116 men before the mill was closed down. Sam B. Mosher, Box 5840, Metropolitan Station, Los Angeles, California, is president of Imperial Metals.

The El Dorado-Rover Mining Company, 527 East Sixteenth Street, Los Angeles, California, has reached a working agreement with the California Sulphur Company, owner of the Sagamore mines, 16 miles north of Ivanpah, San Bernardino County, California. The El Dorado group will have complete management of the development of the Sagamore mines, the work being financed and directed by the Reconstruction Finance Corporation. The development ores and considerable quantities previously developed in these mines will be milled at the El Dorado company's plant at Nelson, Nevada. This plant has been operating on gold and silver ores for the past several years and only recently has been closed down in compliance with the WPB order for gold mines. Values at the Sagamore are in lead, zinc, tungsten, copper, and silver, and the El Dorado company is installing flotation cells, concentration tables, and other necessary equipment to handle these ores. J. D. McPherson, general manager for El Dorado-Rover, will be in charge of both the mining and milling operations.

Formal approval has been given by the Metals Reserve Company for installation of necessary machinery at the Cajalco tin mine in the Temescal district of Riverside County, California, and it is expected that the Dodge Construction Company will make a test run at the property within the next 60 days. A road to the mine site already has been improved by the county to provide a means of transporting the heavy machinery. It is expected that a crew of about 30 men will be employed by the company when regular mining operations are under way. Stephan Riess, Simi, California, is in charge of operations at the Cajalco property. Fred B. Wilder, 1216 North Edgemont, Los Angeles, is chemist for the project.

The St. Elmo Chrome Mining Company is reported to have leased part of the Scazighini ranch 29 miles northwest of Coalinga, California, in San Benito County, and to be making preparations for active chrome mining operations. A camp site has been built and three miles of road have been constructed. It is expected that high-grade ore will be hauled to Coalinga by truck through Los Gatos Canyon and shipped from there via the Southern Pacific Railroad to the Metals Reserve stockpile at Tracy, California. St. Elmo Chrome is a newly organized Porterville, California, concern, and has as its directors, E. Hall, M. C. Newton, John Cummings, Howard C. Ellis, and A. L. Hammill, all of San Francisco. Legal representatives for the company are Ellis and Steindorf, 111 Sutter Street, San Francisco.

The Carson Hill Gold Mining Corporation, Melones, California, has declared a dividend of 3½ cents a share, payable January 6, 1943, to stockholders of record December 29, 1942. The last dividend was paid on December 31, 1940, and consisted of one cent a share. The company's gold mine near Melones was closed down recently following the destruction by fire of the Carson Hill mill. Lawrence Monte-Verda is vice-president of the company.

The Powhatan Mining Company of Baltimore, Maryland, is reported to be developing asbestos deposits in the Hazel Creek district near Redding, California, with work progressing under the direction of D. T. Tracy, Pasadena, California. Announcement recently was made that the Oro Fino Consolidated Mines, J. C. KempvanEe, 381 Bush Street, San Francisco, California, general manager, was named the purchasing agent for the Powhatan concern. The Oro Fino company, which formerly operated the Oro Fino gold mine near Auburn, California, has been locating and inspecting asbestos deposits throughout the western states for Powhatan. The Powhatan Mining Company has supplied technical asbestos to the army and navy as well as industrial plants since 1915.

Actual development work has been started on a large deposit of manganese located on the Ryan property on the Nevada County, California, side of the Bear River and about four miles from Colfax. Bulldozers, tractors, compressors, and other necessary equipment and machinery have been moved in and work is being carried on under the direction of William Tuttle, Emerson Apartments, Colfax. Harley A. Sill, 1011 South Figueroa Street, Los Angeles, California, is engineer for the project.

Announcement has been made by the War Production Board that a six months' extension for further development work has been granted the Ancho-Erie Mining Company for its mining operations near Graniteville in Nevada County, California. The order specified that ore taken out should be stockpiled. Roads to Graniteville and Washington from the mine have been cleared of snow by using a Caterpillar tractor. The company formerly employed a crew of 18 men but at present only five men are working at the property under the direction of Fred Anderson, Grass Val-

ley, California, superintendent. C. A. Helbach, 370 Alta Street, Grass Valley, is president of the Ancho-Erie Mining Company.

Regular shipments are going to the General Dry Battery Company, Patterson, California, from the Jacob Schmidt mine in the Franciscan Mountains, 27 miles south of Tracy in Stanislaus County, California. The Schmidt mine is being operated by O. E. Chaney of Reno, Nevada, and associates, who recently contracted as an independent contractor to operate the mine. It is reported that the ore is being broken from a vein that outcrops on the surface and which has been opened for a distance of 80 feet and ranges in width from 14 inches to four feet. Test shipments of the ore have shown an average of 61 per cent pyrolusite, which is in demand for the manufacture of dry batteries. Chaney is making his California headquarters at Tracy Inn, Tracy.

Satisfactory progress is reported by the Holcomb Valley Placer Company at its operations at the Walker mine located in the Rand mining district near Randsburg, California. Work recently was resumed at the property after the company had revamped its equipment in order to increase production of the gold and tungsten values. George K. Knudsen, 973 North Main Street, Los Angeles, California, is president and manager of the Holcomb Valley concern.

William Taylor of Bridgeport, California, recently made a shipment of 10 tons of high-grade manganese ore from his mine

**ONLY MEN WITH GUTS
NEED APPLY**

No panty-waists or mamma's darlings wanted at Basic Magnesium. The firm puts out a bulletin to prospective employes (and it needs labor, skilled and unskilled, as badly as any other big plant does), but it does not try to entice workers to Nevada by stories of high wages, short hours, and charming surroundings. It merely lists the "good" and the "bad" aspects of a job with Basic Magnesium. Wages are high, most of the jobs are tough, living conditions are being steadily improved and can stand a lot more improvement, and chances for promotion are good for the good workman. Dust storms, excessive heat, and chemical fumes are common occurrences, and the wind blows all the time. The company merely says, "Take it or leave it." W-e-ll, I never heard a C. O. ask his men if they would enjoy going to the steaming jungles of the South Pacific or the fog and cold-ridden islands of the Aleutians.

near Conway Summit in Mono County, California. The ore went to the Auburn, California, government stockpile. Taylor is leasing the property from the owner, George Moyle, Bridgeport, who is supervising work at the mine. Moyle also is reopening another manganese discovery in the same district and it is understood that Charles Adair, Leevining, and others are associated with him in this project.

Lee Payton is reported to have sold a third interest in the Gold Crown quartz mine in Amador County, California, to Fred Schroenrath of Jackson, California.

The Capital Company, Powell Street, San Francisco, California, recently acquired the Bay State mine from the owner, Ruth Becker. The property is in the Plymouth mining district of Amador County, California, and has not been worked for some time. E. D. Woodruff is president of the Capital Company.

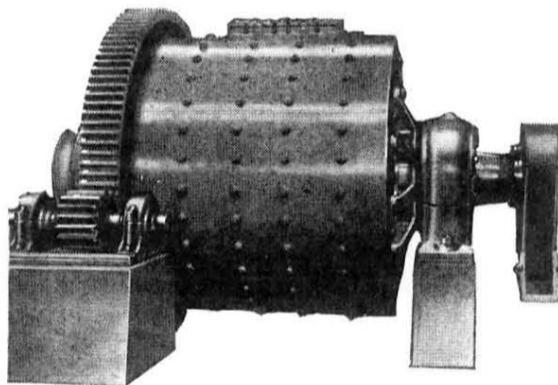
The Mt. Gaines Mining Company, A. V. Udell, superintendent, Hornitos, California, is reported to be closing down its mining operations at Hornitos. The company formerly handled about 1,500 tons of gold-silver ore monthly at its flotation-amalgamation mill and employed a crew of 38 men.

The Natomas Company reported a net profit of \$621,829 after all charges for the first nine months of 1942. This is equal to 66 cents a share and compares with \$1,139,611 or \$1.18 per share in the same period of the preceding year. Before the recent WPB ruling closing down gold operations, the company had been working seven dredges in the Folsom district of California. Thomas McCormack, Forum Building, Sacramento, California, is president of the Natomas Company.

James Bonner, 721 South Tremaine, Los Angeles, California, is reopening the old graphite mine in the Verdugo Hills near Los Angeles. At one time the mill on the property produced a form of graphite used for paint stock and foundry lacings.

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PLANS APPROVED FOR STRATEGIC MICA PLANT AT SANTA FE, N. M.

PLANS for the establishment of a custom mica rifting and trimming plant at Santa Fe, New Mexico, have been worked out by R. B. Ladoo, representative of the Colonial Mica Corporation, and have been approved by that company's New York office and by Metals Reserve Company officials in Washington. Ladoo is proceeding to set up the Santa Fe organization. A district engineer and an expert mica buyer from the East will be assigned to the new plant, and the necessary office and shop personnel will be employed locally.

The Colonial Mica Corporation, 92 Liberty Street, New York, recently was named sole buyer of strategic domestic mica for the Metals Reserve Company. It is expected that the Santa Fe office will serve not only New Mexico but the mica producing areas in Arizona and Southern Colorado as well. A similar office and shop have been established at Custer, South Dakota.

It is emphasized that the government is interested only in clear, flat sheet, muscovite mica which, when trimmed free of all cracks, stains, and imperfections, will yield sheets at least one inch square in the clear. Black stained mica and scrap mica, not considered strategic, are not acceptable.

The Colonial organization is not prepared to buy, lease, or operate mica mines, but will assist mica producers by leasing to them the necessary mining equipment at a low rental rate. The company will assist producers in solving mining problems and will purchase all strategic quality mica. Owners or lessees of deposits of strategic mica are urged to send complete information regarding their deposits, together with representative samples of their mica, to R. B. Ladoo, Colonial Mica Corporation, Hotel La Fonda, Santa Fe, New Mexico.

TUNGSTEN TREATMENT PLANT PROPOSED FOR TUCSON, ARIZONA

A GROUP of government engineers has been sent to Tucson, Arizona, to make a survey of the possibilities and work out details for plant construction to handle the cleaning and concentrating of tungsten ores there.

It is understood that government agencies are proposing to finance the enlargement of plants now operated by E. A. Jacobs and by Fernstrom and Company, and that those two organizations may be designated as agents for the Metals Reserve Company to handle the work. The Fernstrom plant, it is stated, will be designed to handle the cleaning operations, while the Jacobs plant will be developed as a concentrating unit. Concentrates will be shipped to the east, while middlings will be sent to the new plant recently completed at Salt Lake City by Metals Reserve.

A buying station, Tungsteno Mexicano, was established recently at Nogales, Sonora, Mexico, to handle purchase of tungsten ores from northern Mexico, and purchase of these ores also has been authorized for the Metals Reserve stockpiles at Deming, New Mexico, and at Phoenix and Parker, Ari-

zona. When plant construction has been worked out at Tucson, it is understood that it is planned to ship to Tucson for treatment ores purchased at these various points.

FOURTH EDITION, HANDBOOK FOR PROSPECTORS PUBLISHED

THE popular "Handbook for Prospectors and Operators of Small Mines" by M. W. von Bernewitz has been issued in a new fourth edition, as revised by Harry C. Chellson. This famous volume, thoroughly revised and enlarged, covers the latest advances in methods and data. It is a complete, practical guidebook that can be slipped into the pocket, and that gives helpful facts and suggestions to the prospector, miner, and engineer in the field.

The Handbook covers what the practical man can use in the field, from the description of the most efficient equipment to the making of field tests with simple equipment. Practical uses of geology and mineralogy are explained. New tests for minerals are presented and minerals that are growing in importance receive special attention. An entire new chapter covers miscellaneous weights and measures, calculations, shipping ores and products, custom mills and smelters, charges, minerals and metal content, and prices over a long period.

This new edition, the fourth, contains 540 pages, 5 by 7½ inches, 161 illustrations, and is priced at \$4.00. It is available from the Book Department, The Mining Journal, Phoenix, Arizona.

BUREAU OF MINES PUBLISHES REPORT OF OREGON SAND STUDY

THE Bureau of Mines has published the report of its investigations into the concentration of chromite, zircon, garnet, and ilmenite in the Oregon beach sands. The report, known as Investigations 3668, was made by John Dasher, Foster Fraas, and Alton Gabriel, all of the Bureau of Mines, Nonmetals Division, College Park, Maryland.

On the coast of southwestern Oregon, particularly in Coos and Curry counties, are numerous pockets of heavy sand that have been deposited on the back of old beaches. Sediments have covered the deposits, but outcrops are to be found along creek beds. The total tonnage has not been estimated. Samples from various places along 44 miles of coast have been tested.

It was shown that chromite concentrates containing more than 40 per cent Cr₂O₃ may be produced from all of the samples of beach sand tested. These concentrates are not very satisfactory for chemical use and are of little use for chrome refractories. The milling steps should include cleaning, classification, hydraulic tabling, drying, and electrostatic and, in some instances, magnetic separation. Magnetic separation of the electrostatic rejects will produce a salable zircon concentrate and a garnet concentrate that may be salable. Separation of ilmenite concentrate is not possible, the report states. A further study of the most magnetic black-sand grains is being undertaken.



A continuous effort by all of us at home is necessary to send the supplies so desperately needed by our fighting forces.

We must maintain a heavy flow of scrap metals to the steel mills in order to produce the steel essential to this tremendous war production program.

The Colorado Fuel and Iron Corporation

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and payments by the mill, including the premium payments on the ores, are being made within 30 days. H. F. Mills, Humboldt, is general manager for the Iron King Branch.

Approval has been granted by the Reconstruction Finance Corporation for a preliminary development loan for the **Hercules-Badger** mine in the Wallapai mining district of Mohave County, Arizona. The group of patented mining claims consists of the Woodchuck, Badger, Hercules, Water Witch, and Majestic claims, and is located about two miles northeast of Chloride, Arizona. The loan will be used to clean out and retimber the 1,025-foot tunnel in the Badger claim in order to carry on further development work. Values are in zinc, lead, gold, and silver. The lessees are J. E. Layton, Box 227, Chloride, and Albin Larson, Box 333, Chloride.

The **Eagle-Picher Mining and Smelting Company** recently purchased the San Xavier zinc-lead mine from the New Jersey Zinc Company. The property is located about 30 miles south of Tucson in Pima County, Arizona, and it is expected that Eagle-Picher will start expansion work at the mine immediately. Plans call for construction of a 250-ton concentration plant at the mine site. Actual production is expected to be started sometime within the next six months.

Development work planned for the **Emerson** mine in the Chloride district of Mohave County, Arizona, includes repairing the lower tunnel and equipping the mine with rail and pipe to make accessible lead-zinc ores near the endline of the Emerson property. The work will be done by means of a Reconstruction Finance Corporation development loan of \$5,000. Frank H. Grannis, Box 147, Chloride, holds a lease with option to purchase the Emerson.

Tex Furnas, Wilhoit, via Prescott, Arizona, is reported to have ready a shipment of gold, silver, and lead ore from his **Black Diamond** mine, which is located north of Wilhoit in the Copper Basin mining district of Yavapai County, Arizona.

Edward H. Molson of **Molson and Company**, Box 607, Tucson, Arizona, has received approval of the company's Maudina tungsten mine as a new producer making it eligible for the MRC new price for tungsten. The mine is located in Bonito Canyon near Oracle, Arizona.



Anthony De Mayo, Ridgecrest, California, is reported to be engaged in blocking out a large body of tetrahedrite ore at the **Green Copper** mine, which was formerly known as the Yellow Treasure. The ore carries a high copper content, as well as from 1 to 5 ounces of both gold and silver. The ore will be shipped to the Selby, California, smelter. The Green Copper is located near Ridgecrest in Kern County, California, and is owned and operated by De Mayo.

W. J. Loring, 102 Hillmont Avenue, Auburn, California, is reported to have taken an option on two chrome properties near Garden Valley, California, from the owners, John W. Randolph and Andrew Wolf. Loring recently resigned as managing engineer for the Alhambra-Shumway Mines Company, El Dorado, California, and the Portola Corporation, Johnsville, California, when both companies were forced to suspend their gold operations in compliance with the recent WPB order for gold mines.

The **Carson Hill Gold Mining Corporation**, Melones, California, has reported a net income of \$37,650, after depletion, depreciation, etc., for the year ended September 30, 1942. The mine and mill were operated continuously during the year until the grinding and flotation plant was destroyed by fire. During the operating period, it has been reported that the company mined and milled 238,873 tons of ore. The Carson Hill concern paid no dividends during the fiscal year, but a dividend of 3½ cents per share, totaling \$84,000 payable in January of 1943, was authorized. Lawrence MonteVerda is vice-president of the Carson Hill Gold Mining Corporation.

Ellis R. Patterson, Quincy, California, has announced that he intends to continue operations at his chrome mine throughout the winter season. The property is located in Plumas County near Quincy, and is reached by the Rock Creek forest service road, which is closed because of snow conditions for several months of the year. This year Patterson plans to serve his mine

with a tractor-pulled trailer. Ore from this property is shipped to the government stockpile at Quincy.

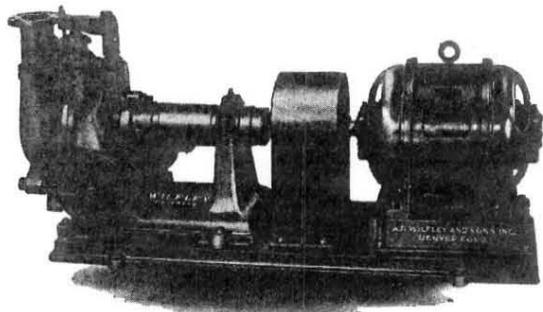
Prospecting is being carried on near Magalia in Butte County, California, to determine the extent of tin deposits which were discovered recently by John Quirk of Paradise, California. The deposits are located on a 160-acre section of land owned by Quirk and Robert Easley, also of Paradise. It has been reported that a ledge of tin ore has been uncovered in a lime and serpentine formation, while stringers of tin from 2½ to 3 inches in length also have been found. The tin was discovered several hundred yards from a Butte County serpentine quarry, where the county has obtained serpentine to surface roads for the past 20 years.

Two of the largest dredges owned by the **Yuba Consolidated Gold Fields, Ltd.**, are being put back into operation on the Yuba River near Hammonton, Yuba County, California. Dredging is being resumed by special permission of the Board of Appeals of the War Production Board, which has specified that only men over the age of 55 may be employed by the company. All operations of the company at Hammonton; Biggs, Butte County; Callahan, Siskiyou County; and Watertown near Merced, Merced County, were suspended under the recent ruling closing down gold operations. The company had been employing about 350 men on the average. F. C. van Deinse, 351 California Street, San Francisco, is vice-president in charge of operations for the Yuba concern.

Active scheelite mining operations have been started at the Walker placer claims southeast of Randsburg, Kern County, California, by the **Desert Tungsten, Inc.** Installation of the first unit of the tungsten recovery plant has been completed under the direction of L. C. Brittain, Randsburg. The Walker property, which was recently acquired by Desert Tungsten, formerly was worked for gold, but substantial scheelite deposits are reported to have been discovered in recent exploration and development of surface placers. William A. Dewitt, Lyon Building, 106 East Second Street, Reno, Nevada, is general manager in charge of operations.

The original application of the **Natomas Company** for permission to continue dredging has been denied by the War Produc-

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tion Board, but a second appeal is being made by the company. The Natomas concern had been operating seven dredges in the Folsom district of California until the recent WPB order for gold mines forced suspension of company operations. It has been reported that the company recently signed a lease with the Richfield Oil Corporation, covering oil and gas rights on 5,700 acres of Natomas-owned land, located between Sacramento and Marysville, California. According to the terms of the lease, Natomas will receive a one-sixth royalty on the Richfield production from the property. In addition to its California dredging operations, Natomas also holds approximately 60,000 acres of agricultural lands in California, part of which is covered by the new Richfield lease. Thomas McCormack, Forum Building, Sacramento, California, is president of the Natomas Company.

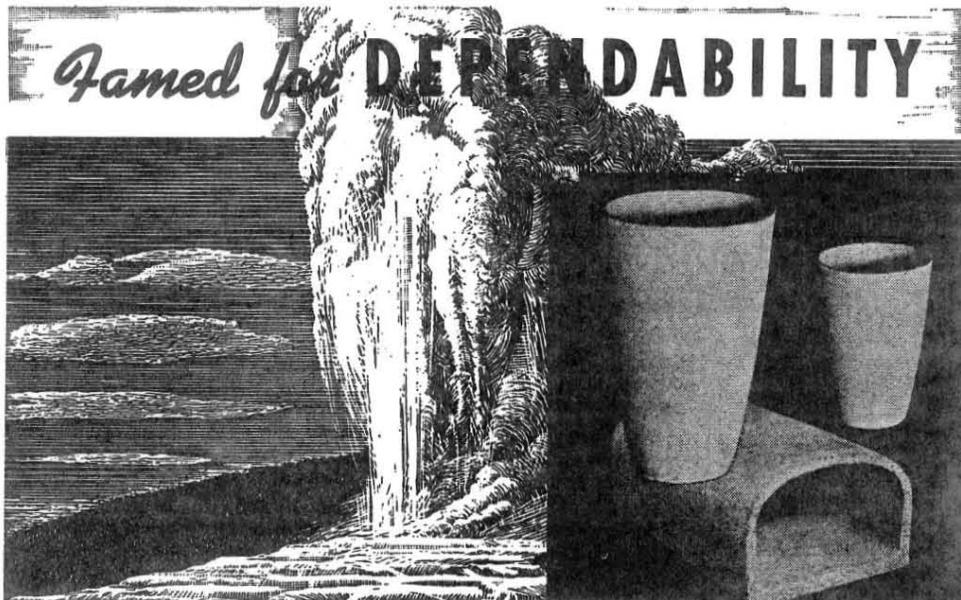
Announcement recently was made of the application of the **Anglo American Mining Corporation**, Randsburg, California, to withdraw its common stock from the San Francisco Stock Exchange. In the petition the company explained that the action was taken following recent suspension of its Yellow Aster operations in compliance with the WPB ruling concerning gold mining. Anglo American controls the Carson Hill Gold Mining Corporation, Melones, California, which also has made an application for delisting from the San Francisco Stock Exchange. Walter Lyman Brown, 206 Sansome Street, San Francisco, California, is president of Anglo American Mining Corporation.

Development work on a group of ten claims in the Marietta district near Bishop in Inyo County, California, is being carried on satisfactorily by the **Kaiser Company, Inc.**, Iron and Steel Division. The property recently was optioned by the company and it is reported that preliminary investigation has indicated substantial tonnages of tungsten ore. It is understood that the Kaiser interests are starting installation of a crushing plant for the White Rock silica deposits near Mariposa, California. Two shipments, amounting to about 5,000 tons of silica, already have been made from this property to the Permanente Metals Corporation. Henry J. Kaiser, Latham Square Building, Oakland, California, is president of the Kaiser concern.

Word has been received of the approval by the MRC of the **Black Eagle** mine near Glamis in Imperial County, California, as a new producer and therefore eligible for the new price for tungsten. The property is being operated by Charles Kirton, Box 41, Glamis.

The Metals Reserve Company also has recognized the **Krebs-Martin** mine located near Posey in Tulare County, California, as a new producer of tungsten and as such eligible to take advantage of the newly established price for tungsten. It is understood that the operators of the property are Hugh B. Martin and Kellogg Krebs, both of whom may be addressed at 811 West Seventh Street, Los Angeles, California.

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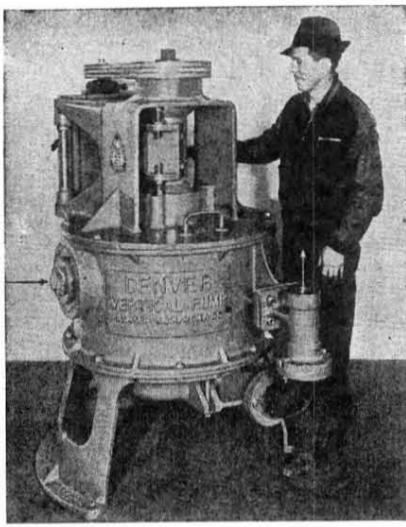
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dino County, California, recently was classed as new by the Metals Reserve Company and under this rating may receive the new price for tungsten. Production was only recently begun at the mine by the **Mine Development Company** after a four-month testing period, during which time there were indications of the possibility of high scheelite recovery. Ore from the property is being treated at the **Pride of Mojave** mill which the company has leased and revamped. Officers of Mine Development include: Hewitt S. West, 610 South Broadway, Los Angeles, president; H. R. Golenor, vice-president; and James I. Moore, 2850 Fremontia Street, San Bernardino, California, general manager. The company may be addressed at 610 South Broadway, Los Angeles, and Drawer Y, Mojave, California.

The **Amelia** mill near Caliente in Kern County, California, is being operated at present by the **Basic Metals Company**, which maintains headquarters at 4567 Melrose Avenue, Los Angeles, California. The production of this company recently was classed by the Metals Reserve Company as new and therefore the concern is eligible to take advantage of the new price for tungsten. The application for the new rating was made to the MRC by Ogden Hunsaker, manager of the Amelia mill.

Panaminas, Inc., has received announcement that production from its **Adamson** mine will be considered new by the Metals Reserve Company and under this classification the company is eligible to receive the new price allowed tungsten producers. The mine is located in the Pine Creek area near Bishop, California, and is being leased by the Panaminas concern from the owner, D. B. Adamson of Bishop. The company is employing about 150 men and is shipping approximately 300 tons of ore daily to the U. S. Vanadium Corporation mill near Bishop. Panaminas, Inc., which maintains head offices at 230 Park Avenue, New York, New York, is a subsidiary of Ventures, Ltd., a Canadian company.

Western Associates of Los Angeles, California, is one of the new tungsten placer operators in the Randsburg district of California. The company holds 100 acres of placer ground adjacent to the Black Hawk mine and is leasing from the Philadelphia, Pennsylvania, owner. Present production is being started at the rate of 30 yards a day, but it is expected that this will be increased in the near future. W. L. Bailey, Randsburg, California, is directing this project.

The Metals Reserve Company has approved the application of the **B. C. M. Mines** to be recognized as a new producer of tungsten and eligible to receive the new price set for tungsten. The company, a limited partnership, composed of Vernon Bettin and E. P. McMillen, limited partners, and R. D. Carse, general partner, Box 214, Tehachapi, California, holds a master lease on the Summit Lime Company property located about four miles south of Tehachapi in Kern County, California.

According to reports, development of cinnabar deposits in the Potato Peak district near Bodie, California, by the **Alta Quicksilver Mines** has disclosed ore of com-

mercial value. It is understood that the operators are planning to install necessary machinery immediately and to start active mining operations as soon as weather conditions permit. The company is controlled by Warren Loose, G. A. Peterson, and John L. Rosecranz, and head offices are at 2 Pine Street, San Francisco, California.

Several bodies of high-grade chrome ore are reported to have been discovered recently by John O. McBroom, Cecilville, California. The deposits are located near Cecilville in Indian Gulch in Siskiyou County, California. When regular production is started at the mine, it is expected that ore will be shipped to Yreka, California.

The **Tungsten Hill** mine has been listed by the Metals Reserve Company as a new producer of tungsten and therefore is eligible to receive the newly established price for tungsten. The mine is located near Havilah in Kern County, California. The application for the new rating was filed by E. E. Lambert, Havilah, via Caliente, California.

Another property being recognized by the Metals Reserve Company as a new producer eligible for the new price for tungsten is the **Scheelore** mine, a group of claims located on the headwaters of McGee Creek 40 miles northwest of Bishop, California. The eight claims are owned by H. A. Van Loon and J. E. Morhardt, both of Bishop. Work has been confined mainly to what is known as the No. 3 ore body, and construction of an 11-mile, \$50,000 road has been completed for a distance of six miles. A small pilot plant was operated during the past season, but will be replaced with a 10,000-ton per month mill for washing the talus material, which contains about six pounds of recoverable WO₃ per ton. A slusher scraper will be used to move the material to the mill. The talus is the eroded ore from the No. 3 ore body, where a large tonnage of 2 per cent scheelite ore has been developed.

The Board of Appeals of the War Production Board is reported to have granted a six-month extension of operations at the **Relief Hill** hydraulic mine located near Bloomfield, California. One restriction placed on the mine is that no workers under the age of 55 may be employed. The Relief Hill property is owned and operated by **Western Gold, Inc.**, W. H. Taylor, president, 943 Russ Building, San Francisco, California. C. E. Clark of Bloomfield is superintendent of hydraulic operations. The company had been employing 35 men at the Nevada County property and operating two seven-inch monitors until the mine was closed down early in the fall of 1942.

The **Tulare County Tungsten Mines** is reported to be a new producer according to classification by the Metals Reserve Company. Under this rating the company may take advantage of the new price for tungsten. The company has been treating about 20 tons of ore daily and has been installing new machinery to increase production to 50 tons per day by February. The mine is located about 14 miles east of Exeter, Tulare County, California. Howard G. Teale, Porterville, California, is gen-

eral manager. Kenneth Dunham, Lindsay, California, is superintendent of operations at the mine, and Dominick F. Lauricella is in charge of the company's finance and sales. Lauricella may be addressed at the company's head offices at 311 South Spring Street, Los Angeles.

The Golden Feather Dredging Company, Oroville, California, is engaged at present in clearing the channel of the Feather River near Oroville in order to prevent the possibility of flooding. The company was granted a 60-day extension of operations by the Board of Appeals of the War Production Board, after the company was forced to suspend work under the recent gold mine order. E. A. Wiltsee, Room 1003, Wells Fargo Building, San Francisco, California, is general manager for Golden Feather Dredging.

Operations have been started at the new steel plant of the Kaiser Company, Inc., Iron and Steel Division, at Fontana, California, approximately eight months after construction was first started. It is expected that the plant will produce about 420,000 tons of pig iron during the first year of operation. Full capacity for the unit has been estimated at 675,000 tons of ingot production annually, while the rolling mill is equipped to handle 300,000 tons of ship plates. Ore for the plant will come from Kaiser mines near Kelso, California, while coal will be shipped from Utah. Henry J. Kaiser, Latham Square Building, Oakland, California, is president of the Kaiser concern and George Havas is chief engineer for the Iron and Steel Division.

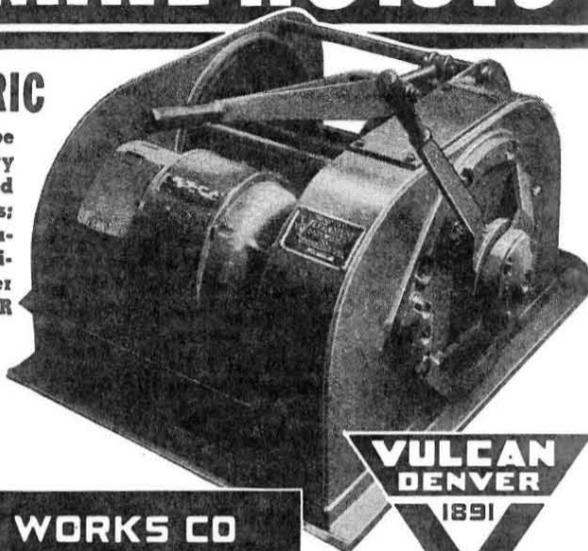
Development work at the Napoleon mine is reported to be progressing very slowly, mainly because the property has not been worked in the last 20 years and the workings are in very poor condition. There also has been some difficulty in obtaining skilled workers at the mine. The property is located in the Telegraph City district near Angels Camp, Calaveras County, California, and was reopened recently by the Mountain Copper Company, Ltd. William F. Kett, 216 Pine Street, San Francisco, California, is general manager of Mountain Copper operations and J. M. Basham of Shingle is superintendent at the Napoleon.

Following completion of arrangements with the Yellow Aster Mining and Milling Company, Randsburg, California, for the use of its entire water system, the Rand Gold Dredging Associates has connected the Yellow Aster water main and the dredge pit by means of a 10-inch pipe line. It is stated that the additional water will double the present supply and stabilize the water conditions at the dredge so that continuous operation should be assured. A crew of seven men has been engaged in laying the pipe line and the dredge crew has been making dredge and building repairs while the water arrangements were being made. The Rand Gold Dredging company formerly carried on operations near Cottonwood, Shasta County, California, before dismantling its dredge and moving it to the Randsburg property, which is now known as the Tungold mine. M. E. Howard, Box D, Randsburg, is superintendent of operations

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and Newton Cleaveland, 351 California Street, San Francisco, is consulting engineer for the concern.

William Petty, Inyokern, California, has reported the conclusion of a bonded lease arrangement whereby Erle P. Halliburton, 907 National City Bank Building, Los Angeles, California, will develop and operate the Pyavin group of tungsten claims located in Indian Wells Canyon. The claims are owned by M. M. Warner, the Crowther brothers, Bishop, California, and Grant Merrill, Mojave, California, and were leased from the owners by Petty. A bulldozer is being used to put the road in condition and a compressor and other equipment have been moved in. H. V. Hughes, Cima, California, will be in charge of operations.

The 320 mine workers employed by the Lava Cap Gold Mining Corporation recently voted to continue working under the same conditions and for the same wages as they had been receiving previously. The basic wage has been \$6.48 per eight-hour day. The workers had made a request for a raise to \$1.10 per hour or \$8.80 per day. However, when the company explained that the mine was making little profit and that any increase in operating costs would result in closing down the mine, the workers withdrew their request. Otto E. Schiffner, Nevada City, California, is general manager of Lava Cap operations.

Word has been received from the War Production Board by the Original Sixteen-to-One Mine, Inc., Alleghany, California, that permission has been granted for resumption of work at the company's mine. Restrictions have been placed on the number and age of the men employed by the company, as well as on the tonnage of ore mined. Under normal conditions the company had been employing an average of 100 men, but at the time the mine was closed down in October as a result of the recent closing order for gold mines only 50 men were on the payroll. Clayton Bennett, Alleghany, is general superintendent of Original Sixteen-to-One operations.

According to reports, the Federal Housing Authority has completed the construction of 40 temporary dwelling units at the Westvaco magnesite mine located 20 miles south of Livermore in Alameda County, California.

Alvin M. Donnelly, Box 45, Johnsondale, California, has had his application approved by the Metals Reserve Company, recognizing the Carver mine as a new producer and therefore eligible for the new price of tungsten. The mine is located in Tulare County, California.

The Baltimore Claim mine in the Atolia mining district near Atolia in San Bernardino County, California, has received approval of the MRC for classification as a new producer and as such is entitled to the newly established price for tungsten. The application for the new classification was filed by N. C. Amen, Williams and Amen, 318 West Colorado Boulevard, Glendale, California.

The application of the Tungsten Chief Mining Company to be rated as an eligible producer for the new price for tungsten recently was approved by the Metals Re-

serve Company. The tungsten firm operates property near Caliente, California. The application was filed by N. T. McKee, 318 West Colorado Boulevard, Glendale, California, who is in charge of operations for Tungsten Chief Mining Company. Tom McKee of Caliente operates the mill, where the company treats ore for nearby mines in addition to its own output.

Robert W. Kelso, Box 728, Bishop, California, is operating the Marble tungsten mine located near Bishop in Inyo County, California. The property is listed among the mines recently approved by the Metals Reserve Company as a new producer and eligible for the new price for tungsten.

Also listed as a new producer is the Mesa Tungsten Company which operates property about eight miles west of Bishop, California. In accordance with this classification the Metals Reserve Company allows Mesa Tungsten the new price for tungsten. The application was filed by William C. Longnecker, Box 228, Bishop, California.

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Both milling plants of the Vermiculite Mining Company are in continuous operation. The company holds under lease all the property of the Black Mica Mines, Inc., in the Powderhorn district near Gunnison, Colorado, and operates a mill there. Its second mill is located on company-owned ground at Hillside. Clyde Glosser, 801 Hazel Avenue, Canon City, is manager for the company, which is headed by Stanley G. Gray, 523 Marquette Avenue, Minneapolis, Minnesota.

The Marcella zinc claims in San Juan County about one mile south of Silverton, Colorado, on the Denver and Rio Grande Railroad, are being developed by a group of Silverton men. The output is expected to be shipped directly to the smelter. The property was opened some years ago, but no extensive work was done in it because of the poor zinc market.

High-grade ore is being sacked for shipment by the Yacolt Mines, Inc., William E. Brewster of Yacolt, Washington, president. Values are reported to be in gold, silver, copper, lead, and zinc. The company was organized nearly two years ago to take over and operate the Wynona mine at Gold Hill in Boulder County, Colorado. Alex J. McLellan of Boulder is general manager.

The 700-foot shaft in the Stanley has been unwatered to the seventh level and work at depth can be started. The property, formerly known as the Whale and Hukill lodes, is being reopened by J. B. Furstenberg, 2711 Stout Street, Denver, Colorado. It is located near Idaho Springs in Clear Creek County. Values are in gold, silver, lead, and copper.

Operations will be continued throughout the winter by the Callahan Zinc-Lead Company at its Akron mines near Gunnison, Colorado, which are being reopened and

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The General Electric Company has suspended work for the winter at its Germania tungsten mine near Wellpinit, Washington. It is assumed that operations will be resumed in a few months. H. O. Hammond is general superintendent and H. H. Barrows, 1648 Sixteenth Street, Oakland, California, is manager of GE's mining interests.

The New England zinc-lead property in Stevens County, near Northport, Washington, is being reopened and examined. Drilling operations were carried on in the fall. While the operators have not been announced, it is understood that Frank H. Mitchell of Republic, general superintendent of Knob Hill operations, is in charge of the preliminary work being done at the New England property.

MANGANESE IN SOUTHERN OREGON STUDIED BY STATE DEPARTMENT

RANDALL E. BROWN, junior geologist of the Department of Geology and Mineral Industries of the State of Oregon, has reported on some manganese deposits in the southern Oregon coastal region, and the report has been published by the department as GMI Short Paper No. 9. Early in 1940 a survey of all Oregon manganese deposits of record was initiated by the department and results were published in 1942 as Bulletin No. 17, "Manganese in Oregon." A more detailed study seemed justified, so Brown spent two weeks in the spring of 1942 making the geologic study upon which this report is based.

The particular deposits treated by Brown are the McAdams, the Roberts, the Colegrove, and the Smith manganese deposits. However, he feels that results of the study of these properties should be applicable to others of the region. Manganese deposits are found in chert lenses and are frequently low in manganese and high in silica. Yet if the conditions of the occurrence of the manganese in the chert are realized, there is every possibility that other deposits of commercial manganese ore may be found, Brown states. Because of their small size, the deposits must be readily accessible to be commercial, but under the stimulus of war prices and needs, all prospects of this type should be investigated.

MIAMI COPPER IS PLANNING TRAINEE PROGRAM FOR WOMEN

THE Miami Copper Company, Miami, Arizona, has established a committee to supervise a trainee program for its women apprentices, the first such program for women mine workers. It is understood that the company already is employing 102 women in the reduction plant, operating lathes, drill presses, etc., and in the boiler and pipe fitting shops, and it is expected that the company will increase this number soon. Miami Copper recently completed construction of a change room and lockers for the women workers.

UNITED STATES BUREAU OF MINES* releases

Mine Production Figures on Gold and Silver

GOLD

TOTAL mine production of recoverable gold in the United States (Territories included) was 3,618,543 fine ounces in 1942, a decrease of 38 per cent from 5,881,798 ounces in 1941, according to preliminary figures of the United States Bureau of Mines. The value of the gold, calculated at \$35 per fine ounce, was \$126,649,005 in 1942 and \$205,862,930 in 1941.

Of the total production in 1942, California contributed 24 per cent, South Dakota 14 per cent, Alaska 14 per cent, Utah 11 per cent, Nevada 8 per cent, Colorado 8 per cent, Arizona 7 per cent, Montana 4 per cent, Philippine Islands 4 per cent, Idaho 3 per cent, and other states 3 per cent. The Philippine Islands fell from the position of second largest producer in 1941 to ninth place in 1942.

The following table and summary of state reviews for 1942 were obtained from current reports of the western field offices of the Bureau of Mines.

ALASKA

The output of recoverable gold in the Territory of Alaska in 1942 was about 515,358 fine ounces, a decrease from the 1941 production of 180,109 fine ounces. The larger part of Alaskan gold (about 70 per cent) was produced by placer operators, including 45 floating connected-bucket dredges which alone yielded about 40 per cent of the total gold. The United States Smelting Refining and Mining Company, the largest single producer of gold, controlled eight floating connected-bucket dredges and a hydraulicking operation in the Yukon River Basin region, four floating connected-bucket dredges including one new dredge in the Seward Peninsula region, and a lode mine in the Yukon River Basin region. The Alaska Juneau Gold Mining Company, the second-largest producer of gold, operated the largest lode mine in Alaska at Juneau in the Southeastern Alaska region with a 38 per cent decrease in production. In order of importance, the major placer-mining regions were the Yukon River Basin region, the Seward Peninsula region, and the Kuskokwim region. Large placer operators, in addition to the United States Smelting Refining and Mining Company, were the Livengood Placers, Inc., Alluvial Golds, Inc., and Gold Placers, Inc., in the Yukon River Basin region; the Arctic Circle Exploration, Inc., in the Seward Peninsula region; and the New York Alaska Gold Dredging Company,

Prepared by Charles W. Henderson, Supervising Engineer of Western Offices, Denver, Mineral Production and Economics Division, Economics and Statistics Service.

Refinery and mint receipts within the United States. Production in 1942 under Japanese occupation is not known.

in the Kuskokwim region. The most important lode gold producers were the Alaska Juneau Gold Mining Company, Alaska-Pacific Consolidated Mining Company, Hirst-Chichagof Mining Company, (operations suspended October 1942), Cleary Hill Mines Company, and Willow Creek Mines (operations suspended October 1942). The working season in most of the placer regions was somewhat longer than usual due to exceptionally large supplies of water in the streams. Labor shortage and unrest due to abnormal rates of pay offered by the large number of military projects that demanded skilled workmen curtailed the operations of some of the larger operators, and the War Production Board Gold Mining Limitation Order suspended virtually all gold-mining operations in October. Most of the gold produced (about 93 per cent) was sent to the United States Assay Office at Seattle, Washington; other major outlets were the American Smelting and Refining Company smelters at Selby, California, and Tacoma, Washington, and the San Francisco Mint.

ARIZONA

The output of recoverable gold from ores and gravels in Arizona was 247,500 fine ounces in 1942, a decrease of 67,892 fine ounces from 1941. Decrease in the output of siliceous gold from lode mines and the loss in output of gold from placers, due largely to suspension in December 1941 of operations of a dragline dredge in Lynx Creek and to a substantial decline in output of gold from dredging operations on Big Bug Creek, account for decreased gold production in the state. Gold recovered from copper ores mined at Bisbee, Jerome, Ajo, and Superior represented 55 per cent of the state total. The remainder of the gold from lode mines came largely from siliceous gold ore from mines in the San Francisco, Old Hat, and Weaver districts.

The more important lode gold-producing mines in Arizona in 1942 were the Copper Queen, New Cornelia, Mammoth-St. Anthony, United Verde, and Gold Road mines. Placer operations produced about 3,500 fine ounces of gold in 1942, compared with 11,931 ounces in 1941. Gold from lode mines totaled about 244,000 ounces in 1942 compared with 303,461 ounces in 1941.

CALIFORNIA

California, again the leading gold-producing state in spite of a 40 per cent decrease in gold production from 1941, produced 851,000 fine ounces of recoverable gold in 1942, 557,793 ounces less than that of 1941. This decrease in 1942, compared with 1941, was larger than that suffered in any previous year in California history and was due largely to the promulgation on October 8 of War Production Board Limitation Order L-208, and to a lesser extent to rising expenses and severe shortages in both labor and materials on the West Coast. Despite these difficulties the Grass Valley-Nevada City district in Nevada County continued to be the principal source of gold, chiefly from lode-mining operations. Other of the more important counties producing gold were: Kern, Amador, Calaveras, Plumas, and Shasta counties, the bulk of which was from lode mining, and Sacramento, Yuba, Butte, Siskiyou, Merced, and Trinity counties, the bulk of which was from placer mining. The Idaho Maryland Mines Corporation, working the Idaho Maryland-Brunswick group in the Grass Valley-Nevada City district, appears to have fallen from first place in 1941 to fourth in 1942. Other large gold producers were the Empire Star Mines Company, Ltd., (Newmont affiliate), operator of the Empire, Pennsylvania, North Star, and Murchie (operation discontinued early in 1942) mines in the Grass Valley-Nevada City district in Nevada County, the Zeibrigh mines near Emigrant Gap in Nevada County, and the Yuba Consolidated Gold Fields dredging company in Yuba County. Floating connected-bucket dredges yielded the bulk of the placer gold production in California in 1942. The number of dragline dredges in operation in 1942 declined and Order L-208 virtually suspended production by that method by the end of 1942. Yuba Consolidated Gold Fields, operating floating connected-bucket dredges, chiefly in Yuba County and also in Butte, Merced, and Siskiyou counties, was the leading producer of gold in California.

COLORADO

The output of recoverable gold in Colorado in 1942 was 274,212 fine ounces, a decrease of 105,817 ounces from 1941. A marked decrease in production of gold from Boulder, Clear Creek, Eagle (71 per cent), Gilpin, Park, Rio Grande, and Teller counties was responsible for the state decrease. Placer operations, chiefly in Park, Gilpin,



"There, Dopey, nothin' to remember. All you gotta do is go up to th' supply room and turn 'round!"

Summit, Lake, and Clear Creek counties, yielded 22,400 fine ounces of gold in 1942, compared with 30,377 fine ounces in 1941, a decrease of 26 per cent. Gold from lode-mining operations came chiefly from gold and gold-silver ores. Mines in the Cripple Creek district, Teller County, were responsible for 39 per cent of the state total gold output in 1942.

IDAHO

Idaho in 1942 produced 91,000 fine ounces of recoverable gold, a decrease of 58,816 ounces (39 per cent) from 1941. The output from lode mines was about 46,000 fine ounces, a decrease of 31,421 ounces from 1941, and that from placer mines was 45,000 fine ounces, a decrease of 27,395 ounces from 1941. Floating connected-bucket dredges were operated at Idaho City, Centerville, Sunbeam, near Harvard, Twin Springs, Warren, Pierce, near Elk City, and near North Fork. Nearly half of the total lode gold from lode mines came from the Middle Boise (Atlanta) district; the remainder was produced chiefly in the Yellow Pine, Burgdorf-Marshall Lake, Warm Springs (Hailey), Coeur d'Alene, Carson (Silver City), Mineral Hill (Shoup), and West View districts. The three largest producers of gold in Idaho in 1942 were the Boise-Rochester-Monarch group at Atlanta, Fisher and Baumhoff dredges at Centerville, and the Boise King Placers (bucketline dredge) near Twin Springs.

MONTANA

The output of recoverable gold in Montana was 145,800 fine ounces in 1942, a decrease of 100,675 ounces (41 per cent) from 1941. The loss resulted from the decrease in output from both lode and placer properties; the production from placer operations (61,611 ounces in 1941) decreased to about 41,600 ounces in 1942, while the production of gold from lode mines (104,200 ounces) in 1942 was about 80,664 ounces less than 1941 output. The five largest gold producers in Montana in 1942 are, respectively, the Anaconda Copper Mining Company's copper and zinc mines at Butte; the West Mayflower mine near Whitehall; Winston Brothers dredge, near Clancey; the Ohio-Keating mine at Radersburg; and the Porter Brothers bucketline dredge at Helena.

NEVADA

The production of recoverable gold from Nevada in 1942 was 295,200 fine ounces, a decrease of 71,203 ounces from 1941. The leading gold producer in Nevada in 1942 was again the Getchell mine in the Potosi district, Humboldt County, operated by the Getchell Mine, Inc. Other large producers of gold in order of production were: the Nevada Consolidated Copper Corporation and Consolidated Coppermines Corporation, both in the Robinson district, White Pine County; the Manhattan Gold Dredging Company in Nye County; and the Dayton Dredging Company, located on the edge of the town of Dayton, Lyon County. Shipments of siliceous ores from many small mines to the McGill smelter (Kennecott Copper Corporation), primarily for use as a flux, were an important source of gold in Nevada in 1942.

Mine Production of Gold in the United States, 1941-42, by States in Terms of Recoverable Metal

| State or Territory | Fine ounces | | Increase or decrease in quantity in 1942 | | Value (at \$35 per ounce) | |
|----------------------------|-------------|-----------|--|---------|---------------------------|---------------|
| | 1941 | 1942† | Fine ounces | Percent | 1941 | 1942† |
| Western States and Alaska: | | | | | | |
| Alaska | 695,467 | 515,358 | -180,109 | -26 | \$ 24,341,345 | \$ 18,037,530 |
| Arizona | 315,392 | 247,500 | -67,892 | -22 | 11,038,720 | 8,662,500 |
| California | 1,408,793 | 851,000 | -557,793 | -40 | 49,307,755 | 29,785,000 |
| Colorado | 380,029 | 274,212 | -105,817 | -28 | 13,301,015 | 9,597,420 |
| Idaho | 149,816 | 91,000 | -58,816 | -39 | 5,243,560 | 3,185,000 |
| Montana | 246,475 | 145,800 | -100,675 | -41 | 8,626,625 | 5,103,000 |
| Nevada | 366,403 | 295,200 | -71,203 | -19 | 12,824,105 | 10,332,000 |
| New Mexico | 27,845 | 12,797 | -15,048 | -54 | 974,575 | 447,895 |
| Oregon | 96,565 | 47,500 | -49,065 | -51 | 3,379,775 | 1,662,500 |
| South Dakota | 600,637 | 521,989 | -78,648 | -13 | 21,022,295 | 18,269,615 |
| Texas | 306 | 277 | -29 | -9 | 10,710 | 9,695 |
| Utah | 356,501 | 386,000 | +29,499 | +8 | 12,477,535 | 13,510,000 |
| Washington | 84,176 | 74,600 | -9,576 | -11 | 2,946,160 | 2,611,000 |
| Wyoming | 478 | 33 | -445 | -93 | 16,730 | 1,155 |
| | 4,728,883 | 3,463,266 | -1,265,617 | -27 | 165,510,905 | 121,214,310 |
| Eastern States: | | | | | | |
| Alabama | 30 | 1 | -29 | -97 | 1,050 | 35 |
| Georgia | 311 | 36 | -275 | -88 | 10,885 | 1,260 |
| North Carolina | 3,244 | 4,080 | +836 | +26 | 113,540 | 142,800 |
| Pennsylvania | 2,422 | 2,800 | +378 | +16 | 84,770 | 98,000 |
| South Carolina | 15,508 | 7,760 | -7,748 | -50 | 542,780 | 271,600 |
| Tennessee | 227 | 170 | -57 | -25 | 7,945 | 5,950 |
| Virginia | 240 | 100 | -140 | -58 | 8,400 | 3,500 |
| | 21,982 | 14,947 | -7,035 | -32 | 769,370 | 523,145 |
| Total continental | | | | | | |
| United States | 4,750,865 | 3,478,213 | -1,272,652 | -27 | 166,280,275 | 121,737,455 |
| Philippine Islands | | | | | | |
| | ††1,130,933 | ††140,330 | -900,603 | -88 | ††39,582,655 | ††4,911,550 |
| Total | 5,881,798 | 3,618,543 | -2,263,255 | -38 | 205,862,930 | 126,649,005 |

†Preliminary figures.

††United States refinery and mint receipts.

NEW MEXICO

The production of recoverable gold from New Mexico in 1942 was 12,797 fine ounces, a decrease of 15,048 ounces from 1941. The principal gold-producing districts in New Mexico were: Mogollon, Catron County; Central, Grant County; Steeple Rock, Grant County; and Lordsburg, Hidalgo County. The Nevada Consolidated Copper Corporation in Central district, Grant County, and the Black Hawk Consolidated Mines Company, treating gold-silver ore in the Mogollon district, Catron County, until June, were the two largest producers of gold in New Mexico in 1942.

OREGON

The quantity of recoverable gold produced in Oregon in 1942 was 47,500 fine ounces, a decrease of 49,065 ounces (51 per cent) from 1941. Of the total value of gold, silver, copper, and lead produced in Oregon in 1942, 95 per cent was in gold. Over two-thirds of the gold was recovered from placer operations and the remainder

from lode properties. Lode and placer operations were located chiefly in Baker, Grant, Jackson, and Josephine counties. The suspension of operations by the Cornucopia Gold Mines on October 31, 1941, was a leading factor in reducing the importance of Baker County as a source of metal production in 1942. By the end of 1942, most, if not all, of the larger Oregon gold mines had suspended all productive work as a result of the Gold Mining Limitation Order L-208.

SOUTH DAKOTA

Gold is the primary metal of value mined in South Dakota. In 1942 the production of recoverable gold was 521,989 fine ounces, a decrease of 78,648 ounces from 1941. Gold is found in commercial quantities in South Dakota only in the Black Hills area. The Homestake mine at Lead, Lawrence County, producing slightly less gold than in 1941, continued to yield the bulk of the gold output of South Dakota and was again the largest gold producer in the United States. The second-largest gold

Carlota was reopened in 1941 and some development work done under the direction of George Scholey, general manager of Nielson and Company.

Present work at the Blue Rock mine consists of cleaning out a tunnel and shallow winze in order to be able to continue investigation of high-grade copper deposits. The owners, Lyle J. and Charles Button, Wickenburg, Arizona, are planning to develop both the vein showing copper and the one which shows lead and molybdenum values. The property comprises seven claims and is located in the Blue Tank district of Yavapai County, Arizona. At one time the Blue Rock was worked for its gold values. Two men are being employed at the mine.



Diamond drilling at the old Newton copper mine in Amador County, seven miles from Jackson, California, is said to have uncovered an extensive deposit 350 feet below the 400-foot level. Work is being continued by the Bureau of Mines to prove the extent and grade of the ore. The property was reopened and dewatered recently by J. H. Lester, Jackson, who is leasing from Fred W. Dufrane. It is expected that Lester will ship to the International Smelting and Refining Company at Salt Lake City, Utah, when regular production is under way at the Newton.

Alexander Feuerstein, 3863 Kerckhoff Street, Fresno, California, is reported to have completed installation of a crusher and mill at his tungsten mine. The property is located near the Indian settlement in Burrough Valley, 6 1/2 miles east of Tollhouse, Fresno County, California. Feuerstein also holds a gold placer property on Dry Creek near Friant in Fresno County, California.

The Champion Sillimanite Company, Laws, California, is reported to be employing a crew of 12 men in operations at its property in Inyo County, California. The concern is producing diaspor and andalusite. Dr. J. A. Jeffery of the Champion Spark Plug Company, Detroit, Michigan, is president of Champion Sillimanite, and George W. Clarkson, Box 117, Laws, is mine superintendent and purchasing agent.

W. M. Middell, Happy Camp, California, is reported to have taken a lease and bond on the Lowden chrome mine located at Seiad, California. He is employing three men and already has about 25 tons of ore on the dump. Middell has been hauling ore from the Dorothea Reddy Moroney mines in the district.

The Mariposa Commercial and Mining Company, Charles W. Slack, Alaska Commercial Building, San Francisco, California, president, is reported to have deeded 18 acres northwest of Mariposa, with full water rights, to the state. The company, which formerly operated several mining properties in Mariposa County, California, has been liquidated but most of its holdings have not been disposed of.

D. J. Sullivan, Nevada City, California, is engaged in development work on two properties near Casa Loma in the Big Bend mining district of the Tahoe National Forest of California. A bulldozer is being used to strip the overburden. It is said that some 300 tons were produced from this mine during the first world war.

The Kaiser Company, Inc., Iron and Steel Division, is reported to be shipping 2,500 tons of iron ore daily from the Vulcan mine near Kelso in San Bernardino County, California. The ore is shipped 197 miles to the new steel plant at Fontana, California, recently put into operation by the Kaiser concern. At present, a crew of 125 men is being em-

ployed at the Vulcan. Work is directed by Robert E. Tally, superintendent. Henry J. Kaiser, Latham Square Building, Oakland, California, is president of the Kaiser concern and George Havas is chief engineer.

The Yuba Consolidated Gold Fields, Ltd., has declared a dividend of 5 cents a share payable February 1, 1943, to stockholders of record on January 13, 1943. The Yuba concern recently was granted special permission by the Board of Appeals of the War Production Board to continue operation of two of the company's largest dredges on the Yuba River near Hammon-ton, Yuba County, California. F. C. van Dinse, 351 California Street, San Fran-



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cisco, California, is vice-president in charge of operations for Yuba Consolidated.

According to reports, sufficient tin ore has been extracted from the **Evening Star** mine at Cima, San Bernardino County, California, to justify the immediate erection of a 50-ton reduction plant at the mine site. Orders for the mill equipment are said to have been placed with a Denver, Colorado, concern. A test shipment of ore from the mine recently was sent to the Tin Processing Corporation's smelter at Texas City, Texas, and the ore is reported to have yielded 6.25 per cent tin. The property is owned by Chicago interests.

Milling of ore, already broken, is being continued by the **Oro Fino Consolidated Mines** at is property in the Ophir mining district near Auburn, California. It is understood that the company recently was granted an extension of operations by the Board of Appeals of the War Production Board. Oro Fino has been named the purchasing agent for the Powhatan Mining Company, which has supplied technical asbestos since 1915 to the army and navy and the concern is reported to be converting its facilities for the exploration, development, and shipment of asbestos. J. C. KempvanEe, 381 Bush Street, San Francisco, California, is general manager of the Oro Fino operations and George Beck, Box 432, Auburn, is mine superintendent.

Mining of chrome deposits in the Latrobe mining district near Placerville, Eldorado County, California, is being continued by the **Trio Chrome Company**. A camp has been established, structural material for buildings has been purchased, and arrangements for large-scale production from this property are being completed by the company. The Trio Chrome concern is a subsidiary of Golden West Enterprises, Inc., which was organized recently by Walter Zimdim, formerly interested in Malayan rubber plantations and metal mining in Yugoslavia. Richard F. Herzog, 11515 Ohio Street, West Los Angeles, California, is superintendent in charge of operations at the new project. Frank L. Shaw of Los Angeles is president of Trio Chrome.

A 40-foot tunnel has been driven on the Ryan property on the Nevada County, California, side of the Bear River and about four miles from Colfax. It intersects an 18-foot ledge of ore running approximately 40 per cent manganese. There are reported to be three different ledges on the manganese property and tunnels are being run on two. When production is regularly under way it is expected that ore will be shipped to Colfax or to Bowman, California. The project is being backed by Harley A. Sill, 1011 South Figueroa Street, Los Angeles, California, and associates. William Tuttle, Emerson Apartments, Colfax, is superintendent of operations at the Ryan property.

A tramway, sawmill, and other equipment are being installed at the **Ladd** chrome mine near Hamburg, California, and construction of an access road to the property is under way. The mine is controlled by Ronald Knudsen, Warren Building, Yreka, California, and associates, who recently purchased the Little Castle Creek

mine near Dunsmuir, California. Machinery from the Little Castle Creek property was moved in to the Ladd mine. Knudsen also is interested in the Big Five claims, Del Norte County, California, and the Tangle Blue Divide and the Masterson Divide mine in the Callahan mining district of California.

According to reports, E. P. Dorr, Clark Mountain, via Nipton, California, has discovered a high-grade lead property in the Clark Mountain district of San Bernardino County, California. Preliminary investigation is said to have opened up ore which assays 487 pounds of lead per ton. It is expected that work will be started immediately, and when production is under way the ore will be shipped to a new lead mill which is being constructed near Jean, Nevada. Dorr also has a chrome property in the Providence Mountain area.

H. D. Cowden and K. W. Walters, Box 481, Fort Jones, California, are reported to be currently developing a manganese property located in the Fort Jones district of Siskiyou County, California. They formerly had been carrying on dredging operations at the **Forest Moore** placers five miles east of Happy Camp, Siskiyou County, California, but at present plans are being made to move the suction dredge to the black sand beaches of California and Oregon for the recovery of chrome values. Steve S. Green, Box 147, Happy Camp, is reported to be investigating the Del Norte and Oregon coastal beaches for Cowden and Walters.

A crew of five men is being employed to do maintenance work and keep the shaft unwatered at the **Spring Hill** mine, operations having been suspended recently. The property is located near Grass Valley in Nevada County, California, and is owned by Dorsey E. McLaughlin, 1911 Mills Tower, San Francisco, California. C. C. Cushwa, Box 1001, Grass Valley, has been superintendent in charge of operations at the Spring Hill, where a crew of 18 men formerly was being employed.

E. D. Rodgers of Santa Cruz, California, is reported to have sold his quicksilver mine in San Luis Obispo County, California, to the **Idaho Quicksilver Mining Company**. Rodgers has been operating the property for the past seven years. It is reported that he has taken out 65 flasks of quicksilver during the past eight months. Lawrence K. Regua, 536 East Valley Road, Santa Barbara, is general manager of Idaho Quicksilver.

Operations have been resumed at the **Ophir** lead mine located in the Slate Range nine miles northeast of Trona, California. The property was operated in the summer of 1942, but work was suspended in the fall of that year. It is understood that the operators plan on having a carload of commercial lead ore ready for shipment in the near future. C. O. Mittendorf, Box 321, Randsburg, California, is leasing the ground from the Engineers Exploration Company. Associated with him in the project are Dennis and Jack Garrehy and Ed Evans, all of Randsburg.

A. Godfrey Bailey, 1308 Fourth Avenue, Los Angeles, California, is reported to have taken a lease on the **Sunrise** quartz

mine, which is located at Quincy in Plumas County, California. Bailey is planning to ship four cars of iron oxide ore for use in the paint industry.

COLORADO

Four men were killed when a blast in the Kansas mine released a flood of water in the Argo tunnel. The men, Claude Alberts, Charles Bennetts, Sam Mathress, and Louis Hamilton, were employes of the California Hidden Treasure Mines Company which operates its Monmouth-Kansas property through the Argo tunnel. George E. Collins, 307 Boston Building, Denver, is manager. It is said the men failed to use the long drill steel which they had for drilling in precarious or suspected ground.

Production of the Williams Mining Company in Virginia Canyon, Clear Creek County, Colorado, is being treated in the Missouri Lake mill. Both mine and mill operations are under the management of Ed W. Westwood, Box 321, Idaho Springs. Ore values are in gold and silver.

Work on the seventh level of the Stanley mine was abandoned temporarily when a breakdown in the pumping system caused the newly drained level to fill with water. J. B. Furstenberg, 2711 Stout Street, Denver, Colorado, is the operator of the property which is near Idaho Springs in Clear Creek County. Work in other parts of the mine is being continued.

HOW TO TREAT THE JAP SHIFT

There's nothing new about a graveyard, lobster, or swing shift, but how about the Jap shift? That was started by some patriotic miners who got tired of seeing a few of their yellow-livered comrades lay off for no better reason than that they didn't want to go to work. Setting up their own bulletin board, these miners posted names of all those absent without good cause under the heading of "Jap Shift." It gave the self-centered boys a bit of a jar when they did get back on the job and saw just where they stood with the rest. Perhaps, because they were dropped on their heads as babies, the poor guys didn't know that each day spent off the job is a day spent with Hitler and Tojo.

The Great Grizzly Gulch group of lead-zinc mines has been reopened by O. Barlow Willmarth, the owner, of Georgetown, Colorado, with the aid of an RFC preliminary development loan. When this work is completed application will be made for a Class B loan with which to start mining after equipment has been secured. The entire tunnel has been cleaned out, a distance of 700 feet. At a point 600 feet in from the portal a raise and winze were driven by Willmarth about 20 years ago. The property is located in the West Argentine district of Clear Creek County eight miles southwest of Georgetown. Re-

habilitation work was started two months ago.

The Geary Partners, operating the Joe Reynolds mining property at Lawson, Colorado, are shipping ore to the Leadville smelter and hauling dump ore to the Huntington mill and the Ruth mill, both at Idaho Springs. The partnership, working under lease, is composed of E. H. Geary, 333 First National Bank Building, Denver, and associates.

Arrangements are reported to be under way for the installation of a milling plant at the Paymaster-Red Rose manganese property by the lessees, J. Ben Ross, 404 Heard Building, Phoenix, Arizona, and R. L. Landis, Pueblo, Colorado. The property, owned by Mrs. Arta B. Smith of Gunnison, Colorado, is located on Steuben Creek eight miles west of Gunnison. Production has been started by the present operators who took over the ground last fall.

The Denver Tunnel and other properties around Idaho Springs, Colorado, are being examined by G. H. Reece of Fort Dodge, Iowa, to determine the possibilities of working the mines and dumps for strategic minerals. Reece and his associates are reported to be ready to install milling facilities if tests warrant such action.

By April or May the new 1,000-ton plant of the Ore and Chemical Company at Leadville, Colorado, is expected to be completed and in operation. The mill, mechanical construction and design of which were done by Western-Knapp Engineering Company, will employ the MBI process, one of

How To Get The Most Out Of Your Mill

TO GET THE UTMOST EFFICIENCY FROM YOUR MILL, CHECK THE FOLLOWING POINTS:

Use as small a feed to your ball mill as you can obtain economically from your crusher. Don't try to use your ball mill as a crusher. That's not what they are designed for. Check your ball charge. See that you have the full weight of balls and use the right size. Don't use large balls with a fine feed, and vice versa. Check the density of pulp within the mill and maintain the proper consistency. Keep it as thick as possible so that every ball is coated with pulp. When you have this condition, grinding takes place at every point of contact between balls. On ores that have a tendency to slime, or where a coarse granular product is desired, this pulp density may not be desirable. Check the speed of your mill. The right speed carries

the balls to the highest point in the mill before they drop, thus insuring the maximum amount of work being done. Too slow does not lift the balls high enough; too fast carries them over the top. Don't run your mill underfed. This is like firing a cannon with half a powder charge. Keep the feed up to the maximum and keep it constant. Water must be fed constantly, too!

TO KEEP WEAR TO THE MINIMUM:

Again, watch your pulp density. Thick pulp not only gives maximum tonnage but reduces wear on liners and balls. Check your mill to see that it is level and also the pinion shaft. See that pinion gear meshes properly. Keep liner bolts tight so that they do not leak, especially on the heads where pulp can get into the bearings. Lubricate properly and systematically.

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gram on company ground. D. I. Hayes, Old National Bank Building, Spokane, is vice-president and western manager. American Zinc holdings at Metaline Falls, Washington, include the Metaline Mining and Leasing ground, Grandview, and the Troyer-Davenport claims.

A crew of 23 men is employed by the Kromona Mines Corporation at its Sunset and Kromona mines near Index in Snohomish County, Washington, production being in copper, silver, and gold. J. F. Krom, Lloyd Building, Seattle, is president and Frederic Keffer, 222 Peyton Building, Spokane, is consulting engineer and in charge of operations.

The Kaaba-Texas Mining Company has started its new 200-ton flotation plant at Nighthawk, Washington, and will soon be in regular production. Lee B. Carroll of Nighthawk is secretary-treasurer and general manager. The staff at Nighthawk includes Fay J. Jeffrey, mill superintendent; Archie T. McLean, mine foreman; and L. E. Haybarker, master mechanic. Twenty men are employed.

An extensive diamond drilling program is being instituted by the U. S. Bureau of Mines at three lead-zinc producing properties near Metaline Falls, Washington. Contracts have been let for drilling on a three-shift daily basis in the Pend Oreille Mines and Metals Company's property, the Metaline Mining and Leasing ground, and the Grandview mines. The latter two groups of mines are being worked by the American Zinc, Lead and Smelting Company. L. P. Larsen, Old National Building, Spokane, is president and general manager of the Pend Oreille concern and D. I. Hayes, Old National Building, Spokane, is vice-president and western manager for the American Zinc interests.

WYOMING

With the completion of access roads into the district, the Keahy-Brown Company has started shipments of tungsten ore from its holdings in the Owl Creek Range north of Bonneville and Shoshoni, Wyoming, in Fremont County. John M. Keahy of Buffalo, Wyoming, is manager of the property.

\$25,000 CEILINGS

Here is a puzzler for Henry Morgenthau. His boss, Franklin D. Roosevelt, is the only employe on his payroll whose salary exceeds \$67,200, the theoretical limit which a person can get to net the ceiling of \$25,000. He can't lop off the \$7,800 that sticks out, because there is a law forbidding reduction of anyone's pay during term of office set by election. Though the President issued the ceiling order himself, it is not a law and does not, therefore, supersede the existing law. F. D. R. will be paid his full \$75,000. If he chooses to rebate any to the Treasury, the amount will be sent to the conscience fund—there is no other repository for it. It isn't a fine, it isn't a tax, and the Treasury doesn't accept donations.

HOWE SOUND'S CHELAN UNIT STARTS ZINC PRODUCTION

THE Chelan Division of the Howe Sound Company at Holden, Washington, started the production of zinc in January. By the latter part of 1942, research having disclosed that zinc concentrates could be recovered commercially from mill tailings if the premium price could be received for the zinc, the company had applied for and obtained permission to receive the higher price for its zinc. Flotation cells were added to the circuit and tried out during December, and the first zinc concentrates were sent to the Sullivan Mining Company's plant at Kellogg, Idaho, in January. It is estimated that zinc production will average 8 to 10 tons of zinc daily.

Copper production runs about 25 tons of copper daily from a mine production of 2,150 tons of ore. Last fall, starting late in September, the underground crew of miners dropped to an average of 115 men. Mine tonnage was maintained from previously developed blocks of ore, but development work had dropped to a dangerously low level. On November 1 the company received 55 furloughed soldiers and later built the crew up to nearly 200. About 25 more men are needed to insure that development work is maintained ahead of production. The entire property is being operated 13 out of 14 days.

The terms of the company's labor contract called for renewal of discussions during December and wage adjustments effective January 1, 1943. Meetings were held and an agreement reached by the company and union to present a joint application to the NWLB requesting a general raise of \$1.00 a day for all union members in order to equalize the wages paid with those paid in nearby mining districts. The application was filed on December 21, but no decision has been received.

John J. Curzon of Holden is manager of the Chelan operations and H. A. Pearse, Holden, is mill superintendent.

NOT ALL SOLDIERS CARRY GUNS SOME ARE PASSING AMMUNITION

THE "E" pennant, joint award of the Army and the Navy, was presented to the Great Falls, Montana, and Anaconda, Montana, reduction departments of the Anaconda Copper Mining Company. The East Helena slag treating plant, as a branch of the Great Falls department, participated in the ceremonies at Great Falls.

At Anaconda the presentation was made January 28, with Colonel Lloyd T. Jones, representing the Army and Commander Bert H. Creighton representing the Navy. Men and women in the company's employ for 40 years or more sat on the stage and received special tribute for having given their best efforts in the production of war material during two wars. They numbered 105. Governor Sam C. Ford was master of ceremonies.

Similar ceremonies were held January 29 at Great Falls, with between 15 and 18 old employes on the platform. Official representatives were present from the East Helena slag plant. Howard A. Johnson, chief justice of the Montana supreme court, was master of ceremonies at Great Falls. At both meetings, D. M. Kelly of Butte, vice-president in charge of western operations, represented the company. C. F. Kelley of New York, Anaconda's president, was unable to attend and expressed keen regrets that business pressure made it impossible for him to leave the east at that time.

These three plants now fly the coveted "E" pennant and each employe wears the "E" lapel pin for "high achievement" on a fighting front.

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**GOLD AND SILVER
PRODUCTION FIGURES FOR 1942**

(Continued from Page 7)

Cactus Mines Company and the Golden Queen Mining Company were leading producers. Other large operators were the Lava Cap Gold Mining Corporation, Empire Star Mines Company, Ltd., and the Idaho Maryland Mines Corporation, in the Grass Valley-Nevada City district, Nevada County, producing silver as a by-product from gold ores; Shoshone Mines, Inc., Resting Springs district, Inyo County; and United States Vanadium Corporation (Pine Creek tungsten operation), in Bishop Creek district, Inyo County.

COLORADO

The production of recoverable silver in Colorado was 3,073,140 fine ounces in 1942, a decrease of 4,228,557 fine ounces from 1941. Mineral County, second-largest producer in Colorado in 1941, attained the lead position from Eagle County in 1942 by virtue of the further curtailing of production of copper-iron-silver-gold ore in favor of zinc-lead ore by the New Jersey Zinc Company's Empire Zinc Division from its Eagle mine at Gilman, Eagle County. Mineral County production of silver in 1942 was 823,726 fine ounces (27 per cent of the state total) while Eagle County 1942 silver production was 353,219 fine ounces, a 92 per cent decrease from 1941. Silver was produced from virtually every lode-mining county in Colorado. The counties producing over 100,000 fine ounces of silver were in order of output: Mineral, San Juan, Eagle, San Miguel, Pitkin, Lake, Clear Creek, Ouray, and Dolores.

IDAHO

The output of silver from Idaho, the largest silver-producing state, was 14,200,020 fine ounces of recoverable silver in 1942, a decrease of 2,472,390 ounces (15 per cent) from 1941. A 35 per cent decrease in production from the Sunshine mine (second-largest silver producer in the United States) and a decrease from the Morning and Polaris mines account largely for the state decrease. Following the Sunshine, other large producers of silver in Idaho in 1942 were the Mineral Point (Coeur d'Alene Mines Corporation), Bunker Hill & Sullivan, Hecla, Polaris, Morning, Triumph, Page, Sherman, Star, De Lamar Milling Corporation and Tamarack and Custer mines, all in the Coeur d'Alene region except the Triumph (near Hailey), and the De Lamar Milling Corporation (at De Lamar). About 51 per cent of the silver produced in the state in 1942 was from silver ore and the remainder largely from zinc-lead ore.

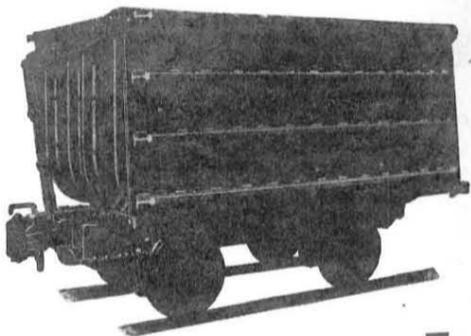
MONTANA

Montana held second place in silver output in the United States in 1942, producing 11,450,025 fine ounces of recoverable silver. However, the 1942 production was 36,900 fine ounces less than 1941, a result chiefly due to the suspension of operations in May of nearly all the zinc mines of the Anaconda Copper Mining Company at Butte. Mines in the Butte district pro-

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duced about 8,100,000 fine ounces of silver in 1942, or about 79 per cent of the state total, and earned for the Anaconda Copper Mining Company the title of the largest silver producer in the United States. Silver in concentrates from copper ore and from zinc-lead ore accounted for about 56 and 20 per cent, respectively, of the state output in 1942.

NEVADA

The output of recoverable silver in Nevada in 1942 was 3,809,000 fine ounces, a decrease of 2,021,238 ounces from 1941. Preliminary figures indicate that every one of the 10 leading silver mines in 1941 had a smaller output in 1942; even those that produced silver as a by-product of copper, lead, and zinc failed to maintain output at the 1941 rate. Desert Silver, Inc., treating silver ore from the Nivloc mine in the Silver Peak district, Esmeralda County, was Nevada's largest silver producer for the fifth consecutive year. Other large silver producers in the state include: Nevada Consolidated Copper Corporation and Consolidated Coppermines Corporation (and its lessees), in White Pine County; Tonopah Mining Company, Nye County; Summit King Mines, Ltd., Churchill County; Bristol Silver Mines Company, Lincoln County; and Sutro Tunnel Coalition, Inc., Consolidated Chollar Gould & Savage Mining Company, and Dayton Consolidated Mines Company, in Storey County.

NEW MEXICO

In New Mexico the production of recoverable silver was 667,316 fine ounces in 1942, a decrease of 661,001 ounces from 1941. The Black Hawk Consolidated Mines Company, treating gold-silver ore in the Mogollon district, Catron County, was again the principal producer of silver in the state, although it closed in June 1942. Other important producers of silver in New Mexico in 1942 include: American Smelting & Refining Company, (silver a by-product of zinc-lead mining) and the Nevada Consolidated Copper Corporation (silver a by-product of copper mining), both in the Central district, Grant County.

OREGON

The recoverable silver output of Oregon in 1942 was 80,000 fine ounces, a decrease of 196,158 ounces (71 per cent) from 1941, due largely to the suspension during 1941 of operations at the Cornucopia mine



in Baker County and the Bellevue and Cougar Independence mines in Grant County. The total output for the state in 1942 was less than the 1941 output of Oregon's leading silver mine—the Oregon King in Jefferson County.

SOUTH DAKOTA

South Dakota, one of the few states to show an increase in silver production, produced 186,427 fine ounces of recoverable silver in 1942, all a by-product of gold mining. This is an increase of 15,656 fine ounces, due largely to an increase in silver output from the Bald Mountain Mining Company mines near Trojan, Lawrence County.

TEXAS

Texas produced about 790,406 fine ounces of recoverable silver in 1942, a decrease of 305,621 fine ounces from 1941, due largely to the cessation of all operations in September by the American Metal Company of Texas at its Presidio mine, Presidio County, the largest silver mine in the state. Mines in Hudspeth and Culberson counties produced a small amount of silver from silver and copper-silver ores.

UTAH

Utah produced 10,450,035 fine ounces of recoverable silver in 1942, a decrease of 945,450 fine ounces from 1941. The output from the Bingham district increased 490,171 ounces over 1941, but it was still insufficient to off-set the losses in the Park City region and the Tintic district. In order of rank the Utah Copper Company and the United States Smelting Refining and Mining Company (United States and Lark property), both in the Bingham district, the Tintic Standard Mining Company, in the Tintic district, and the Silver King Coalition, in the Park City region, were the four largest silver producers in the state in 1942. Other large producers of silver in 1942 were the Park City Con-

solidated Mines Company (closed in October 1942), New Park Mining Company, and Park Utah Consolidated Mines Company, in the Park City region, and the Calumet mine, in Tooele County. These eight properties produced about 82 per cent of the state total.

WASHINGTON

In 1942 Washington produced 368,010 fine ounces of recoverable silver, a decrease of 34,020 fine ounces from 1941. The Holden property of the Howe Sound Company in Chelan County, with a decreased production, remained the largest silver producer in the state (47 per cent of the state total). The Knob Hill Mines, Inc., second in production of silver in Washington in 1942, operated its Knob Hill and Mountain Lion groups in the Republic district, Ferry County, and produced about 39 per cent of the state silver. Other important silver producers in the state were the Aurum Mining Company and the Eureka Mining & Milling Company, both in the Republic district, Ferry County. Copper ore yielded 48 per cent of the state total, siliceous ore 44 per cent, and zinc-lead and lead ore 8 per cent.

WYOMING

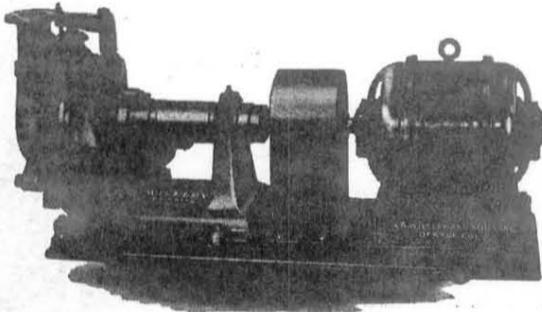
In 1942 there were 60 fine ounces of recoverable silver produced in Wyoming, chiefly from gold lode and placer mines.

MINERAL CHIEF MINE BEING RETURNED TO PRODUCTION

THE Mineral Chief lead and zinc mine near Georgetown, Colorado, is being put into condition for early production by Leslie R. Saunders of 1531 Sherman Street, Denver. Since work was started in the middle of last November, the mine road has been conditioned, two portals reconstructed, and the fifth level has been cleared for a distance of 900 feet. The sixth level is now open for several hundred feet and preparations have been made for opening the Mineral Chief vein through the Moline tunnel, which is 280 feet vertically below the sixth level.

Considerable work was done on this property in the early days. At one time it was rated a silver prospect, but it did not live up to the reputation of Georgetown in that respect. As lead-zinc ore without silver formerly was not profitable, the large Mineral Chief ore body has remained nearly intact.

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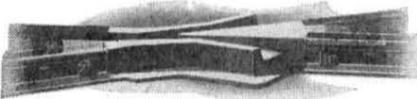
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**FOUR CORNERS AREA TURNS
FROM FARMS TO VANADIUM**

SOUTHWESTERN Colorado and southeastern Utah, formerly a small farming area, now hum with the activities surrounding the production of vanadium. On both sides of the line men are employed in mining, trucking, and concentrating vanadium ores. On the Colorado side of the line are located the numerous projects of the U. S. Vanadium Corporation. At Uravan are the company's vanadium mines and 250-ton mill. In connection with the mill is the 50-ton uranium unit, which recovers uranium values from the tailings of the vanadium plant. The company also operates its own salt and coal mines, trucking salt and coal to Uravan where they are used in the recovery process. U. S. Vanadium is operating a new 75-ton custom plant at Durango, and construction of a 50-ton plant at Grand Junction is expected to be started this spring.

On the Utah side of the line the company operates a grinding and sampling plant near Moab, acting as agent for the Metals Reserve Company, and a stockpile where vanadium ore is purchased has been established at Thompsons. Again as agent for the Metals Reserve Company, the company is completing construction of a 100-ton metallurgical plant at Salt Lake City, designed to treat tungsten flotation concentrates and middlings.

The second large operator on the Colorado side is the Vanadium Corporation of America. Besides its extensive tungsten operations in Boulder County in the north central part of Colorado, the company operates a 75-ton vanadium mill at Naturita in Montrose County and mines near Placerville in San Miguel County about 45 miles away. In Utah, the Vanadium Corporation is operating a vanadium plant at Monticello. The rated capacity of the mill is 100 tons a day, but as high as 120 tons can be treated. Mill feed comes from a number of mines in southern Utah and Colorado and in northern Arizona and New Mexico.

Smaller, but no less steady in their production of vanadium, are the Blanding Mines Company of Blanding, Utah, and the North Continent Mines, Inc., at Cedar in San Miguel County, Colorado. The Blanding concern recently resumed production of vanadium concentrate in its new and enlarged plant. When mine production exceeds mill capacity, the excess, along with fused vanadium oxide, is sold to the Vanadium Corporation of America. The North Continent company continues its steady operation of the Slick Rock vanadium mine and mill in the Cedar district.

Besides the large organizations, many individuals and groups are active in the district, both mining and prospecting for the war-necessary vanadium ores. The Gateway Alloys Mill Company, which has been operating a 10-ton vanadium plant at Gateway, is enlarging the capacity of its mill. Metals Reserve ore-receiving stations have been established at Grand Junction, Dove Creek, and Durango in Colorado, and at Thompsons, Moab, and Monticello in Utah.

When vanadium production of the region was first gaining its full impetus, operators

**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 |
|----------|-----------------------------------|-----------------------------|------------------------------|-------------------------------|
| 1912 | 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 | 18.57 | 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 | 6.08 | 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 | 7.23 | 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 | 4.90 | 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 |
| 1942 | 12.00 | 6.481 | 8.25 | 38.333 |
| 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 |
| June | 12.00 | 6.50 | 8.25 | 35.13 |
| July | 12.00 | 6.50 | 8.25 | 35.13 |
| Aug. | 12.00 | 6.50 | 8.25 | 35.13 |
| Sept. | 12.00 | 6.50 | 8.25 | 44.75 |
| Oct. | 12.00 | 6.50 | 8.25 | 44.75 |
| Nov. | 12.00 | 6.50 | 8.25 | 44.75 |
| Dec. | 12.00 | 6.50 | 8.25 | 44.75 |
| Av. 1942 | 12.00 | 6.481 | 8.25 | 38.333 |
| 1943 | | | | |
| Jan. | 12.00 | 6.50 | 8.25 | 44.75 |

were hampered by lack of roads. The stage was set to work on marginal ores, hitherto sub-commercial, but the roads in the area were few and poor. The federal bureau of roads allocated \$500,000 to be spent on improving the main arterial highways serving concentrating plants in southwestern Colorado. Improvements consisted mainly of gravel surfacing and the installation of drainage facilities. The grazing department then authorized the building of access roads. With this increase in mining and milling, came the inevitable shortage of housing facilities. The federal housing authority has taken steps to correct this matter, housing projects being under way at the present time.

**CALIFORNIA MINERAL
PRODUCTION ANNOUNCED**

THE California Division of Mines, Department of Natural Resources, under the direction of Walter W. Bradley, state mineralogist, has estimated that the total value of the mineral production of California for the year 1942 amounted to \$379,483,000. This total includes petroleum, natural gas, and structural materials, and represents an increase of approximately \$5,157,000 over the 1941 total value. Of the total value for this year it is estimated that \$29,785,000 represents gold; \$908,000, silver; and \$11,854,000, other metals, including chromite, copper, iron ore, lead, manganese ore, molybdenum ore, platinum group metals, quicksilver, tungsten ore, and zinc. Gold production decreased 40 per cent.

BANKRUPT

AUCTION

By Order United States District Court

Hon. Hugh L. Dickson, Referee

E. A. Lynch, Trustee

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Denver Duplex Classifier driven by 5 h.p. U. S. Motor.

Sebastian Lathe—8 ft. Bed with Steady Rest Guide and Chuck. Complete with ½ h.p. Sterling Motor.

4 Kohler Redentric Diaphragm Pumps.

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Gardner Denver Stoper—Model R-91-SIC.

Cochise Jackhammer No. 567.

Cochise Stoper No. 475 (New).

Kohler 4x5 Ball Mill with Extra Pinion Gear driven by 50/20 h.p. G.E. Induction Motor with 7 Groove Steel Pulleys, V-Belts.

Approx. 35-Ton Steel and Manganese Balls, 3"x4".

Westinghouse Generator—125 K.V.A. direct connected with Exciter Switch Panel with Switches, Etc. 12 Groove Pulleys, 12 V-Belts.

4 Welded Steel Thickener Tanks 8x20, Equipped with 4 Kohler Thickener Mechanisms mounted on Steel Superstructure, driven by 2 h.p. U. S. Syncrogear Motors.

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Wheeling No. 2½ Jaw Crusher.

RIX 4½x4½ Air Compressor, 24x60 Air Receiver, Gauge, Safety Valve.

Shriver 16-Plate Filter Press. Size 18.

G.-E. Transformer—5 K.V.A.

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Gould ½" Centrifugal Pump.

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Double Bucket Elevator, 1 20-ft. Center, 1 35-ft. Center.

Centrifugal Water Pump with 2 H.P. U. S. Motor.

2½" Worthington Pump.

10 Pressure, Fuel, Bolted and Welded Steel Tanks
15 MOTORS—½ h.p. to 10 h.p.

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DIRECTIONS: From Los Angeles to Baker, turn left to Shoshone to Death Valley Jct. to Beatty. 100 Miles Northwest of Las Vegas; 96 Miles Southeast of Tonopah. Mill and Mine Site Directly off main paved highway.

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The Mining Journal

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PLANS ANNOUNCED FOR MINE ACCESS ROAD PROGRAM

ACCORDING to announcement by Henry S. Wright, district manager for the War Production Board, nine mine access roads in Arizona have been approved or are being constructed under a program to speed up production of strategic metals in the western states. The Arizona roads, which will give access to sources of vanadium, copper, manganese, zinc, lead, asbestos, and timber, will total 141.5 miles and will be constructed at a cost of \$240,000.

The new roads are made possible by an amendment to the Defense Highway Act of 1941, which provides \$10,000,000 for the construction, maintenance, and improvement of access roads to raw material sources when certified to the Federal Works Administration by the War Production Board.

The War Production Board recently announced the approval of approximately \$4,200,000 in access roads in six states: Arizona, California, Idaho, Nevada, Oregon, and Washington. Fourteen of the roads approved for the west already have been completed, and work is being started on as many of the other road projects as weather conditions permit.

California will have 44 access roads to facilitate shipping of chrome, copper, talc, tungsten, mercury, manganese, lead, zinc, calcite, and timber. These roads, covering 780 miles, will cost \$1,529,590. Seven have been completed. Tungsten, zinc, lead, copper, manganese, and valuable timber lands in Idaho will be developed commercially with the certification of 18 roads, covering 352 miles and costing \$759,530.

Sixteen Nevada projects include a road to open up a tin property which heretofore has not been developed commercially. Total mileage in Nevada is 261.9 to be constructed at an estimated cost of \$494,629. Oregon will have 227.4 miles of access roads, involving 18 projects and costing \$747,825. Chrome, mercury, zinc, and nickel will be hauled over the Oregon roads, although timber is the main objective. Timber, copper, magnesium, and nickel ores will be transported over six Washington roads, comprising 66.46 miles and costing \$498,259.

BULLETIN ON FLUORSPAR ISSUED BY CALIFORNIA BWMP

FLUORSPAR, a mineral of great importance in the manufacture of steel, aluminum, and 100-octane gasoline, is the topic of "Strategic Mineral Notes No. 1," which has just been released by the California Bureau of War Minerals Production. This bulletin is the first of a series of such reports on minerals which are of importance at the present time. Contained in the publication are the description, treatment, and price of fluor spar, as well as a discussion of the localities where this mineral may be found. A second report, featuring beryllium ores, also has been announced by the bureau. Both bulletins may be obtained by request to the Bureau of War Minerals Production, Room 418, State Office Building, Sacramento, California.

TUNGSTEN MILL AT EXETER BEGINS CUSTOM OPERATIONS

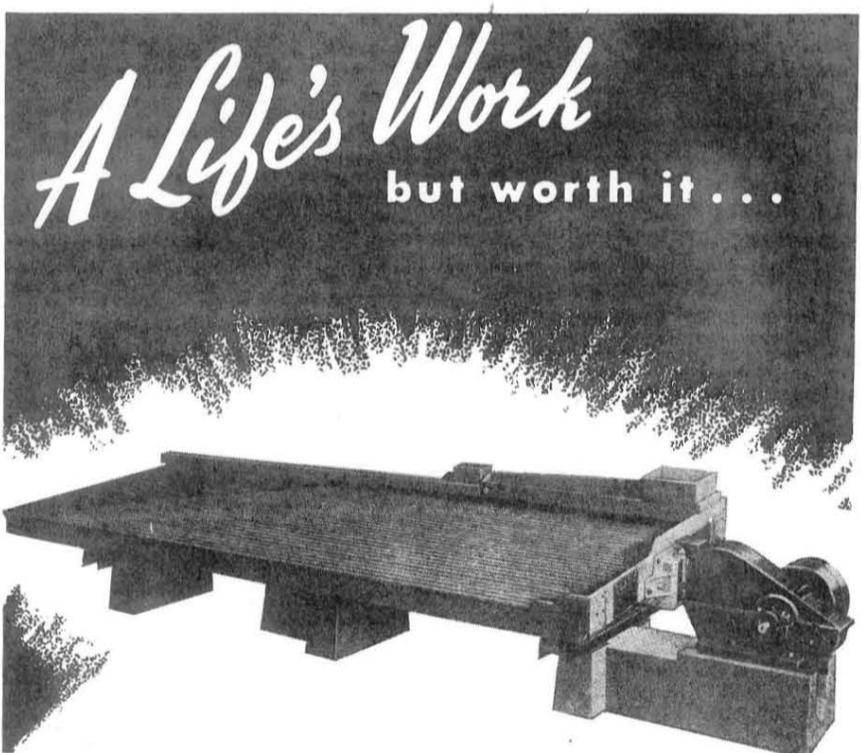
CONSTRUCTION of the new tungsten milling plant in Yokohl Valley east of Exeter, Tulare County, California, has been completed and the first lot of ore has been run through the mill. The new unit is known as the Yokohl Tungsten Mill and is being operated on a custom basis.

The plant was completed after only two months' work, much time having been saved by the fact that second-hand machinery was obtained and many parts made from materials not covered by priority regulations. Milling operations at present are being confined to the daylight hours and

it is reported that \$500 worth of concentrates are being produced at the mill daily. All tailings are being retained and will be treated in the future for values other than tungsten.

The ore for the first run came from the Floyd Carter property near Three Rivers, Tulare County, California, as well as from mining property in the Dunlap, Fresno County, area. Several other deposits of tungsten and copper have been located in the vicinity and plans are being made to treat ores from these mines as soon as they are opened up.

The Yokohl Tungsten Mill project is being backed by Mrs. Ethel Appleby and Harold Strickland, Exeter, California.



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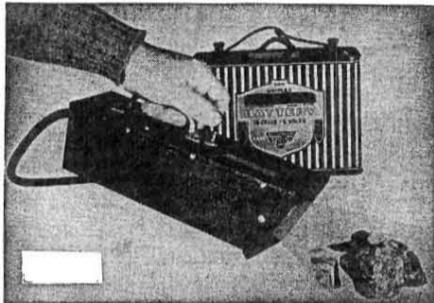


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Installation of a plant for the concentration of low-grade chrome ore is under way at the **Randolph** property near Garden Valley, Eldorado County, California. The mine was leased last December by W. J. Loring, 102 Hillmont Avenue, Auburn, California. The deposit is developed by numerous open pits and cuts and a substantial amount of ore has been stockpiled for milling. The Randolph property was operated during the last war.

H. G. Walker, Kelsey, California, is reported to be shipping tungsten concentrates to a Los Angeles, California, plant from the **Bear Creek** tungsten mine. The property is being worked under the name of the **Bear Creek Tungsten Mining Company**, with Walker as superintendent and agent for the company. The company installed a concentrator at the property last November. The Bear Creek mine was opened by two tunnels during World War I, but had been idle since then until the Bear Creek concern started development operations.

Taylor Brothers of Placerville, California, have taken a lease on the old **Larkin** mine near Diamond Springs in Eldorado County, California, and recently made application to the RFC for a \$5,000 preliminary development loan. Arrangements also are being made for installation of necessary machinery and equipment. Ore mined from the Larkin many years ago is said to have yielded 10 per cent copper, 40 per cent sulphur, and some gold and silver, and recent examination at the mine has disclosed commercial-grade ore in the old workings.

Development work at its copper-zinc claims near Redding in Shasta County, California, is said to be progressing satisfactorily, according to the **Newmont Mining Corporation** which acquired the property recently. Plans are being made to install a zinc concentrating plant to treat ore from this property. Charles F. Ayer is president of Newmont Mining Corporation and head offices are at 14 Wall Street, New York, New York.

The **Anaconda Copper Mining Company** is said to be developing a copper deposit in the Bully Hill district near Redding, California. The property has been idle for the past 30 years, because the large zinc content of the ore made operations unprofitable during that period. D. M. Kelly, Hennessy Building, Butte, Montana, is vice-president and in charge of western operations for Anaconda.

The Board of Appeals of the War Production Board is reported to have granted the **Natomas Company** permission to continue operation of two of its dredges for the production of gold. The WPB formerly had denied the company's original application to continue operations, and a second appeal was made. The Natomas concern owns seven dredges and had been carrying on dredging in the Folsom district of California until the recent WPB order for gold mines forced suspension of work. In addi-

tion to its dredging operations, Natomas also holds approximately 60,000 acres of agricultural lands in California. Thomas McCormack, Forum Building, Sacramento, California, is president of the company.

The **Middle Buttes Mines, Inc.**, is reported to have purchased mining property near Bakersfield in Kern County, California, from the owner, Mary N. Johnson. The sale price was \$13,000. The Middle Buttes concern operates southwest of Mojave, California.

H. A. Mulkern of Santa Monica, California, is reported to have taken over the old **Sweetwater** manganese property near Mariposa, California. Sampling and investigation of the mine have been under way for several months and it is said that an extensive body of high-grade ore has been discovered. The Sweetwater formerly was controlled by the Hudson River Gold Mines, Ltd., San Rafael, California.

The tunnel at the **Kirkpatrick** mine near Goodyears Bar, California, has been driven to a point believed to be between the channel rims, and plans are being made to run a raise from the tunnel. It is expected that gravel will be encountered at about 40 feet in the raise. When opened by the new raise the channel will be mined at a point several hundred feet south of the old workings, which were abandoned when the channel was being worked downstream as far as possible. The mine is owned by State Treasurer Charles G. Johnson, State Capitol Building, Sacramento, California. Rinaldo Daneri, Downieville, is superintendent of operations at the Kirkpatrick.

The **St. Elmo Chrome Mining Company**, Box 830, Porterville, California, has reported the completion of reconditioning on five miles of the New Idria road and the construction of a camp at its mining property 29 miles northwest of Coalinga in San Benito County, California. One tunnel has been driven on a manganese-bearing vein and another has been started on a three-foot vein with values in copper and zinc. It is expected that high-grade ore will be hauled to Coalinga by truck through Los Gatos Canyon and shipped from there via the Southern Pacific to the Metals Reserve Company's stockpile at Tracy, California. St. Elmo Chrome is a newly organized concern and is leasing the property from N. E. Sczaghini, Coalinga. L. D. Flory of Route 2, Porterville, is president of the company. E. J. Heiner, 444 Vassar Avenue, Fresno, California, is general manager. Andrew Thickstun, Box 1472, Fresno, is consulting engineer and A. R. Addington, 1536 College Avenue, Fresno, is consulting geologist. Six men are being employed.

The **Lava Cap Gold Mining Corporation** is reported to be producing 25 tons of arsenic monthly in addition to its regular production of gold and silver ore and iron sulphides, which are being shipped to the American Smelting and Refining Company's Selby smelter for fluxing purposes. The ores come from the Lava Cap holdings in Nevada County, California. It is understood that the sinking of the Central mine shaft another 400 feet, from the 2,700 to the 3,100-foot levels, has been started. Two new levels will be established

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at 2,900 and 3,100 feet. About 400 tons of ore are being milled daily by Lava Cap. A crew of 325 men is being employed, under the direction of Otto E. Schiffner, Nevada City, California, general manager.

A maintenance crew of six men is being employed by the **Ancho-Erie Mining Company** at its mining operations near Graniteville in Nevada County, California. The men are engaged at present in the lower tunnel, where a good showing has been reported. The snowfall in the district has been heavy, but work is being continued on the Poorman's Creek road so that access to the mine may be gained via Washington, California. The company recently was allowed a six-month extension for further work at the mine. Fred Anderson, Grass Valley, California, is superintendent of operations. C. A. Helbach, 370 Alta Street, Grass Valley, is president of Ancho-Erie.

The **Mineral Materials Company** of Los Angeles, California, was recently reported to have made its first shipment to the Phoenix, Arizona, stockpile, and is maintaining production at the rate of one car of ore per week. The ore is coming from the company's **Stewart manganese claims**, which are located about 45 miles south of Needles in the Whipple Mountains in San Bernardino County, California. E. S. Rust, the company's engineer, has been on the property for several weeks directing the preliminary development operations. It is understood that about 12 miles of road have been completed to connect the claims with the county road, and a loading camp has been constructed on the Santa Fe Railroad siding. Clair W. Dunton, 1182 Masselin Avenue, Los Angeles, California, is general manager for Mineral Materials.

Operations under way at the **Polar Star** claims include surface trenching, and drifting and sinking on the ore body, and diamond drilling is being continued to determine the extent of the deposit. The quick-silver property is located in San Luis Obispo County, California, and recently was acquired under lease with option to purchase by Lawrence K. Requa, Box 550, Weiser, Idaho. A crew of six men is employed at the Polar Star at present.

The **Big Bear, Ltd., Inc.**, which recently suspended operations at the old **Lucky Baldwin** mine for the duration of the war, is reported to have established new headquarters at the Citizens National Bank Building, San Bernardino, California. F. M. Watkins, Box 4, Lost Hills, California, is president and general manager of the Big Bear concern. The Lucky Baldwin is located near Lake Baldwin in San Bernardino County, California.

The **Smith and Notterman Company** is reported to have moved its offices to 764 Base Line, San Bernardino, California. The company formerly operated a dragline dredge near Linden, California.

The Bureau of Mines is reported to be carrying on a diamond drilling program at the **Copper Hill** mine located north of Copperopolis in Calaveras County, California. The property comprises 2,500 acres and is owned by W. T. Detert of Jackson, California.



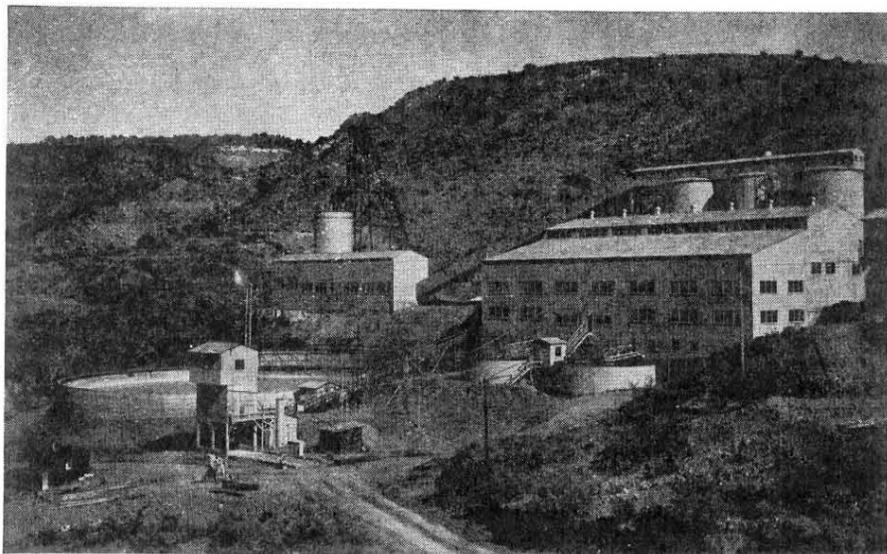
The **National Lead Company**, 111 Broadway, New York, has declared a regular quarterly dividend of \$1.75 a share on the Class A preferred, payable March 15 to stockholders of record February 26, 1943.

A new concern, the **Victory Metals, Ltd.**, has been organized to operate the **Bullion** mine west of Central City in Gilpin County, Colorado. The shaft is being reopened and a hoist and compressor have been installed to facilitate sinking operations. The shaft is to be put down to the Bullion No. 2 vein

which has a good lead-zinc production record from shallow workings. Officers of the new company are William O. Ziege, Roy G. Olson, and Clifford I. Parsons of Central City.

The **Meeker** mine in lower Russell Gulch, Gilpin County, Colorado, is being operated by E. G. Fye, Jr., General Delivery, Denver, and associates. Owned by Fred Stroehle, the mine was formerly worked for gold in the upper levels. The Fye interests are operating on the fifth level of the mine in an effort to undercut the ore body showing in the fourth. The lower levels of the property show substantial values in lead, zinc, and copper. Mining machinery, including an electric hoist, compressor, and blowers, has been installed.

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WRITE FOR BULLETIN No. 402

SOUTHWESTERN ENGINEERING CO.
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George P. Hyde, 53, of Eureka, Nevada, died in Eureka January 26, 1943. A graduate of the University of Michigan, he had worked in Detroit and in Joliet, Illinois, before he moved to the west. He became assistant superintendent of the El Paso, Texas, smelter for the American Smelting and Refining Company and superintendent of the plant at Los Cerillos, New Mexico. In 1904 he went to Sonora, Mexico, as superintendent for a smelter. Later, in 1922, he joined the staff of the Eureka Croesus Mining Company at Eureka and had made Eureka his home until his death.

SHELTON G. DOWELL.

SHELTON G. DOWELL, prominent businessman as well as a civic and political leader of Douglas, Arizona, died at Luling, Texas, February 27, 1943. He was 62 years old. Dowell had been in poor health for the past few years, and went to his former home in Luling, two months ago in the hope of improving his condition.

Dowell established his home in Douglas 40 years ago and for many years was engaged in the lumber business in Arizona. Later, he became manager for the Arizona Gypsum Plaster Company, a position he held until the time of his death.

Dowell formerly was a member of the board of governors of the Arizona Department of Mineral Resources, and had served as chairman of the Arizona Highway Commission. At one time he was a city councilman and mayor of Douglas and chairman of the Cochise County Democratic Central Committee.

ORE TAX REDUCTION AGAIN DEFEATED IN SOUTH DAKOTA

ANOTHER effort to reduce the ore tax in South Dakota failed when the House of Representatives voted 41 to 32 against the reduction measure. H. M. Stewart, state mine inspector, and Harlan J. Bushfield, former governor of South Dakota, supported the bill which had been sponsored by Representative John Mayo of Lead. A reduction from 6 to 2 per cent had been asked by the Homestake Mining Company of Lead, but the house committee changed it to a reduction from 6 to 4 per cent.

The ore tax has been a controversial subject in the South Dakota legislature for several terms. The law was first enacted at 4 per cent and in 1937 the rate was increased to 6 per cent. In 1941 an attempt to reduce the tax to 4 per cent also failed. The mining interests which are trying to secure a reduction in the tax charge that it has had a tendency to keep mining capital out of the state. Now it is bringing undue hardship to the gold mines of the Black Hills. The mines, Mayo says, have been ordered to cease gold-mining operations by the WPB, but costs running into millions will continue during the shutdown. In answer to the farmers' charge that Homestake has been making high profits for out-of-state stockholders using South Dakota resources, Mayo states that the resources would be worthless without development and that the 6 per cent ore tax is unprecedented in mining laws of any state.

MENDENHALL RETIRES FROM GEOLOGICAL SURVEY STAFF

WALTER C. MENDENHALL retired as director of the Geological Survey on February 27 after having served as a scientist in the survey for 48 years, 5 months, and six days. Dr. Julian D. Sears, administrative geologist, has replaced him temporarily as acting director.

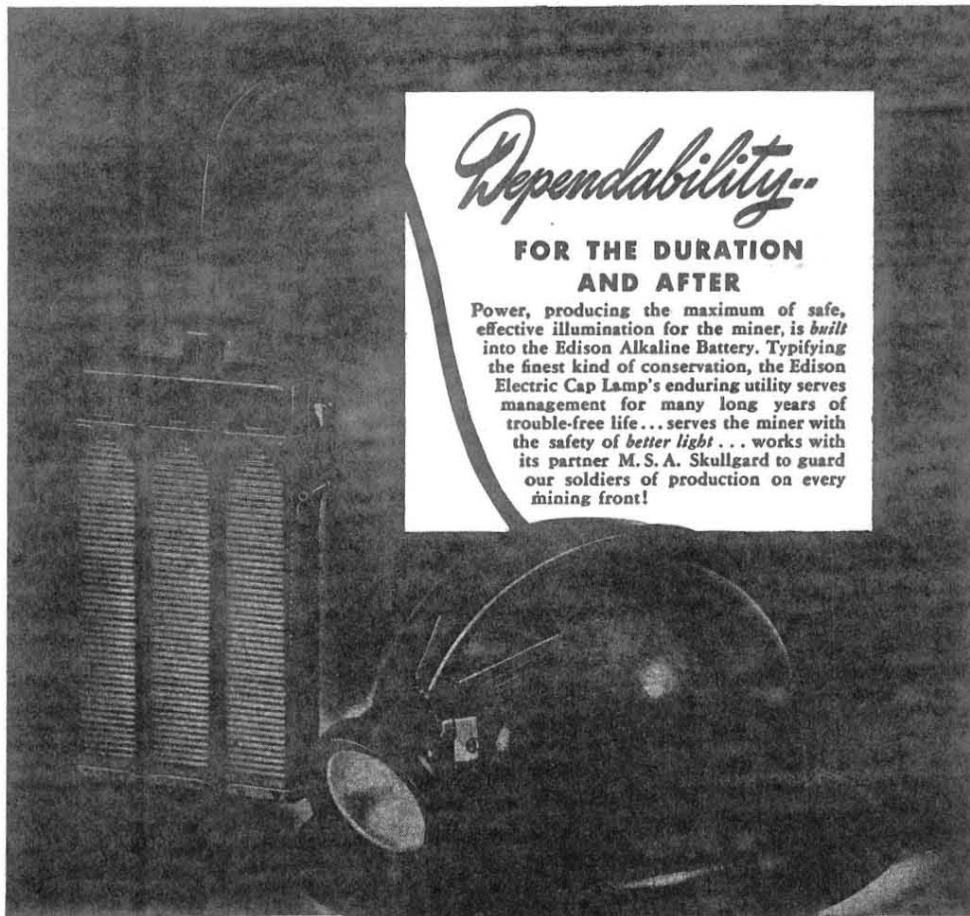
Beginning in 1892, while still in college, as a teamster for a survey field party at \$40 a month, Mendenhall remained to serve in four of the survey's five branches, to head two of them, and finally to become director in 1931. He worked under three survey directors and 14 secretaries of the interior, carried out assignments in many of the eastern and nearly all the western

states and in Alaska and the Hawaiian Islands. He was twice exempted by President Roosevelt for one year each from compulsory retirement for age after he was 70 years old.

Concerning Mendenhall's retirement, Secretary of the Interior Ickes said:

"I deeply regret the loss of Mendenhall's services. He is a talented geologist and administrator. However, he has earned a rest and I wish him happy days. He will have no occasion to feel useless in his retirement, because his government will continue to make important use of work which he did as early as 40 years ago and as late as yesterday."

Mendenhall was born at Marlboro, Ohio, February 20, 1871. He was educated in



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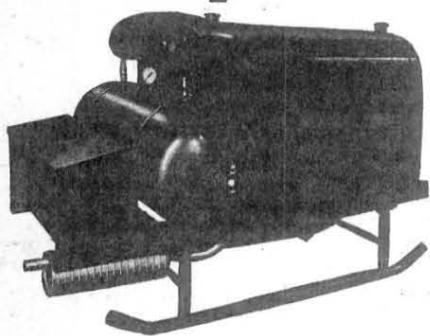
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the grade schools of Ohio, at Portland (Oregon) High School, and at Ohio Northern University (then Ohio Normal University) at Ada, Ohio, from which he was graduated with the degree of B.S. in 1895. He interrupted his professional career to study a year each at Harvard University and at Heidelberg. He has been awarded honorary degrees of D. Sc. by Colorado School of Mines and the University of Wisconsin.

ERNEST STEIN RECEIVES APPOINTMENT WITH MRC

ERNEST STEIN, Calle Juarez No. 203 Sur, Durango, Durango, Mexico, recently was appointed by the tin procurement branch of the Metals Reserve Company as its exclusive agent in the State of Durango, Mexico. His work will consist mainly of sampling and assaying ore which is shipped to the Tin Processing Corporation's smelter at Texas City, Texas, by miners in the Durango mining district.

In connection with this program to increase the production of tin in the Durango area, it is reported that there are four tin concentration mills in the process of construction near Durango, and machinery is being moved in to make possible further development of tin mines in the district. One of the mills is being constructed at the Diablo mine, while another is being built at the Rio Verde property. A third tin concentration plant is under construction near Canatlan north of Durango. All three of these mills will have a daily capacity of 50 tons of ore. The fourth mill will have a 25-ton capacity and is being installed within Durango's city limits. It is expected that the new milling plants will treat ores running about 2 per cent tin to produce concentrates assaying between 40 and 65 per cent tin.

GOLDEN CYCLE ORE BUYING REGULATIONS ANNOUNCED

THE Golden Cycle Corporation has announced the regulations which will cover its purchases of gold, silver, lead, copper, and zinc ores. No concentrates are to be accepted for treatment and no payment will be made for oxidized lead, copper, or zinc content. All new shippers, exclusive of those in the Cripple Creek district, and all shippers whose ore changes in character, or those who move from one mine to another, must send, charges prepaid, a five-pound sample for testing purposes before shipments are consigned. No shipment should be made to the Golden Cycle plant until the company advises that the ore is acceptable. Weighing and sampling of any shipment may be done at the plant, but shippers must pay for these services direct. No deductions for such services will be made on ore settlements.

The treatment rates are: Base charge, \$2.25 per ton, dry weight, when payment does not exceed \$5 a ton; over \$5 a ton, add to base charge 20 per cent of excess over \$5 a ton to a maximum rate of \$6.25 a ton. Minimum treatment charge on shipments of less than one ton is the same as charged for one ton.

Additional charges are 50 cents a ton on all truck shipments; \$5 for sampling all

shipments containing less than 10 tons, dry weight; when umpiring or check assaying is done, shipper must pay expense; \$2.50 per lot for each lot when more than one lot is shipped in a car; 10 cents a ton if ore is sacked; 10 cents per ton if ore is received frozen; 5 cents per ton for each 1 per cent moisture in excess of 10 per cent. Minimum moisture deduction is 1 per cent. These rates are exclusive of freight rates and are subject to change without notice.

USE OF DOMESTIC SILVER FOR CIVILIAN GOODS IS RESTRICTED

RESTRICTIONS on the use of domestic silver in the manufacture of non-essential civilian products have been established with the issuance of an amendment of Conservation Order M-199, which has previously regulated the use of foreign silver.

A special exemption is provided in the amended version of the order for the benefit of small manufacturing firms that cannot be converted to war production because of limited facilities.

Firms entitled to exemption are those employing not more than five persons, each of whom is either over the age of 50 years or physically incapacitated for the performance of ordinary factory labor. However, the manufacturer must have engaged in silver manufacturing throughout 1941, and his gross sales in that year must have been below \$25,000. Sales of such a manufacturer in 1943 or any succeeding calendar year must not exceed \$35,000.

Any firm or person who manufactures jewelry by the use of hand tools exclusively is also exempted.

The order was amended in anticipation of an increased consumption of silver in the war program. The purpose of the amendment is twofold. It is designed to conserve supplies of domestic silver, and to restrict the consumption of the metal in nonessential manufacture.

The amended order restricts the use of domestic silver by nonessential industry to one-half the amount used in 1941 or 1942. These were peak years for the silver products industry. In determining his individual quotas, a manufacturer may choose as a base period either 1941 or 1942, whichever was the better year in respect to the amount of silver put into process by him for restricted uses (as defined in the order).

The WPB hopes the amended order will result in conserving some 25 million ounces of an estimated 1943 production of newly mined domestic silver totaling 45 to 50 million ounces.

Approximately two-thirds of the supply of new silver is of foreign origin, produced principally in the western hemisphere. The current price for this silver is 45 cents per ounce. About one-third of the new supply emanates from domestic production. This metal formerly was purchased by the United States Mint. Since last September, however, virtually all domestic silver has been flowing into non-essential industrial use at 71.11 cents per ounce.

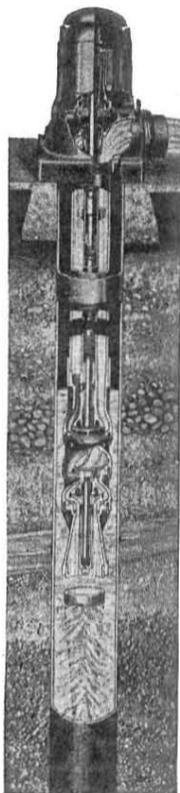
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in the Globe or Copper Hill mining district of Gila County, Arizona. The shaft has been sunk to a depth of 30 feet and it is planned to continue sinking and drifting operations. Ores have assayed from 37 to 40 per cent manganese. Four men are working under the direction of Al Stoval and Thomas J. Long, Drawer 2093, Globe, Arizona, lessees.

Three men are being employed in the production of 10 tons of manganese ore daily at the Globe manganese mine about six miles northeast of Globe in Gila County, Arizona. A shaft is being sunk and it is planned to run a drift on the six-foot vein. Thomas J. Long, Drawer 2093, Globe, is owner of the property.



G. M. Trent, Auburn, California, is continuing development of ore which assays from 7 to 15 per cent zinc at the Buzzard mine nine miles east of Folsom, California. The ore also carries values in copper, lead, and some silver. In addition, Trent is completing preparations for the operation of the Valley View mine located approximately 18 miles northwest of Auburn in Placer County, California. Both properties are under lease to Trent and ores from these mines will be treated at the new 50-ton mill at the Highway 40 property, one-half mile west of Newcastle, California, which also is controlled by Trent.

Custom milling of tungsten ores is expected immediately after the completion of revamping of the Barker mill at the Gold Basin mine in the Randsburg district of California. The mill is designed to treat the soft schist ores from the district carrying values in gold and tungsten, and the rehabilitation project has been backed by the Reconstruction Finance Corporation. A headframe and hoist have been installed, an ore bin constructed, a change room built, and general reconditioning of the mine workings has been finished. Four men are working in the mine, breaking ore, and six are employed in the mill construction. Water for the mill has been obtained from the Big Butte mine in the same area and over a half-mile of pipe line has been relaid and water storage capacity increased to more than 50,000 gallons. A top capacity of 100 tons per day is expected from the new milling unit. Clarence A. Barker, 840 West Seventh Street, Los Angeles, California, is owner and operator of the Gold Basin. James B. Nossler is superintendent in charge of operations.

The American Metals Company, which has been developing an extensive zinc property in the Hornitos, California, district, is said to have optioned a milling plant from the Lind Mining Company, Phillip R. Bradley, Jr., Jamestown, California, manager. The mill formerly was used on the Jenny Lind gold property near Hornitos, and will be revamped by American Metals and equipped with concentrating units for the treatment of zinc.

Sampling of copper deposits is being continued at the Ford and Bob mines by W. Charles Donaldson, 1705 Seminary Avenue, Oakland, California. Veins worked in the Ford years ago are said to have carried from 12 to 15 per cent copper and \$30 in gold per ton. The mining property is located near Georgetown in Eldorado County, California, and is owned by Donaldson.

Milton Powell, Greenville, California, has reported the discovery of an asbestos deposit at the Gold Stripe mine located in Wolf Creek Canyon about six miles from Greenville. The property is owned by George Naseath, Greenville.

Henry H. Haun and his partner, Bob Holstrom, both of Quincy, California, are engaged in development of the Haunganese mine near Twain in Plumas County, California. A short section of road has been built and Haun is putting up a 225-foot tramway. Assays of ore from the manganese claims are said to run 50 per cent manganese. Shipping will be to the MRC stockpile at Quincy. Haun also has two other manganese claims near Twain which he will develop as soon as weather conditions permit in the spring.

The Newmont Mining Corporation declared a dividend of 37½ cents a share payable March 15 to stockholders of record February 26, 1943. Charles F. Ayer, 14 Wall Street, New York, New York, is president of Newmont.

The Argonaut Mining Company, Ltd., Jackson, California, reports a net loss of \$17,565 for 1942, comparing with a net profit of \$5,740 or 3 cents a share for the year 1941. All mining operations at the company's Argonaut mine were discontinued on March 31, 1942, but in the first quarter 18,200 tons of ore were produced. Development work at the Plymouth mining property also was suspended, but operations were continued throughout the year at the Plymouth tailings plant, with a profit of \$8,244 being reported. Alex F. Ross, Jackson, is general superintendent for Argonaut Mining and Earl M. Smith, Box 263, Jackson, is mill superintendent.

E. D. Foster, consulting attorney and engineer of 2641 West Avenue 31, Los Angeles, California, has leased the Gold Hill mine to Marty Herbs of Los Angeles. The Gold Hill adjoins the Glory-Tintic and Foster mines, located in the Shadow Mountain mining district of California. The property comprises 400 acres and it is said that lead ore of shipping grade has been developed in 12 places on the property. Herbs expects to continue development work and to make early shipments to Salt Lake City. He also has leased the camp and mill of the Glory-Tintic mine at Shadow Mountain from J. B. Marston of Ridgewood, New Jersey, and expects to adapt the flowsheet to the mill-grade ore at the Gold Hill. He will start milling ore which is already blocked out at the Gold Hill at once. The Glory-Tintic mine is reported to have been closed down for the duration of the war. Earl S. Bunting will be superintendent of operations at the Gold Hill and may be reached at the mine address at Valley Wells, via Nipton, California.

Two men are being employed at the Washington mine which is on the South Fork of the Yuba River one mile from Washington in Nevada County, California. Hydraulic operations have been carried on at the gravel property for the past 60 days. A. M. Bennett of Washington is engineer in charge of operations. The mine is owned by T. I. Moseley, 620 York Street, San Francisco, California.

Otto A. Huefner is reported to have closed down his chrome mining operations near Cecilville in Siskiyou County, California, as a result of heavy snows in the Salmon Mountains. He plans to resume work as soon as the access road is opened next spring. At present he is making headquarters at Etna, California.

The Smelters Corporation is said to have completed construction of a 25-ton trommel unit and a field concentrating unit at its tungsten operation and a preliminary run to permit adjustment of the equipment has been made. The property is located in the Stringer mining district near Atolia in San Bernardino County, California. W. B. Thurman of Lodi, California, is president of Smelters Corporation, and Grant Morton, Lodi, is engineer in charge of operations.

T. Sobrero of San Andreas, California, is planning to start prospecting at various copper properties next spring. Among the mines to be included in his examination will be the Busch and Ruby mines located in Mendocino County, California.

Development of an extensive chrome deposit is being carried on at the McGuffey Creek mine in Siskiyou County, California, by Dorothea Reddy Moroney, Yreka Inn, Yreka, California. It is reported that drilling operations have been completed by the U. S. Bureau of Mines and a road has been constructed to the mining property.

The Nevada Scheelite, Inc., is developing substantial cinnabar deposits at the Paramount No. 2 mine in the Rough Creek district northwest of Bodie, Mono County, California. The lower tunnel is being continued to reach the downward extension of a large quicksilver ore body exposed above in another tunnel. The old Paramount mine camp has been enlarged and housing accommodations have been added. The claims are part of the holdings of the Paramount Mining Corporation and are being operated by Nevada Scheelite under a lease agreement. Donald B. MacAfee, 11320 South Alameda Street, Los Angeles, California, is managing engineer for the operating company.

Erection of a large mill to concentrate chrome ore is being planned by R. T. Hamilton, 3356 Madera Avenue, Los Angeles, California, and associates when properties which they have leased in Glenn and Tehama Counties, California, provide sufficient tonnage for milling.

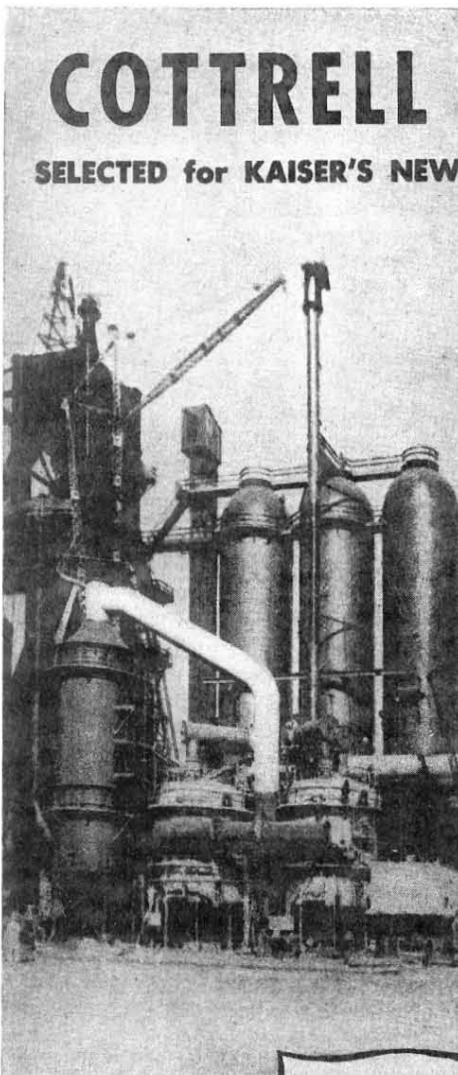
Necessary tooling and machinery are being installed at the Oro Fino Consolidated Mines plant near Auburn, California, to complete the conversion to a war manufacturing unit. It is understood that the company holds a contract to supply equipment to the U. S. Merchant Marines. Approximately 50 men will be employed in the

company's operations as soon as production is under way. Oro Fino Consolidated Mines recently was named purchasing agent for the Powhatan Mining Company, which has supplied technical asbestos to the army and navy for many years. The Oro Fino concern formerly operated gold property in the Ophir mining district near Auburn. J. C. KempvanEe, 381 Bush Street, San Francisco, California, is general manager and George Beck, Box 432, Auburn, is mine superintendent.

The Permanente Metals Corporation is reported to be producing at the rate of 4,500 tons of magnesium annually at its \$6,000,000 plant near Los Altos, California. Although this production is only one-third of that originally scheduled in 1941,

it is expected that Permanente will double present output very shortly. Henry J. Kaiser heads the Permanente Metals Corporation and headquarters are maintained at the Latham Square Building, Oakland, California.

The Pacific Tungsten Company's mine near Darwin, California, has been shut down temporarily while further development and prospecting work is being carried on. Some of the crew of 18 men will continue working at the mine, while the others will be employed at the company's Keeler mill. Work is reported to be under way on the rebuilding of the flotation mill to handle tungsten ores. E. L. Cord, 9730 Wilshire Boulevard, Beverly Hills, California, is president of Pacific Tungsten.



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Dr. John W. Ross, Merrimac Star Route, Oroville, California, has announced the discovery of a tin deposit located near Challenge in Yuba County, California. Ross has been conducting examinations of various properties throughout several counties in California for some time. Burton Jones of Durham, California, has been in charge of development work for Ross. Dr. Ross is president and general manager of the Gold Meadows Mining and Milling Company, Ltd., Merrimac Star Route, Oroville.

L. J. Rouchleau and M. Richardson of Los Angeles, California, have been awarded a \$20,000 development loan by the Reconstruction Finance Corporation for the Hidden Value mine. The property is located 45 miles west of Needles in San Bernardino County, California, and recent assays disclosed a 3 per cent tungstic acid content in the Hidden Value ore.

The United States Tungsten Corporation is reported to have purchased the Panamint City mine in the Randsburg district of Kern County, California, from the owners, Ralph and Phillip Lisle and Charles Foote. The new operators already have moved in necessary machinery and equipment, and, as soon as weather conditions permit, an extensive expansion program is planned. N. J. Elliott is the company's representative at the property. Warren T. Potter, 2632 Boulder Road, Altadena, California, is president of United States Tungsten.

Al G. Sigler of Randsburg, California, has acquired a bonded lease on two tungsten claims known as the Hawk and Hawk No. 1 from M. J. Lovett and associates, owners. The property is about six miles west of Randsburg in Kern County, California, and originally was located by Wilson Jones during the last World War. Sigler is making plans to start development operations immediately.

COLORADO

The annual report of the Cresson Consolidated Gold Mining and Milling Company shows an operating gain for 1942 of \$55,754, which compares with \$122,903 in 1941. Mining costs were \$3.11 a ton compared with \$2.88 a ton in the previous period. The gross value of ore produced during 1942 was \$1,012,168, against \$1,337,480 in 1941. Of this the company produced \$246,596 worth of \$6.18 ore and lessees mined \$654,572 worth of ore with an average gross value of \$12.48 a ton. The priority situation, labor shortage, high wages, high taxes, and other war conditions were necessarily reflected throughout the company's report. The Cresson concern, which is headed by Merrill E. Shoup, Box 86, Colorado Springs, Colorado, now is operating under a six-month permit from the WPB and hopes to get an extension when the permit expires on June 8, 1943. The company's shops are working on a few defense contracts and efforts are being made to obtain more of this kind of work.

A net income of \$7,231,396 for 1942 is reported by the New Jersey Zinc Company, 160 Front Street, New York. This amounts to \$3.68 a share and compares with \$9,592,871 or \$4.88 a share in the preceding year. In the West the company operates through its Empire Zinc Division, with holdings in Colorado and New Mexico.

The Wolf Tongue Mining Company is abandoning its Illinois and Cross tungsten properties at Nederland in Boulder County, Colorado. Machinery from both mines is being removed, but the mill will continue to operate on a one-shift basis, receiving custom ore. The Illinois, opened to the 500-foot level, has been worked continuously by the Wolf Tongue company since 1936, and the Cross, 400 feet deep, since 1940. Machinery and many of the men are being transferred to the company's Cold Spring No. 4 mine 3½ miles northeast of Nederland. William Loach, Box 25, Boulder, is vice-president and general manager.

Tungsten development is reported to be progressing in the Logan mine of the Victory Metals Company in the Crisman district near Boulder, Colorado. Seth A. Armstead of Boulder is operating the ground under lease. A large vein of tungsten ore is being opened on the 800-foot level. The property formerly was worked for gold and tungsten values which are said to be present in the old mine dumps. An 80-ton amalgamation and flotation plant is on the ground.

Harold Williams of Boulder, Colorado, and James Witcher are reported to have applied for an RFC loan for the Navy tungsten mine in the Pollock district of Summit County, Colorado. Williams and Witcher are operating the mine under lease from Ross E. Parker and W. A. Sheldon, both of Alma, who hold a government loan. The mine has been classified as a new producer by the Metals Reserve Company and as such is entitled to the new price for tungsten.

J. J. Malir, Jr., of Denver, Colorado, and George J. Davis of Boulder are reported to have leased 150 acres of fluorspar property near Jamestown, Colorado, and the Lehman fluorspar mill. The latter has been operated by the owner, Clark H. Clark of Jamestown, who operates the Nation's Treasure fluorspar mine. The plant will be enlarged to handle 50 tons of ore daily, the present capacity being 30 tons, and will produce metallurgical spar. Malir and Davis have offices with John R. Wolff in the First National Bank Building, Boulder.

Kenneth Walsh and his father Thomas M. Walsh, both of Nederland, Colorado, plan to develop the Rambler mine of the Cowdery mines in the spring, using a bulldozer. The U. S. Bureau of Mines recently completed a core drilling program which uncovered tungsten values. The Walshes are working on the Sunday mine of the group at present. A 50-foot shaft and a drift of the same length have been run to further develop a vein of tungsten ore. Six men are employed. The Cowdery property is in the Nederland district of Boulder County.

PHELPS DODGE CORPORATION MAKES FINANCIAL STATEMENT

THE Phelps Dodge Corporation and its subsidiaries have announced a net income of \$14,051,569 for the year 1942, after making provision of \$18,000,000 for excess profits taxes and a transfer of \$1,500,000 to reserve for contingencies, but before depletion. This is equivalent to \$2.77 per share, comparing with \$2.80 a share for 1941. Dividends totaling \$1.60 per share were declared and paid to stockholders during 1942.

Capital expenditures in 1942 for all branches of the corporation and its subsidiaries amounted to \$8,780,586, of which \$6,715,786 was spent at the company's Morenci Branch, Morenci, Arizona. The Morenci expenditures marked the completion of the undertaking started by the company in 1937 for the development of the open-pit mine and construction of the new reduction works. It is expected that substantial additional capital expenditures may have to be made to provide a water supply for the Morenci mine and reduction works, as well as to carry out the expansion planned by the Defense Plant Corporation at Morenci and the El Paso refinery. It is believed that construction on the DPC project should be completed by August 1, 1943, and the new facilities should be operating at capacity some time during the last quarter of the year.

Figures for production and sales of the Phelps Dodge concern have not been disclosed, because of federal censorship regulations, but it is reported that production from the company's operating properties during 1942 was maintained on a maximum schedule. The largest producers of copper, with gold and silver as by-products, were the Copper Queen, New Cornelia, United Verde, and Morenci units.

At the Copper Queen Branch, Bisbee, Arizona, the Limestone mines were the principal producing units, development work done during the year, including exploration and stope preparation work, amounting to 60,000 feet, in addition to 17,398 feet of diamond drilling. No new ore bodies were encountered, but it is reported that developments resulting from the company's exploration and development campaign in 1942 were particularly satisfactory at the Cole and Junction mines. An agreement was negotiated in November with the Metals Reserve Company providing for mining of the marginal ores from certain areas of the Limestone mines, not profitable at a 12-cent price for copper. The MRC pays the cost of the operation, plus a small operating profit, and receives the copper produced. The company is shipping these ores to the United Verde Branch for smelting as no furnace capacity for them is available at the Copper Queen smelter.

Throughout the year Phelps Dodge operated the Copper Queen smelter on a maximum furnace schedule, with the tonnage of ores, concentrates, precipitates, and custom ores handled being considerably in excess of that smelted in 1941. The foundation of the new roaster-reverberatory stack was completed and erection of the stack, together with a new connecting

flue system, was started. The acid plant operated at full capacity.

Operations at the New Cornelia Branch of Phelps Dodge at Ajo, Arizona, were carried on at capacity. At the concentrator, structural changes in milling equipment, designed to increase production, were completed and have been reported entirely satisfactory. An extensive program to develop more water at the wells was carried on during the year, being necessary because of the increased tonnage treated at the concentrator.

Ore production was confined to underground ores at the United Verde Branch, Jerome, Arizona. By the end of the year all copper mining areas above the 1,650-foot level had been abandoned on account of depletion of available ores. The company reports that 34,160 feet of diamond drilling, 10,421 feet of drifting and raising, and 703 feet of shaft sinking were completed during 1942. Sinking of the No. 8 shaft was completed to the 4,631-foot level. A substantial tonnage of fluxing material was reclaimed from the low-grade ore dumps, and a small production of copper precipitate was derived from the Hopewell plant. During the last quarter of the year a quota adjustment for the Verde mine under the Premium Price Plan made it possible to make a moderate increase in copper production by mining marginal or low-grade ores.

The United Verde smelter maintained a two-furnace schedule all year. Arrangements were made with the MRC for the smelting of copper-bearing residues and scrap at Clarkdale. Leasing operations were continued in the Equator-Copper Chief group and early in the year leasing operations on low-grade copper ore were commenced at the Copper Basin property.

Regular production from the open-pit mine at the Morenci Branch was started by the end of January 1942, and as the year progressed that production was increased to the full capacity of the new concentrator, 15 mining benches being operated at the close of the year. Ten miles of new track were laid, the main haulage way to the crushing plant was widened and straightened, and double tracking from the end of the last switchback on the 4,500-foot elevation to the crushing plant was completed. The new concentrator at the reduction works treated its first ore

on January 30, 1942, and all units were in full operation shortly after.

The initial charging of the first smelter furnace at Morenci was started in April and full-capacity operations were under way in the following six weeks. The smelter crushing plant started operations in November, and the new power plant was started up in late January, assuming a full load in March, at which time the old Diesel-electric plant ceased regular activities.

At the Burro Mountain Branch at Tyrone, New Mexico, the capacity of the precipitation plant was increased by Phelps Dodge and an additional tonnage of copper precipitate was produced from the leaching operation. The Moctezuma Copper Company, Nacozari, Sonora, Mexico, operated its mine and concentrator throughout the year and shipped a small tonnage of siliceous ore, mined by lessees, from the Churunibabi group.

NATOMAS COMPANY REPORTS NET EARNINGS FOR 1942

NATOMAS COMPANY, Thomas McCormack, president, Forum Building, Sacramento, California, has reported a consolidated net profit of \$742,724 for 1942. This amount is equal to 80 cents a share on 929,775 capital shares outstanding at the end of the year, and compares with a net profit of \$1,474,926 or \$1.54 a share on 959,450 shares in 1941. The company purchased 28,775 shares of its stock at a cost of \$205,786 during the year.

It is reported that the reduction in the net earnings of the company was due primarily to the shutdown of gold dredging operations in October of 1942 in compliance with the WPB gold order. At the time of the issuance of the limitation order Natomas had five dredges in full-time production in the Folsom district of California. The company's appeal for permission to resume operations was denied by the Board of Appeals of the War Production Board in December. However, a second appeal, made subsequent to that time, was approved by the WPB and the company was allowed to operate two of its dredges for a limited period, expiring on June 30, 1943.

Yardage handled during the year decreased to 21,535,837 cubic yards, comparing with 26,415,273 cubic yards in the previous year. The net returns per yard fell from 7.70 cents in 1941 to 5.71 cents in 1942. During the year the company dredged 275 acres, including 59 acres held under lease.

Dividends paid by Natomas during 1942 totaled \$942,281, while the company received \$12,000 in dividends from the Merced Dredging Company, and \$14,577 from the South Platte Dredging Company, both of which operated at a profit.

In addition to its California dredging operations, Natomas also holds approximately 60,000 acres of agricultural lands in California, and recently leased 5,700 acres of land to the Richfield Oil Corporation. It is reported also that the company's machine shop has proved adaptable to forging and fabricating of war materials and over 60 employes are engaged in that work.



P. C. FEDDERSEN WILL START

NEW B.H.&S. SLAG PLANT SOON

IN GENERAL charge of the new \$1,000,000 slag fuming plant being built as an extension to the lead blast furnace building at Kellogg, Idaho, by the Bunker Hill and Sullivan Mining and Concentrating Company, is P. C. Feddersen, general smelter superintendent. Feddersen has been with the company since the fall of 1917, starting as assayer-chemist, and was promoted to chief chemist before his advancement in 1923 to metallurgist. In 1928 he was assistant superintendent and his present post of general smelter superintendent dates from October 1940.

Feddersen was graduated from Iowa State College in 1912 and the next spring was employed as laborer in the copper reverberatory furnaces by the International Smelting and Refining Company at Tooele, Utah. The next year he joined the research staff of the same company and then went to the general assay laboratory as assayer and chemist. There he remained until the spring of 1917 when he was transferred to the Garfield smelter of the American Smelting and Refining Company in the same capacity of assayer and chemist.

The problem of recovering zinc values from slag has been under consideration by B.H.&S. since 1929. The depression delayed action on the plans, but they were translated rapidly into concrete form with the development of the defense program. The plant is an extension to the lead blast furnace building and covers a floor space of 61,200 square feet. Of steel and concrete, it is 53 feet high and served by a brick stack 200 feet high. The outside diameter of the stack at the top is 10 feet.

For some years after the start of operations at the Bunker Hill smelter, Feddersen relates, the percentage of zinc in the slag was relatively low, not over 3 per cent. Mines were producing ores low in zinc and concentration generally was by gravity. With the steady increase and improvement in the flotation process of concentration, more complex lead-zinc ores were mined and the ratio of concentration was steadily increased, causing a corresponding increase of the ratio of zinc to other slag-forming constituents, so that today slags of 16 per cent zinc are not unusual. The slag plant will treat all current hot slag and some of the cold material from the old slag dumps. It will handle 400 tons of slag daily, producing up to 50 tons of oxide fumes containing from 30 to 35 tons of zinc and about 5 tons of lead. That portion of the slag dump which can be economically treated for zinc recovery contains about 1,000,000 tons, with an estimated 100,000-ton zinc content.

The charge of 30 to 40 tons of hot slag and cold reclaimed dump slag will be fed to a water-jacket furnace of about 15 by 8 feet and about 20 feet high. The complete operation requires 2½ hours. Each 30 tons of slag charged will receive during the blowing period about 100 pounds of pulverized coal and 100,000 cubic feet per minute of air at 10 pounds pressure through specially designed tuyeres. The carbon-oxygen mixture will be forced through the slag bath.

WAGES, OVERTIME, AND BRIBES

Any big brave miner at one of the large western mining properties, who has not been absent from his job for 14 whole days, will be eligible for a \$25 War Bond. Isn't that just ducky! Just like we used to get gold and silver stars for being at Sunday School each Sunday, only of course these patriots get paid for their time as well as rewarded. In addition, every four weeks two \$100 War Bonds will be given away, all men who worked full time for the period being eligible. There's something sweet about rewarding a small child, encouraging him to develop a sense of responsibility and loyalty and that certain something we call guts. And there's something nauseating about having to do the same for a grown man—did we say man? This mine isn't the only one so afflicted. They all have them, little silent partners of Hitler and Hirohito.

The fume-laden gases will leave the furnace at about 2,200° F. The temperature must be reduced to about 200° before the gases are filtered through woolen bags. This excess heat will be converted to a useful purpose; it will be used to heat the entire Bunker Hill plant and the remainder will be distributed to a large share of the population of Smelterville. The gas fume mixture, about 2,000 pounds a minute, upon leaving the furnace will pass through a boiler, then through an economizer, and the temperature reduced. Thence the fumes will pass through a 100,000 c.f.m. bag-house, which consists of five units, each with 10 compartments containing 78 bags eight inches in diameter and 10 feet long. The bags will be automatically shaken at set intervals, with automatic timing devices arranged so that no two bags will be shaken at the same time.

Elimination of the lead will be achieved in a brick-lined rotary kiln 7 by 75 feet. The combined zinc oxide and lead oxide fumes, possibly with the addition of a small amount of salt or zinc, will be charged to the kiln and heated to 2,100°. The lead fume driven off will be cooled and collected in a separate filter. The zinc oxide residue from the kiln, assaying 75 per cent zinc, will be cooled, crushed, and transported to a zinc reduction plant. Later the company expects to install a zinc retort addition to its own smelter, making the operation a self-contained unit.

GOLD HILL POST OFFICE IS ABOLISHED AFTER 82 YEARS

EIGHTY-TWO years of continuous service was the record of the Gold Hill, Nevada, post office, when it was discontinued February 27, 1943. Mail for Gold Hill now is being received at the Virginia City and Silver City post offices. In the early days of the Comstock Lode, Gold Hill had a population of about 8,000 and was rated for many years as a first-class post office. A steady decline has been in progress since the boom days, and the closing of the gold-silver mines last year swiftly ended the life of the once-famous Gold Hill.

OCCUPATIONAL DISABILITY TO BE COMPENSATED IN ARIZONA

AT THE recently concluded session of the Arizona legislature, an occupational disease law was passed providing compensation for total disability caused by occupational diseases. The law calls for the establishment of a state occupational disease compensation fund to provide insurance for employers, and defines the terms under which compensation will be paid. It also lists the compensable occupational diseases, which include silicosis and asbestosis.

Appointment of a medical board of three expert consultants on dust diseases is provided for. They shall be licensed physicians in good professional standing and with at least five years of actual practice in the diagnosis, care, and treatment of diseases of the pulmonary tract, together with the interpretation of X-ray films thereof. Other diseases will have similar expert boards.

Inasmuch as the law holds the last employer liable, Arizona mine operators, in order to protect themselves against undue claims, are urged to take precautions against the employment of persons who already are afflicted with silicosis but not yet disabled, persons who are tubercular, who have a history of tuberculosis, or who are from tubercular families. In doubtful cases, the employer is urged to request a physical examination and X-ray, together with a statement by the prospective employe as to his previous employment and tubercular record. These precautions are considered advisable since the law provides that persons giving false information or deliberately withholding essential data are not eligible for the benefits of the act.

TYRRELL MANGANESE MINE IS SUBJECT OF STATE REPORT

THE TYRRELL manganese mine, located east of Medford, Oregon, in the Lake Creek district, is the subject of a new report, published as G. M. I. Short Paper No. 10 of the State Department of Geology and Mineral Industries. Written by Wallace D. Lowry, junior geologist of the department, the report includes maps, cross sections, and sketches and is available for 15 cents at the department's head office, 702 Woodlark Building, Portland, and at the laboratories at Baker and Grants Pass.

High-grade manganese oxide concentrates were produced from the property during the first world war. The deposit is low in silica, one of the few Oregon manganese deposits whose ore is not derived directly from manganese silicate and thus can be used in metallurgical practice for steel making.

COURSE IN MINERALOGY OPENED IN MONTANA

AN EVENING course is being given at the Montana State University at Missoula twice a week, Tuesdays and Fridays, under the direction of W. R. Lowell of the geology department. The course, which includes blow-pipe and simple acid analysis, will enable the prospector to identify rock containing minerals with which he is not now familiar.

Eclipse mine. The property is located in the Black Canyon district 4½ miles south of Cleator, Arizona. Andy Anderson, Cleator, is part owner of the Eclipse. Principal values are in scheelite.

Gilbert Mock, Mayer, Arizona, is reported to have made several shipments to Clarkdale from the Stoddard copper mine in Yavapai County near Mayer, and at present is investigating the possibilities of shipping siliceous fluxing ores from the property. Mock is leasing the Stoddard and has two men working.

The **Inspiration Consolidated Copper Company**, Inspiration, Arizona, declared a dividend of 25 cents a share payable March 23, 1943, to stockholders of record March 8, 1943. The same amount was paid by the company in previous quarters. T. H. O'Brien of Inspiration is vice-president and general manager for Inspiration Consolidated and P. D. I. Honeyman, Inspiration, is general superintendent of operations for the company.

A \$20,000 Reconstruction Finance Corporation loan has been granted for the development of the **Springfield** copper property near Crown King, Arizona. Plans are to run a raise from the tunnel level to the surface, extend the present winze another 100 feet, and crosscut both ways to block out the 4 per cent copper ore. The mine is owned by a group composed of P. R. Helm, 2606 North Seventh Street, Phoenix, Arizona, and J. P. Sweet and Hugh Nelson, both of Crown King. Four men are being employed in the Springfield operations.

The **Gladiator Mining Company** is carrying on milling operations at the Golden Belt mill 24 hours daily, five days a week, employing a crew of five men in the mill. Present capacity is 40 tons daily. The mill was taken over last fall by the Gladiator company to treat the gold-copper-lead-zinc ores from the Gladiator mine near Crown King in Yavapai County, Arizona. A crew of eight men is being employed at the mine under the direction of A. N. Bennett, Crown King. E. M. Moores, Route 7, Box 612, Phoenix, Arizona, is president of the Gladiator Mining Company.

John Nezik of Cleator, Arizona, is planning to unwater the 180-foot shaft at the **Gray Goose** mine near Cleator in Yavapai County, Arizona. Three men are being employed at the zinc-gold-silver-copper

property at present. Nezik is operating the property under lease from the owner, William Schutz, Cleator.

One car of siliceous gold ore is being shipped every six weeks from the **Bugler** mine located near Cherry, Yavapai County, Arizona. The property is under lease to Hugh G. Allen, Cherry, Arizona.



Recent work at the property of the **Cosumnes Copper Mine, Ltd.**, 18 miles east of Plymouth, Amador County, California, on the Middle Fork of the Cosumnes River, has consisted mainly of crosscutting under the old workings, and plans are being made to erect a concentrating plant at the site. The ore body has been described as being from 6 to 40 feet wide and outcrops on the surface for 3,000 feet. Values are in copper, molybdenum, and tungsten. The property was reopened last fall by F. Hall, J. Williams, and George M. Thomas, Jackson, California.

The firm of **Owens and Stearns** is reported to have recently taken over the holdings of the **Mangachrome Company**, Auburn, California, including the Duggan and Stone properties, located in the Wolf mining district of Nevada County, California. The new operators already have moved in equipment to the property. Under the management of Charles A. Neville, Auburn, general manager, approximately \$15,000 worth of ore was taken out by the Mangachrome concern. Most of the work was done on the Duggan where 40,000 yards of material were moved. Mangachrome had been operating under a 1,000 ton manganese contract from the Metals Reserve Company. At the time the property changed hands, the new screen washing plant, with a concentrator to handle fines, was almost completed.

According to reports, the **Empire Star Mines Company**, Grass Valley, California, has acquired control of the **Utica** gold mine in Calaveras County near Angels Camp, California. The property formerly was owned by the Hobart Estate Company and Mrs. Emma Rose, 351 California Street, San Francisco, and later was taken over

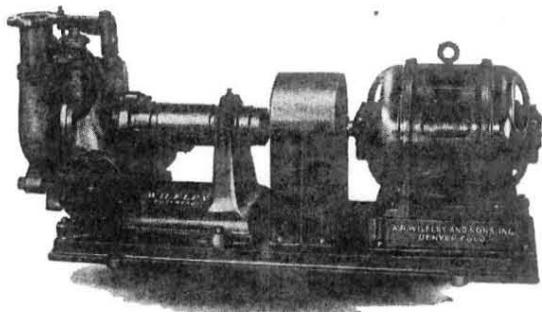
by the Utica Mines, Inc. John R. C. Mann, Grass Valley, is general manager of Empire Star operations.

Early operation of the **Big Bend** copper-zinc property northeast of Oroville, Butte County, California, is scheduled by **Hoefling Brothers**, J. W. Hoefling, Box 786, Sacramento, California, managing partner. An extensive exploratory program already has been completed, a temporary road to the mine opened, and machinery and equipment have been installed. It is hoped that an access road to the property will be built in the future. The Big Bend is a new property about five miles by road from the Surcease mine, owned by Hoefling Brothers but now closed down under the recent WPB gold order. Ore from the Big Bend will be trucked to the Surcease for milling. W. E. Messner is superintendent of operations at the Big Bend. Hoefling Brothers also are producing tungsten from their Spud Patch placer operation near Atolia, California.

Officials of the **Permanente Metals Corporation** have announced that the February output of the Los Altos, California, magnesium plant exceeded production of any previous month by 75 per cent. Actual tonnage was withheld, however, although it was said that the production represented in substantial proportion the plant's originally scheduled capacity. This report is one of the first statements that has been issued by Permanente. It is understood that plans are being formulated to materially increase the company's production at this plant in the near future. Henry J. Kaiser, Latham Square Building, Oakland, California, heads the Permanente Metals Corporation.

The **Sonoma Quicksilver Mines, Inc.**, is treating 135 tons of ore daily at its Mt. Jackson mine near Guerneville, Sonoma County, California. The main shaft is down 500 feet and stoping has been started on this level. A main pump station has been cut and a 100-horsepower Byron Jackson pump installed. The mine has been unwatered to the 620-foot level and at present preparations are being made to open this level. Two Gould rotary furnaces are in operation at the Mt. Jackson property and a second Kue-Ken No. 30 crusher was installed during January. H. D. Tudor of 58 Sutter Street, San Francisco, California, is president of Sonoma Quicksilver,

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and S. F. Wickham is superintendent in charge of operations at the mine. Allen Mowry is mine foreman and H. F. Larsen is plant foreman.

The road to the old Cajalco tin mine, which recently was washed out by heavy rains, is being repaired by a county highway crew. The mine is in the Temescal district of Riverside County, California, and is being operated by the **Dodge Construction Company**. The company has been planning to make a 90-day test run at the property, and machinery for the test mill will be moved in as soon as the road is opened. If the test run proves successful, it is expected that regular tin mining operations will be carried on by the Dodge Construction concern, with a crew of about 30 men being employed. Stephan Riess, Simi, California, is in charge of operations at the Cajalco project. Fred B. Wilder, 1216 North Edgemont, Los Angeles, is chemist, and Ray I. Biggy, Riverside, is business manager for the company.

The **Tycrete Products Corporation** of Beverly Hills, California, is said to have signed contracts for the **Brown** magnesite deposit of 640 acres 12 miles west of Needles, California. The property has been explored by a number of open cuts and pits and it is understood that a large deposit of commercial-grade magnesite ore, sampling as high as 90 per cent in some cases, has been exposed. The Tycrete concern has a 150-ton plant in operation at Chula Vista, California, where ore from the Brown property will be treated. Mitchell L. Liebenson is executive vice-president of the concern.

Four ledges containing values in lead, copper, silver, and gold, are under development at the Santa Rosa mine located near Darwin in Inyo County, California. The property is owned and operated by the **Santa Rosa Mining Company**, and has a production record of over \$1,100,000 worth of ore. During the summer of 1943 the company hopes to erect a smelter and refinery at the site, but at present ore is being shipped to a Utah smelter. J. R. LeCyr, Darwin, is president and general manager of Santa Rosa operations.

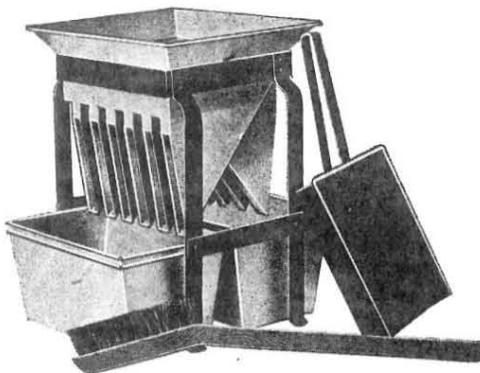
The **Anglo American Mining Corporation**, Randsburg, California, recently took an option on the **Helen** quicksilver mine in Lake County near Middletown, California. The Helen property is owned by H. W. Gould, 1000 Mills Building, San Francisco, California, and for the past several years has been operated by Alan Fleishhacker, 200 Bush Street, San Francisco. Walter Lyman Brown, 206 Sansome Street, San Francisco, is president of the Anglo American concern.

The **Bradley Mining Company** is planning to start operations immediately at the **Weiper** quicksilver mine, which the company recently leased from the owners, Al Beecher and Elwood and Erwin Weiper. The mine is located about four miles east of Lower Lake in Lake County, California. Mining will be by open-pit methods, with the possibility that shaft work may be employed later. It is understood that improvement of the county road at the mine also will be started. Worthen Bradley, 425 Crocker Building, San Francisco,

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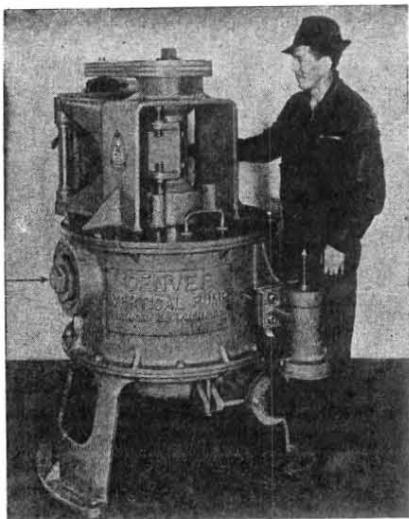
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California, is president of the Bradley concern, and F. A. Hammersmith, 920 Crocker Building, is purchasing agent. The mine will be known as the **Silver Rock** in the future.

Regular production is being maintained by the **National Lead Company** with 12 men employed in the mine and eight in the mill at El Portal, California. Eighty tons of barytes are being produced daily at the National Lead operations. Work is under the direction of George Ratcliffe, general manager, 830 Ducommun Street, Los Angeles, California. The company is headed by Fletcher Rockwell, 111 Broadway, New York, New York. Other officials of the company include J. W. Hofstetter, assistant general manager, 830 Ducommun Street, Los Angeles; and E. H. Murchison, general superintendent; J. C. Carlson, mine superintendent; and Luther Willett, mill superintendent; all of whom may be addressed at El Portal.

Arthur J. Theis, Darwin, California, and associates recently took over the **Darwin** mine located two miles north of Darwin in Inyo County, California. The Darwin is a silver-lead property which, until the new operators acquired it, had been worked by the Imperial Metals, Inc., Sam B. Mosher, Box 5840, Metropolitan Station, Los Angeles, California, president. Theis formerly was engaged in mining in Arizona.

The work of treating the tailings of tungsten ores milled during the last World War has been completed by the **Atolia Mining Company** and the flotation plant at the mill has suspended operations. All other operations at the Atolia plant, however, are proceeding as usual, including the company's mining activities in the district. Hugh W. Coke of Atolia, California, is superintendent for the Atolia Mining Company.



The **Hayden Mining Company**, headed by Ralph E. Ruder, Box 1071, Colorado Springs, Colorado, is reported to be shipping manganese ore to the stockpile at Salida. The deposit from which the ore is being mined is within the city limits of Ouray and was found about six years ago by R. D. Wilfley of Colorado Springs, a member of the Hayden company. The company also holds lead-zinc property in the El Mountain and Tomichi districts in Gunnison County, where work was suspended for the mid-winter months but will be resumed soon. John F. Church of Crested Butte is in charge of work in Gunnison County.

An overhead tram between the mine and the county road has been completed by the **Martinette Mining Company** at Montezuma, Colorado. Two shifts of six men are engaged in the mine, with Hugh Chisholm of Montezuma as superintendent. Clarence L. Martin of Montezuma is president and general manager. Ore values are in gold, silver, lead, and zinc.

A shipment of marginal ore was made several months ago from the **Pennsylvania**

mine at Montezuma, Colorado, which is being operated by the **Summit County Lead and Zinc Company**, under the management of Carl H. Peterson, 4307 Tejon Street, Denver. High-grade silver-lead ore is stated to have been opened on the Ohio level of the mine.

The **Elkton Company** of Cripple Creek, Colorado, produced 8,221 tons of ore during 1942, with an average value of \$7.18 a ton and a gross value of \$59,005. This compares with 16,339 tons in 1941 with a gross value of \$99,445. During the first six months of the year the company operated its main shaft to accommodate split-check lessees, but closed it when most of them left for war industries or military service. Although the company received permission to continue limited operations until June 7, 1943, there is insufficient labor available to resume work in the shaft, so the mine remains shut down. The net income for the year was \$1,369 against \$1,422 in 1941.

At the property of the **Le Clair Consolidated Mines Company** at Cripple Creek, Colorado, all production during 1942 was maintained by lessees and amounted to 4,053 tons of ore with a gross value of \$12.32 a ton. In the preceding year 5,437 tons of ore were produced with a gross value of \$33,906 or \$6.24 a ton. In 1942 most of the ore was from the mine, while in the year before it was from the mine dump, which accounts for the lower values. The company's net income was \$2,966 last year against \$584 in 1941. At present all lessees have left the property except one set which employs two men in the Grace Greenwood shaft.

A net loss of \$2,089 for 1942 is reported by the **New Gold Dollar Mining Company** at Cripple Creek, Colorado, against a net loss of \$2,912 in 1941. Production amounted to 968 tons of ore, mostly from the dump, with a gross value of \$6,380 or \$6.59 a ton, which compares with 2,434 tons with a gross value of \$22,844 or \$9.38 a ton in 1941. The company's main shaft was closed March 1, 1942, due mainly to lack of lessees.

Only small scale operations are reported for 1942 by the **Jerry Johnson Gold Mining Company**, which halted both company and lease operations at Cripple Creek, Colorado, in July 1942, except for one set of sublessees which continued in the Damon shaft until November. Profit for the year was only \$362.

George Jump, 728 Tenth Street, Boulder, Colorado, is hoisting ore from the third level of the **Oregon tungsten** property which he and his three sons are operating under lease from the Vanadium Corporation of America. The property was reopened during the last two years by Jump and unwatered and retimbered to its full depth, 310 feet. A three-machine compressor was installed last year. Both mine and 25-ton mill are being operated on a one-shift daily basis and concentrates are shipped every two weeks.

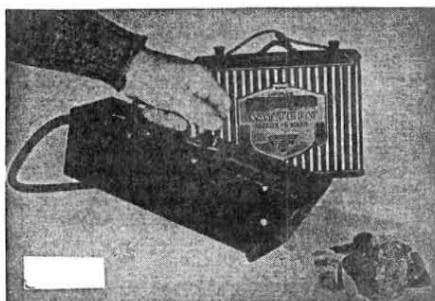
Concentrates are being produced from the reconditioned April Fool mill near Boulder, Colorado, which was completed early in January. George Jump, 728 Tenth

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needs of money management. It will be the other way around—money must facilitate, not hamper, trade.

In the absence of a better system, despite the contention of some that metallic money is antiquated, we perforce shall be constrained once again to turn to gold and to silver as international media of exchange—gold for those to whom it is best suited, silver for those who cannot afford the more precious of the two metals. Nor need we fear the wholly fallacious argument of those who prate about the unworkability of a "double standard," for a fixed ratio will make it work.

India's problem is nearing solution. A way to solve it will be found because the will to find it exists. In the meantime, the renunciation of extraterritorial rights in China by Britain and the United States is added proof, if proof were needed, that this will does exist, and that, in the treatment of Asiatic questions, close cooperation on the part of the English-speaking nations is already at work, because it is an essential corollary of the Atlantic Charter.

When India wins her freedom we must help her that she may conserve it. If she successfully restores her time-honored monetary system, she will enable China to follow suit when the time is ripe, so that together they will constitute a solid Asiatic bloc upon which, and in association with which, we can erect an enduring post-war economy.

IN CONCLUSION, and for the benefit of those who would fight the "sound money" battle of 1896 all over again, suffice to say that William McKinley then stood on the Republican party platform which declared for bimetallism with the ratio of silver to gold fixed by international agreement, whereas William Jennings Bryan, the isolationist of the time, wanted it established by the United States at a ratio of 16-to-1 without agreement with other nations.

And President McKinley was right. He merely followed the monetary policy of the United States which, by Act of Congress, was established on November 1, 1893, and never altered to this day. Section 311 of the United States Code Annotated (c.8, 28 Stat.4) lays down our policy as follows:

"Section 311. Policy of United States as to bimetallism.

It is hereby declared to be the policy of the United States to continue the use of both gold and silver as standard money, and to coin both gold and silver into money of equal intrinsic and exchangeable value, such equality to be secured through international agreement, or by such safeguards of legislation as will insure the maintenance of the parity in value of the coins of the two metals, and the equal power of every dollar at all times in the markets and in the payment of debts. And it is hereby further declared that the efforts of the Government should be steadily directed to the establishment of such a safe system of bimetallism as will maintain at all times the equal power of every dollar coined or issued by the United States, in the markets and in the payment of debts."

This monetary policy is sound today, not only for us but for the British Commonwealth of Nations. If similar legislation were now enacted in London, success of the policy would become certain. This, in turn, might save India's membership within the British Commonwealth of Nations. And no one is in a better position to appreciate this than Prime Minister Churchill himself.

RECORD PRODUCTION MADE BY KENNECOTT COPPER CORPORATION

KENNECOTT COPPER CORPORATION reports that during 1942 its copper production from both domestic and foreign properties exceeded that of any previous year and production of molybdenite was also at record levels. The average payroll of each division of the company increased about 17 per cent, despite the 3,185 employees who left to engage in military service. Because the employees of the Alaska Steamship Company now are being carried on the payroll of the War Shipping Administration, total number of employees is reduced to 28,200, compared with 30,400 for the previous year.

While detailed statistical information relating to operations cannot be given, the Kennecott company announces that its Utah property (Utah Copper Company) maintained its position as the largest copper producing unit in the world and exceeded all previous records. Due to difficulty in securing building steel, the construction of the new power plant has been retarded, but most of the equipment is on the ground and completion is scheduled as soon as possible.

In order to simplify its corporate structure, Kennecott dissolved the Nevada Consolidated Copper Corporation, wholly owned subsidiary, organized in 1933 to manage the Nevada, Arizona, and New Mexico copper properties. At the Nevada Mines Division there was a substantial increase in the output of copper over the preceding year. The most important improvements effected were the installation of an economizer for the more efficient utilization of waste heat gases and a multiclone for the reduction of metal losses at the smelter. Exploration of the ground below the present lowest level of the Ruth mine was continued and exploratory drilling was carried on in the Veteran area.

Production from the Ray Mines Division exceeded that of any previous year. A third unit was constructed at the precipitation plant, the coarse crushing plant at

IT'S DONE WITH MIRRORS

One of our subscribers permitted us to see an invitation he received to "witness demonstration runs at new 40-ton plant . . . Plant uses no acid nor machinery. Mine-run ore is air treated and metallic salts of 96 per cent purity recovered. Plant is treating magnesite, manganese, and tungsten ores. Metals recovered from all ores. Purpose of demonstration to encourage development of plants for handling all low-grade ores. Plants are cheaply built."

In comment, the subscriber says, "They do it with mirrors, haven't you heard? Magnesite, manganese, and tungsten ores are introduced into a vacant room in the presence of an Indian swami who is 96 per cent pure. Hot air is then added with liberal addition of Glauber salts and small amount of croton oil. Results are naturally as anticipated. Why use machinery?"

the mine was remodeled, and a cooling tower was installed at the power plant.

Output from the Chino Mines Division also reached the highest in its history. A substantial part of the production was marketed for the first time in fire-refined form. Additional grinding equipment was installed in the concentrator to increase the grade of concentrates. Although drought conditions prevailed, sufficient water for plant requirements was secured through drilling additional wells and from water reclaimed after the installation of a 230-foot Dorr thickening tank.

The company reports a consolidated net income of \$46,140,121 or \$4.26 a share for 1942, after all taxes, depreciation, and retirements, and after \$2,000,000 reserved for contingencies, but without consideration of any post-war refund of excess profits taxes. This refund will amount to \$2,681,145 or 25 cents a share. Total tax charges, not taking into account any post-war refund, were \$53,421,024 or \$4.94 a share, compared with \$42,024,599 or \$3.88 a share in 1941. Cash distributions aggregating \$3.00 a share and totaling \$32,464,959 were paid to stockholders.

WAR CONDITIONS SERIOUSLY CRIPPLE IDAHO MARYLAND

THE Idaho Maryland Mines Corporation, operator of historic old Mother Lode gold properties in California, which had averaged net returns of more than \$1,000,000 a year for the last three years, reports a sharp decrease in profits for 1942. Net profits after all charges and federal income taxes totaled \$147,975 or 8 cents a share on 1,785,157 shares outstanding in public hands. This amount compares with a profit of \$1,008,315 or 56 cents a share on stock outstanding in 1941.

Dividends totaling \$178,977 were paid during January and February of 1942, entirely from earned surplus. Dividends for 1941 amounted to \$1,074,021 or 60 cents a share.

The main reason for the decrease in Idaho Maryland earnings was the War Production Board ruling relating to gold operations, and Idaho Maryland's properties were closed down in October of 1942. Before the beginning of the war the company had been employing in excess of 950 men at its Idaho Maryland and New Brunswick mines near Grass Valley and that number had dwindled to 245 at the time of the closing order. When mining operations were stopped, the mines were reported to be in excellent condition underground and the company was allowed to hire sufficient men to maintain the properties for operation after the war. About 110 men now are on the payroll.

Efforts on the part of the company to discover ores carrying tungsten or other strategic metals in commercial quantities were unsuccessful. The concern optioned the Midway quicksilver mine near San Jose in July of 1942, but operations at this property were abandoned when deposits were found to be very shallow.

Edwin Letts Oliver, 2900 Glasscock Street, Oakland, California, is president of Idaho Maryland and Albert Crase of Grass Valley is general manager.

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"Our men are very well pleased," said the safety engineer of one of the West Coast's largest shipyards, "with the Morenci Safety Belts we have given them to wear on scaffold jobs. They have repeatedly commented on their light weight and easy adjustability, which, from my point of view makes them completely successful."



Cylindrical kits

Manufacture and distribution of Bullard Cylindrical first aid kits has now been resumed. They differ but little from those made of drawn aluminum (now on critical materials list) inasmuch as they retain all their weatherproof characteristics for outdoor mounting.

To the kit, however, has been added a hinge that keeps the lid from being misplaced or lost. This feature is illustrated.

The handy roll-up containing the unit packets drapes easily over the arm, leaving both hands free to administer first aid. A flick of the clip on the bottom of the cylinder releases this roll.

More complete information on any of the above items may be had by writing for product literature. Descriptions are condensed from the bulletin "What's New in Safety," which will be mailed to you monthly on request.

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ment work has been done by means of a Reconstruction Finance Corporation loan of \$5,000. The Emerson is in the Chloride district of Mohave County, Arizona, and is held under lease with option to purchase by Grannis. Grannis also operates the Hidden Treasure property, which adjoins the Emerson.

The shaft at the Manzanita mine in the Chloride district of Mohave County, Arizona, is said to have been sunk to the 140-foot level and sinking operations are being continued. The Manzanita is a lead-silver-gold property and is owned by Minnesota-Conner, Inc., T. M. Recchiuti, president, Security Trust Building, Camden, New Jersey. R. E. Lord, Chloride, is general manager at the mine.



The Tuolumne Gold Dredging Company, which closed down operations in October 1942 in compliance with the WPB gold order, has received permission from the War Production Board to continue operation of its dredge at La Grange, California. The dredge had been rebuilt and placed in operation by the company in May of 1942. John A. McDonald, 912 Russ Building, San Francisco, California, is president of the Tuolumne Gold Dredging Company, and Estey A. Julian, 421 Crocker First National Bank Building, San Francisco, is general manager of the company's operations.

An extensive development program is expected to be undertaken soon at the Cloverdale quicksilver mine, recently acquired by John A. McDonald, 912 Russ Building, San Francisco, California, president of the Tuolumne Gold Dredging Company. The property is located 12 miles east of Cloverdale in Sonoma County, California, and formerly was held by the Bert C. Austin Company, Inc., Mills Building, San Francisco, California.

The Tyson Chrome Mines, Ltd., of San Francisco, California, has announced that it expects to maintain a production of between 500 and 1,000 tons of chrome ore per month from the French Hill mine in Del Norte County, California. The company has completed graveling and improvement of the road to the mine with the assistance of the U. S. Forest Service. As poor transportation facilities had been the greatest problem at the French Hill it is expected that production will be started soon. The crew will be increased from 10 to 20 men within a short time. French Hill operations are under the direction of Julius A. Cassano. The Tyson Chrome Mines, Ltd., also recently started operations at the Mountain View group of claims in Del Norte County, California, with Roger Beals in charge of work. A third group of claims, the Copper Creek mine, is under lease from the company to Gillis, Brandi, and Gillis, and mining and shipping of ore from this property continued throughout the winter. Benjamin C. Mickle,

111 Sutter Street, San Francisco, California, is managing partner in the Tyson Chrome Mines, Ltd., operations.

Chrome and manganese ore are being mined by the California-Pacific Chrome, Inc., newly organized to operate the Chrome Hill mine located in San Luis Obispo County, California. Fifteen men are being employed at the Chrome Hill operations under the direction of Alex Minoli, superintendent. Todd B. Elliott, Box 100, San Luis Obispo, California, is general manager. A. G. Purvis of New York, New York, and R. Sheppard of Seattle, Washington, head the new organization. The Chrome Hill property, which consists of 750 acres, was worked as early as 1876 and extensive operations were carried on during the first World War, mostly from open pits. A large tonnage of boulders of high-grade chrome were picked up from the surface, extending over a large acreage of this property. Today, this makes an excellent high-grade mill ore, which will be handled by power shovels and trucked to the mill which is being erected on the site. There also is an immense tonnage which has been opened up for a distance of 2½ miles, averaging 17 per cent chromite. High-grade is said to average 48 per cent chromite. The new mill will handle 125 tons of ore per day when completed.

The Empire Star Mines Company, Ltd., Grass Valley, reported that during 1942 the concern milled 139,804 tons of gold ore, the recovery from which amounted to 0.389 ounces per ton. This compares with the 1941 production of 248,289 tons, averaging 0.349 ounces per ton. The decrease in tonnage milled is due to the closing of the company's properties because of the War Production Board ruling for gold mines. The Empire North Star and Pennsylvania mines as well as the three mills at these properties have suspended operation. The Zeibright and the Browns Valley mines also were closed down and are filling with water. Clean-up work is being done at the company's mills and it is understood that the company is allowed to mill the clean-up, the results of which are expected to offset to some degree the cost of closing down. John R. C. Mann of Grass Valley is general manager of Empire Star operations.

Announcement has been made that incorporation proceedings have been completed by the Desert Tungsten, Inc., which is starting operations at the Walker placer claims northeast of Randsburg, Kern County, California. The new corporation is headed by William A. Dewitt, Lyon Building, 106 East Second Street, Reno, Nevada. F. E. Turner of Muskogee, Oklahoma, is vice-president, and L. C. Brittain of Randsburg is secretary-treasurer. Following several months of preparation, recovery equipment now is erected and ready for the test runs. A pipe line from the Little Butte and Big Butte mines in the same district supplies water for the group's reservoir. Present capacity of the plant is said to be 50 yards per shift and this amount will be increased as the water supply justifies. Installation and testing of equipment have been under the direction of Brittain.

The Newmont Mining Corporation has reported a net profit of \$1,301,402 for the year 1942. This amount is equal to \$1.22 a share and compares with a net profit of \$1,784,649 or \$1.68 a share in 1941. A reduction in the Newmont Mining Corporation's share in ownership of the Kennecott Copper Corporation, Phelps Dodge Corporation, and the Hudson Bay Mining and Smelting Company, Ltd., was noted in the company's annual report for 1942. Newmont is headed by Charles F. Ayer, 14 Wall Street, New York, New York.

The Pacific Mining Company has reported production revenues of \$219,845 and a net loss of \$33,496 for the year 1942. The company reported a gross income of \$316,296 with operating expenses before depreciation amounting to \$284,047 for 1941. Pacific Mining Company is 75-per cent owned by the Alaska Juneau Gold Mining Company. Main operations are being carried on at the Pine Tree and Josephine mines, Bear Valley, California, under special ruling from the War Production Board. The company also operated the Jenny Lind mine until October of 1942. P. R. Bradley, Jr., Jamestown, California, is president of the concern.

Announcement has been made of an agreement whereby the General Dry Battery Company will purchase the Western Manganese Company's entire output of pyrolusite, used in the manufacture of dry batteries. The new \$100,000 plant, which General Dry Battery erected near the property of Western Manganese at Patterson, Stanislaus County, California, recently was put into operation. The new contract is said to cover a 30-year period, with present output supplying the war effort. The Western Manganese Company has 10,000 acres of ground under lease in Stanislaus County and values are in pyrolusite, which is being treated at the General Dry Battery plant, and metallic manganese. The manganese or rhodochrosite is being developed by the Del Puerto Manganese Company and the present work consists of shaft sinking to connect with the reported six-foot manganese vein on the property. Both Del Puerto and Western Manganese are headed by William C. Crittenden, 519 California Street, San Francisco, California.

Operation of one of the three dredges of the Gold Hill Dredging Company is being carried on by the company at Camanche, Calaveras County, California. The dredge being operated is known as the Upper Camanche and work is being directed by Superintendent Mark L. Summers, 3571 McKinley Boulevard, Sacramento, California. The company recently was authorized by the Board of Appeals of the War Production Board to continue limited operations for a period of six months. One of the conditions set for the company has been restriction of the number of the crew to not more than 17 men. It is understood that the Camanche Gold Dredging Company recently completed merging negotiations with the Gold Hill concern, of which E. B. DeGolia, 904 Robert Dollar Building, San Francisco, is president.

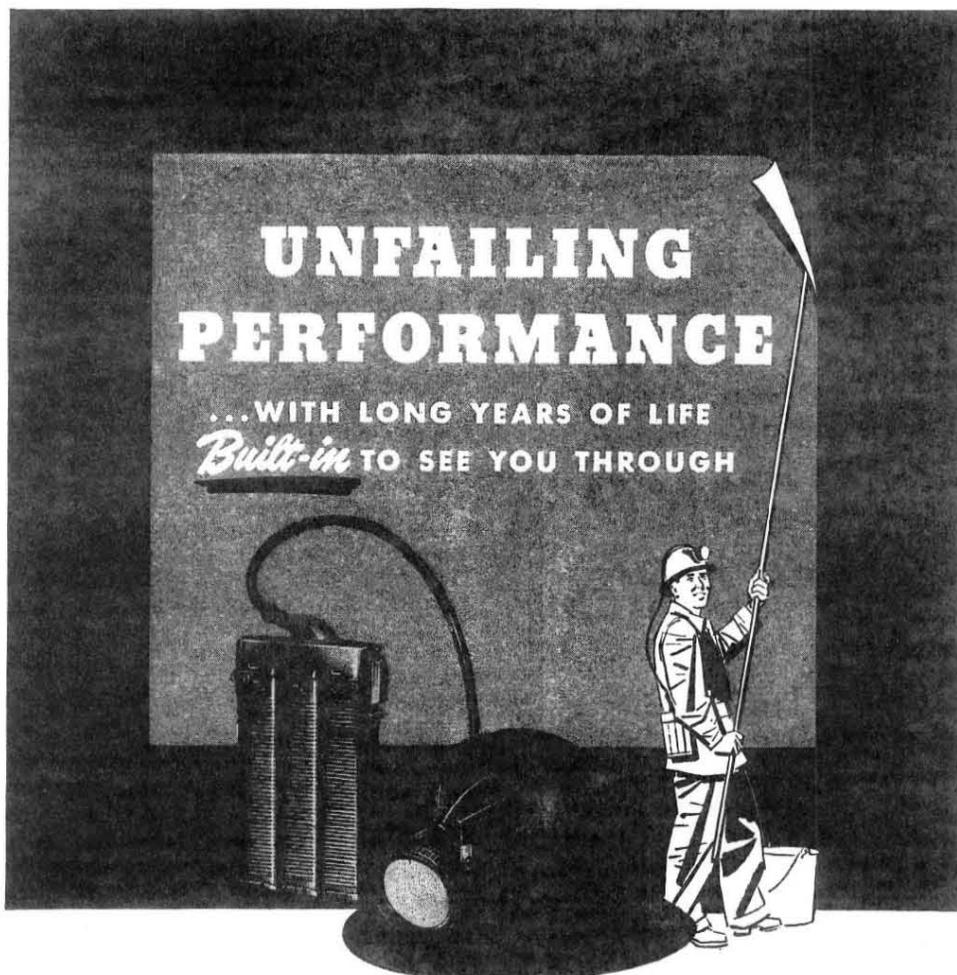
Four hydraulic monitors are reported to be sluicing a large yardage of gravel daily at the Canyon Creek placers located near Dedrick, California, and one mile south of

Junction City, Trinity County, California. It is planned to work about 250,000 cubic yards of material sampling 9 cents per cubic yard before the season ends July 1, 1943. The operation is under the direction of John W. Bergin, Box 31, Weaverville, California. Bergin recently received approval from the Board of Appeals of the War Production Board to continue operations. Only men over 55 years of age are being employed in the Bergin project.

Several shipments have been made recently by the Geyser Development Company from the firm's property in Hog Canyon in the Geyser Peak district of Sonoma County, California. Ore carrying satisfactory values in quicksilver is reported to be under development in the western part of the canyon, work being done under

a sublease by Matt Bartlett, C. M. Chandler, Tom Cordoza, and Nelson Peterson. Water has been piped to the property, an access road to the mine completed, and camp buildings erected. Exploratory work carried on last year is understood to have uncovered substantial cinnabar deposits in previously undeveloped ground, which promise to allow for profitable operation.

Arrangements are being made by John O. McBroom of Cecilville, California, to increase production at his chrome property located near Cecilville in Indian Gulch in Siskiyou County, California. The high-grade chrome deposits were discovered recently by McBroom while he was developing gold deposits in the district, and subsequent development has been satisfactory.



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At present ore is being packed to the road for trucking to the Metals Reserve Company stockpile at Yreka, California.

A deposit of steatite recently was discovered by Frank Livesley and Roscoe C. Wright of Box 62, Goldfield, Nevada, and active mining operations have been started. The mine is located in the Burro mining district of Inyo County, California, and the deposit is said to be from 8 to 15 feet wide and more than 600 feet long. It is understood that the operators have arranged for shipments of the talc to shipyards and steel plants.

The Golden Feather Dredging Company, which has been engaged recently in clearing the channel of the Feather River near Oroville, California, now is reported to have dredged approximately a quarter mile on the south side of the river. The dredge was moved to the south side at the beginning of January. The dredge is widening the present concrete levee by 125 or 150 feet with tailings from its operations, and it is understood that the levee is to be leveled and eventually made into a roadway. The company was granted a 60-day extension of operations by the Board of Appeals of the War Production Board after the order closing down all gold operations. The present permit is effective until May 31, 1943, and the company hopes to obtain a further extension of operations in order that dredging may be completed this year. A crew of 25 men, working three shifts daily, is being employed by the company. E. A. Wiltsee, Room 1003, Wells Fargo Building, San Francisco, California, is general manager for the Golden Feather concern.

The South Jackson Mining Company recently acquired, at tax sale, title to the patented mining and mineral rights of the Moore gold mine, adjoining the company's South Jackson property near Jackson, Amador County, California. The action is said to have increased the company's holdings from 71 to over 300 acres. It is understood that the company also has been examining various strategic metal mines and one quicksilver property is being seriously considered for purchase by South Jackson. The South Jackson Mining Company was dissolved in 1932, but last year was revived by payment of delinquent taxes, penalties, and interest under a certificate of revival. The offices were moved from Jackson to 333 Kearney Street, San Francisco, California, and Jeffrey Schweitzer was elected president of the newly organized group.

R. R. Stevenson, 548 Glenview Avenue, Oakland, California, is employing two men to open up a large manganese deposit which he recently leased. The property is located in San Benito County, California. As soon as equipment can be secured it is expected that two miles of new road to the mine will be constructed. Stevenson also has a 30-day option to lease the Antelope copper mine in the same district and is sampling the property. If results prove favorable Stevenson plans to install a leaching plant to handle the copper sulphate ore in sight.

Lester B. Walbridge of Hollister, California, is reported to be leasing the old

Bitterwater mining property in the Panoche mining district of San Benito County, California. The owners are H. V. Underwood and E. A. Mathews, both of Hollister. Values are in quicksilver.

Fire swept through the main building of the American Smelting and Refining Company plant at Selby, California, March 13, destroying the blue vitriol plant and bucking room facilities and part of the acid plant, causing an estimated damage of more than \$250,000. No interruption of ore shipments was necessary. The fire is said to have broken out about 6 a. m. and was brought under control two hours later. J. D. MacKenzie, 405 Montgomery Street, San Francisco, California, is general manager of the California department of American Smelting and Refining Company.

T. Eldridge of Cecilville, California, is reported to have reopened an old chrome property on lower Crawford Creek near Cecilville in Siskiyou County, California.

The Smelters Corporation is said to be carrying on operation of its plant at the rate of approximately 25 cubic yards per hour. This production is reported to be only half of the plant's estimated full capacity, the decreased output being due to the recent heavy rains. However, operation of the plant at half capacity is making possible adjustments necessary to put the unit into full production. The company's property is located in the Stringer mining district near Atolia, San Bernardino County, California. W. B. Thurman of Lodi, California, is president of Smelters Corporation, and Grant Morton, Lodi, is engineer in charge of operations.

High-grade quicksilver ore has been exposed by a sinking program below the old workings in the Abbott quicksilver mine near Wilbur Springs in Colusa County, California. Monthly production from this property is said to run close to 300 flasks. The Abbott is operated by the International Metals Development Company, Mark Ewald, 2227 Water Street, Olympia, Washington, president. International Metals also holds the Alabama mine at Penryn, California.

The Combined Metals Reduction Company has exercised its option for 1943 on the A. G. Miller zinc property on Old Zinc Hill near Panamint Springs in Inyo County, California. Guy H. Herbert, Jr., is superintendent of the property. Principal operations of Combined Metals are in Utah and Nevada, and the company is headed by Fletcher W. Rockwell, New York City. E. H. Snyder, Stockton, Utah, is vice-president and general manager for Combined Metals.

Shipment of copper concentrates has been started by the Newmont Mining Corporation from the Gray Eagle mine, consisting of 32 claims eight miles north of Happy Camp, California. It is reported that the new flotation concentrator is treating about 600 tons of ore daily. The concentrates are trucked approximately 80 miles over the Klamath River highway to the Hornbrook rail station. Construction of the four-mile tramway to Thompson Creek, eliminating 19 miles of the haul, is expected to be completed soon. The Gray Eagle, which is believed to contain more than 1,600,000 tons of ore averaging 6

per cent copper, was reopened in the spring of 1942 by Newmont. The claims had been developed prior to the last war, but were never put into production because of inadequate transportation facilities and poor market conditions at the time. The company plans to employ about 260 men when the property is in full production. Charles F. Ayer, 14 Wall Street, New York, New York, is president of the Newmont Mining Corporation.

The Crescent Pacific Mining Company, headed by E. L. Oliver, 807 Newhall Building, San Francisco, California, is reported to have leased three of the Judy chrome claims from R. I. Hicks of Cave Junction, Oregon. Hicks, who has been producing chrome ore, will continue work on his remaining two claims of the Judy group. The property is in Del Norte County, California. The Crescent Pacific concern formerly operated a dragline dredge on the Applegate River near Medford, Oregon.

The Hecla Mining Company has taken a lease and option to purchase on the Blue Moon zinc mine located five miles north of Hornitos in Mariposa County, California, and preparations are being made by the new operators to start production immediately. As soon as preliminary work is completed, Hecla expects to be able to maintain production at about 200 tons daily. Ore is said to run, on the average, from 12 to 15 per cent zinc. The new operating company also is reported to have leased an old gold mill in the vicinity which will be remodeled into a flotation unit. Ralph Neyman, who has been mine superintendent for the company at Osburn, Idaho, will be temporary mine superintendent at Blue Moon, while Robert H. Dunn has been named resident manager at Hornitos. The Blue Moon is owned by the Red Cloud Mines, Inc., and originally was worked for gold. It is understood that Red Cloud opened up a considerable tonnage of zinc ore by shaft development operations but, due to the low price of zinc during the last few years, no further work was done. L. E. Hanley, Wallace, Idaho, is president and general manager of the Hecla Mining Company.

COLORADO

The National Lead Company and wholly owned domestic subsidiaries report for the year ended December 31, 1942, a net profit of \$4,246,370 after income and excess profits taxes and a reserve of \$480,000 representing post-war refund on excess profits taxes. This is equal to 72 cents a common share and compares with \$5,375,685 or \$1.10 a share in 1941. Headquarters are at 111 Broadway, New York, and western operations are carried on through the St. Louis Smelting and Refining Company in Colorado and the Combined Metals Reduction Company in Utah and Nevada. The Baroid Sales Division operates in Wyoming and California.

A new operating group has acquired the Highland Mary mines at Silverton, Colo-

rado, and plans to reopen the old Silver Ledge mine of the group. The property, which includes the Highland Mary and Shenandoah groups of mines, has been operated by Highland Mary Mines, Inc., since 1934 under the presidency and general management of Joseph M. Bradley of Silverton. Ore values are in gold, silver, lead, and copper. Equipment on the ground includes a 100-ton flotation plant.

Earl F. Crawl, president of the San Juan Gold King Mines, Inc., expects to resume work this season at his property near Silverton, Colorado. He holds a lease and option on the Gold King and the adjoining Gold Monarch property. Crawl is making present headquarters at the St. Francis Hotel, Denver, Colorado.

Joe Williams of Central City, Colorado, owner and operator of the Gold Cup mine has resumed operations and is employing

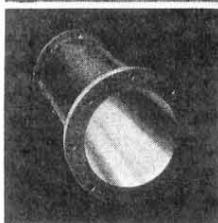
several men. The property is located in Chase Gulch near Central City.

According to reports, Denver, Colorado, capital has acquired the Plymouth mill from the Plymouth Milling Company at Montezuma, Colorado, and will reopen it for custom ores this spring. The plant is a 100-ton selective flotation mill, completed late in 1941 and designed to produce a gold and a lead-zinc concentrate. C. B. Van Deman, 321 East Bijou Street, Colorado Springs, is president of the Plymouth Milling Company. It is understood that among the regular customers of the plant will be the New York, Illinois, and Pennsylvania mines.

The Rico Argentine Mining Company at Rico, Colorado, shows a net profit of \$60,602 for 1942, before depletion. This compares with \$60,074 in 1941. Total income was \$471,291. From the 3,355 tons of lead



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Mill Heads from the Western States

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



ARIZONA

The Castle Dome Copper Company, Miami, Arizona, started actual mining operations on April 19 at the newly developed Castle Dome mine west of Miami. The company will take over sometime in May the 10,000-ton mill which now is nearing completion. The construction work preliminary to production at the Castle Dome was done by the W. A. Bechtel Company, 155 Sansome Street, San Francisco, California. The Castle Dome company, which is a subsidiary of the Miami Copper Company, Miami, Arizona, was awarded a \$9,000,000 loan by the Defense Plant Corporation for the development and equipment of the extensive, low-grade copper deposit in order that its metal content might be made available to the war effort. Mining and milling operations will be directed by A. S. Winther, general manager of Miami Copper Company.

Harlow M. Simpson, consulting chemist, 308 West Fifth Street, Santa Ana, California, and associates are reported to have recently acquired seven manganese claims from the owner, I. D. Ruppert. The property is located south of Aguila in Maricopa County, Arizona, and the new operators already have a preliminary crew of men working at the mine.

A crew of eight men is being employed in operations at the Alvera and Little Fannie mines located in the Little Dragoon Mountains east of Benson in Cochise County, Arizona. The 35-ton mill is reported to be operating at capacity, producing 70 per cent tungsten concentrates. The mines, which comprise the old Jess Wein property, are said to carry values in wolframite, hubnerite, and scheelite, and are owned by Alvera Murphy Rhine, Box 1167, Benson. Tom G. Shelton, Box 55, Dragoon, is foreman at the Alvera and Little Fannie properties.

It has been reported that operations at the "76" mine located in the Tip Top district north of Phoenix, Maricopa County, Arizona, have been suspended for the duration of the war, and that mining equipment has been removed from the property. The "76" is owned by the La Bajada Exploration, Engineering and Equipment Company.

The Shattuck Denn Mining Corporation is reported to have purchased another 75 Marcy mill and classifier for use in the company's expansion program at its Iron King mine at Humboldt, Arizona. Plans are being made for improvement of the flowsheet and it is expected that production will be increased to 300 or 400 tons daily, with zinc recovery being in greater proportion to the total tonnage than before. The Iron King property was pur-

chased by Shattuck Denn in June of last year, with H. F. Mills, Humboldt, remaining as general manager at the mine.

A road from the mill to the Falcon mine 10 miles west of Miami, Arizona, has just been completed by the Falcon Mining Company, Summit Lodge, Superior, Arizona. A 210-cubic foot compressor is in operation and mine development at the Falcon is being speeded up. Production is being maintained at the rate of about eight tons of tungsten ore per day. The Falcon Mining Company is headed by Steve Midler, president; George R. Sauers, vice-president; and R. A. Keller, secretary treasurer. A crew of six men is employed under the direction of Keller.

Announcement has been made of the granting of a Reconstruction Finance Corporation loan for mine rehabilitation to the Astonished Fairview Group near Superior, Arizona. New work planned for this property includes mucking and tracking the main tunnel to the ore body in order to carry on stoping operations. Operators of the Astonished Fairview property are Edward L. Nelson and Russell Hardy, 391 East Street, Globe, Arizona. Five men are employed at present. Main values are in copper.



CALIFORNIA

A. B. Smith, 334 Mason Street, San Francisco, California, is reported to have purchased the property of the Original Mining and Milling Company. The property comprises 11 mining claims in Mariposa County, California, mining equipment, and a milling plant. The mill unit will be remodeled by the new owner.

The first shipment of chrome ore from the Griffith mine near Orleans in Humboldt County, California, was made recently to the new government stockpile at Arcata, California. It is expected that shipments will be made daily from this property to Arcata. H. N. Griffith of Orleans is general manager for the Griffith mining interests and Joe Rivers, also of Orleans, is general foreman.

Development operations are progressing satisfactorily at the Valley View mine recently opened up by G. M. Trent, Auburn, California. The Valley View is located northeast of Lincoln in Placer County, California, and carries values in zinc and copper. A Reconstruction Finance Corpo-

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.

ration loan has been granted on the property for development of ground containing extensions of the main ore bodies. The mine is under lease to Trent from the owner, J. B. Landis, Auburn.

According to reports, the B. C. M. Mines partnership has been dissolved, R. D. Carse, Box 214, Tehachapi, California, having bought out the E. P. McMillen interests. It is understood that the partnership will be known in the future as the B. C. Mines with Carse as general partner and Vernon Bettin continuing as limited partner. The company holds a master lease on the Summit Lime Company property located about four miles south of Tehachapi in Kern County, California, and recently was allowed a new bonus price of \$30 per unit by the MRC as a new producer of tungsten.

Jake Woodhouse of Orleans, California, is reported to have resumed chrome operations in the Ferrin Flats-Red Cap Mountain district of Siskiyou County, California. He recently moved his bulldozer from the Gray Eagle copper property, Happy Camp, California, and is using it in bucking out the ore to the sorting and loading racks at his chrome property.

The Dodge Construction Company, which has been conducting preliminary work at the Cajalco tin property in the Temescal district of Riverside County, California, has started the test run for the Metals Reserve Company. Since speed is essential in this undertaking, the test is being carried on by open-pit mining methods, with a crew of 15 men being employed. About 5,000 tons of ore will be tested each week during the test run. It is estimated that \$25,000 will be spent on the test run, and if results prove satisfactory it is planned to erect a pilot mill to cost between \$5,000,000 and \$15,000,000. A ball mill formerly operated at the Plumas Eureka gold mine by the Portola Corporation has been moved in to the property and four concentrating tables and other units have been added to the reduction plant. Work is being done under the direction of Stephan Riess of Simi, California. Fred B. Wilder of 1216 North Edgemont, Los Angeles, is chemist, and Ray L. Biggy of Riverside is business manager for the company.

Four men are being employed by the Dillon Mines at the Treasure Box property, where gold mining operations are being conducted on a small scale. The Treasure Box mine is located near Nevada City, California. Frank Dillon of 533 East Broad Street, Nevada City, California, is president and general manager of Dillon Mines operations.

Plans are being made by James K. Remson of Grants Pass, Oregon, to resume operations at the Cyclone Gap property located in Del Norte County, California, just south of the Oregon line, as soon as road conditions permit. The U. S. Forest Service built several miles of access road to this property during 1942. The Cyclone Gap is a chrome property, and Remson has been hauling ore to the Metals Reserve Company depot at Grants Pass and then shipping to Sacramento, California.

The Haunganese mine is reported to be in actual production, the first shipment of

10 tons of manganese having been delivered to the Metals Reserve Company stockpile at Quincy, California. Another 10 tons are ready for shipment, but the ore is being held at the mine while repairs to the truck are being completed. The mine is located near Twain in Plumas County, California, and assays of ore from the claims are said to run about 50 per cent manganese. The operators are Henry Haun and his partner, Bob Holstrom, both of Quincy.

The Lava Cap Gold Mining Corporation has reported an operational loss for the month of February, further announcing that the company has been operating for the past six months at below-normal figures. The company, which operates in the Banner mining district east of Grass Valley, California, was allowed to continue work by the War Production Board. Lava Cap is producing about 400 tons of gold-silver ore daily, as well as about 150 tons of iron sulphides which are shipped to the Selby smelter for use as a flux in the production of lead. The company employs a crew of 325 men under the direction of Otto E. Schiffner, Nevada City, California, general manager.

Luke Williams, 226 South Church Street, Grass Valley, California, who owns the mineral rights 50 feet below the surface for 720 acres of land near Wolf Creek in Nevada County, California, as well as several surface tracts, reports that Thomas E. Farley of Hollywood, California, and George E. Hook of Auburn, California, have made an important discovery of lead, zinc, and silver ore on his holdings. Tests have revealed that the ore runs 10 per cent lead, 8 per cent zinc, 6 ounces silver, and 60 cents in gold per ton. Some difficulty, however, has been experienced in the attempt to gain access to the mineralized area of the tract, as the owner of the land surfaces, James Walsh of Auburn, is selling his rights to Jack Gotcher. Negotiations for a road through the property are proceeding at present.

The Volo Mining Company recently took over three copper properties located in the Pilot Hill district of Eldorado County, California. The mines are the Lilyama, Funny Bug, and the Pioneer, and it is reported that the Volo concern is engaged in opening up the three properties, with a single shift of 14 men being employed. The Volo Mining concern has renewed operation of

WANTED: DEEP-SEA MINERS

From the Washington Chamber of Commerce comes a pathetic story of a misunderstood mining company. It seems that the company spent over \$100,000 in development work and reached a point where a mill seemed justified. Furthermore, the dump revealed ore, left as uncommercial by former operators, but which under present conditions could be handled profitably. Knowing the ore came from a certain deep winze, now 200 feet under water, the mining concern applied for a small RFC loan for unwatering purposes. After the usual necessary though annoying correspondence, the RFC requested a complete assay map of the winze the company desired to unwater. So now the company is really getting somewhere and all it needs at the moment is a mining geologist with deep sea tendencies. All applications will be considered.

its mill west of Placerville on a 150-ton daily basis. In June of last year the plant was converted from gold to chrome milling, and for a time handled from 50 to 80 tons of chrome ore daily. Since December, when the plant was closed down, five 56-Fagergren flotation cells have been added to the flowsheet. Forest V. Phillips of Placerville, California, is president of the Volo Mining Company. L. C. Baldwin is in charge of mine operation, and George Phillips is mill superintendent.

Consolidated Tungsten is reported to be shipping about a ton of "spuds" weekly from its operations located in Drum Valley, in addition to its regular weekly output of approximately 4,000 pounds of concentrates. The "spuds" need no milling, being marketed just as they are picked from the hanging wall, and consistently run better than 70 per cent WO₃. Andrew Thickstun, Box 1472, Fresno, California, is consulting engineer for the Consolidated Tungsten concern.

Actual production has been started at the Aetna quicksilver mine located near Aetna Springs, California. The mine is being operated by the Basin Montana Tunnel Company under agreement with the Metal Mining Exploration Company. Allan

A. Ryan, Jr., 1 East Fifty-seventh Street, New York, New York, is president of the Basin Montana Tunnel group, while the Metal Mining Exploration Company is headed by John A. McDonald, 912 Russ Building, San Francisco, California.

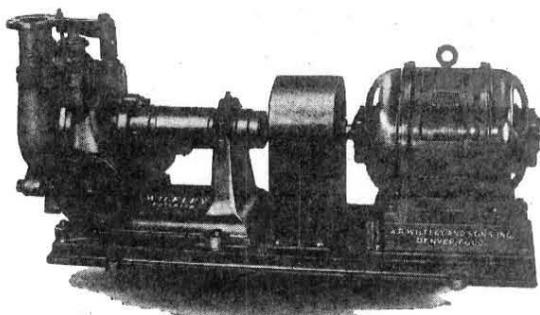
A crew of approximately 20 men is being employed in development work at the Little Castle Creek mine and the Coggins chrome property near Dunsuir in Shasta County, California. The Little Castle Creek property is owned by the Little Castle Creek Company and the Coggins mine is owned by J. K. Remsen of Dunsuir. Operations at both projects are under the direction of Manley M. Brown, president and general manager of the Little Castle Creek concern. C. H. Whitney is superintendent. The mine address for both properties is 404 Sacramento Avenue, Dunsuir.

According to reports, a promising deposit of manganese has been discovered at the Gibraltar mine located near Crescent Mills in Plumas County, California. The property is being developed by George Maxwell, owner.

It is expected that construction of a concentration plant at the Marsh Flat chrome property in Tuolumne County will be started by the Marsh Flat Chrome Associates during May. The mine consists of five claims at which the company has been carrying on development operations for some time. Marsh Flat Chrome Associates is a recently organized partnership, with Partners C. A. Lindsay and F. A. Gowing, Chinese Camp, California, acting as general manager and superintendent respectively. Offices for the concern are at 582 Market Street, San Francisco, California.

The Lind Mining Company is reported to have leased its Jenny Lind mill at Hornitos, California, to the Hecla Mining Company of Wallace, Idaho. It is understood that Hecla plans to revamp the mill and add to the flotation and filter capacity for the purpose of recovering zinc, copper, and lead values. The ore to be treated at this mill will come from the Blue Moon mine at Hornitos, which Hecla recently acquired under option from J. H. A. Williams and the Red Cloud Mines, Inc., Hornitos. P. R. Bradley, Jr., Jamestown, California, heads the Lind Mining Company and L. E. Hanley of Wallace, Idaho, is president of the Hecla concern.

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the judgment of the committee the price should be 71.11 cents rather than the 50 cents indicated in S.35 we should not interpose any objection thereto. I wish to reiterate, however, that the lower price will naturally encourage broader utilization of silver in the war effort.

YOUR committee also has before it for discussion S.192, introduced by Senator Murdock. This bill would authorize the sale or lease for war purposes of any silver held or owned by the United States, provided six specified conditions are met.

I have already outlined our views with respect to the matter of price and the condition reserving ownership and possession of silver in the Treasury equal to outstanding silver certificates. The other conditions, however, are not in S.35, and in my opinion their meaning and scope are not entirely clear. For instance, the third proviso that no silver shall be sold until all current supplies of imported silver and domestically mined silver shall have become reduced to an immediately available, aggregate stock of 20 million ounces or less, presents several questions. Does this mean working supplies in the form of stock in the hands of refiners, distributors, and manufacturers? If so, I believe it would be very difficult and time-consuming to obtain accurate figures as to such stocks. Furthermore, I believe that 20 million ounces is too small a figure for minimum working supplies, considering the increased uses of silver in the war program.

The following proviso which purports to reserve 10 million ounces for the exclusive use by manufacturers of nonessential articles is also not clear. The same is true of the proviso which would require that no silver be sold for other than consumptive purposes. What is meant by the term "consumptive"?

In general, I feel that S.192 attempts to impose so many burdensome and possibly confusing conditions upon the release of Treasury silver, that I do not feel its enactment should be approved.

UTAH ENGINEERING STATION OFFERS RESEARCH FELLOWSHIPS

UTAH Engineering Experiment Station of the University of Utah is offering several research fellowships for the school year, each carrying a stipend of \$600. Fellowshipmen are exempted from the non-residence fee, but are required to pay other university fees which average \$100 for the school year. The fellowships are open to college graduates with the proper training in mining, metallurgy, chemistry, geology, or engineering. Fellows will register at the university and become candidates for the degree of master of science. Requirements for the degree ordinarily can be completed in one year, unless deficiencies exist in undergraduate training.

The work of the station involves problems dealing with the mineral industries and resources of the state. Research work is conducted in mine ventilation, ore dressing, ore dressing microscopy, flotation fundamentals, geology and mineralogy or mineral resources, pyrometallurgy, hydrometallurgy, etc.

TREASURY SILVER FOR WAR AND CIVILIAN USES

S. 35

Introduced by Green of Rhode Island. Identical with S. 2768 as reported to the Senate December 3, 1942. Provides that the Secretary of the Treasury, upon recommendation of WPB, can sell or lease upon terms he deems advisable any government-held unpledged silver for use "in furtherance of the war effort" at an average price of not less than 50 cents per ounce.

S. 192

Introduced by Murdock of Utah. Authorizes the President through the Treasury, upon recommendation of WPB, to sell or lease upon such terms as deemed in the best public interest, for use strictly in the war effort any silver held or owned by the United States at not less than 71.11 cents per ounce; provided that silver equal to the face value of all outstanding silver certificates be held by the Treasury and that no silver shall be sold under this Act until all current supplies of imported and domestically mined silver are reduced to an immediate available aggregate stock of 20 million ounces or less. Out of any silver stocks acquired by federal agencies other than the Treasury 10 million ounces per annum shall be reserved and made available for the exclusive use of and purchase, at not less than current market price, by domestic manufacturers (1) for the manufacture of silver articles for civilian use, and (2) for the converting of existing plants of such manufacturers to war production. No silver shall be sold under the Act for other than consumptive purposes and any silver sold or leased which is not actually used in connection with the war effort shall be resold to and purchased by the Treasury at 71.11 cents per ounce, or, in the case of any silver leased under this Act, returned within one year after the termination of the war. Authority to sell or lease silver under this Act shall expire on December 31, 1944.

It is understood this would permit (1) sale of unpledged silver for consumptive use, and (2) lending of pledged silver for non-consumptive use, in the war effort.

TWINING LABORATORIES BUILDS ANNEX TO PLANT

THE Twining Laboratories, Box 1472, Fresno, California, has announced the construction of an annex to its plant at Fresno. The annex provides 2,000 square feet of floor space for the handling and treatment of tungsten concentrates alone.

A new Dings electro-magnetic separator, built especially for Twining Laboratories and having a high magnet intensity of 108,000 ampere turns, is being shipped to the new annex. A new type Hardinge dry-grind, quick-discharge ball mill and concentrating table also are part of the new equipment being added to the Twining plant.

RESTRICTIONS ON THE USE OF HIGH-GRADE CHROMIUM ORES

AS a further measure to conserve high-grade chromium ores, producers of ferrochromium have been instructed to use a specific proportion of low-grade ores in a directive issued by the War Production Board pursuant to Order M-18-a.

This move, discussed at a recent meeting of the Ferrochromium Producers Industry Advisory Committee, requires each producer of ferrochromium to use, in the production of high-carbon ferrochromium, chrome ores having a weighted chromium-to-iron ratio not exceeding 2.6 to 1. In a broad way, this means that each manufacturer will blend about one ton of low-grade chemical ore with about four tons of high-grade ore in order to obtain this ratio of chromium to iron. On the other hand, the ratio may also be obtained by using natural ores having a ratio of less than 2.6 to 1.

The direction to producers is flexible in that a higher ratio may be used for a portion of production if the average consumption of chromium for monthly ferrochromium production does not exceed the 2.6-to-1 basis.

Officials of the ferro-alloys branch of the steel division said that these restrictions are expected to result in production of a high-carbon ferrochrome containing about 65 per cent chromium. Stabilization of the chromium content will permit the division to calculate more accurately the requirements for the high-grade ores.

Producers unable to comply with the terms of the directive may apply for relief to the Chromium Section, Ferro-Alloys Branch.

MINE PRODUCTION OF SILVER DECREASED IN FEBRUARY 1943

SILVER production from domestic mines was 3,515,130 fine ounces in February, a decrease of 6.5 per cent from the output in January, according to the Bureau of Mines. The average daily output was 28 per cent below that of February 1942.

A 37 per cent increase in silver output in Colorado during February resulted from a railroad tie-up in southwestern Colorado which prevented much of the mine concentrates produced in January from reaching the smelter until February. It is expected that Colorado production will remain fairly constant throughout the year.

Production in Washington, though larger in February than in January, will show a decline for the year because one of the largest silver producers, which together with a copper mine produced 90 per cent of the state's silver, is principally a gold mine and has been closed. Production in all other states declined in February.

Idaho, the largest silver-producing state, recorded a decrease of 6 per cent. One of the state's two large silver mines has virtually closed down, but the other is continuing work as the ore also contains antimony, a strategic metal recovered as a by-product. Production in Montana decreased 13 per cent; in Utah, 7 per cent; and in Arizona, 8 per cent.

METAL WORKERS GIVEN PAY HIKE BY NONFERROUS METAL BOARD

THE Nonferrous Metals Commission of the War Labor Board has issued 25 directives affecting wages, union status, and working conditions of 16,708 employes in 11 states from Washington to New Jersey. Final decision in these cases, according to Commission Chairman Charles A. Graham, had been reached prior to the hold-the-line order by President Roosevelt, although public announcement had not been made at that time.

The largest groups of employes affected by the decision were the 6,145 Arizona employes of the Phelps Dodge Corporation to whom a wage raise of 26 cents per shift was given. The Phelps Dodge workers were represented by the metal trades department of the A. F. of L. with district councils at Bisbee, Douglas, Ajo, and Verde copper mines. The pay increase was ordered retroactive to the beginning of the pay roll period nearest February 20. The request for a union shop was denied, but the commission ordered previously incorporated maintenance of membership provisions to be continued.

The commission also ordered a general wage increase of 26 cents per shift for 1,450 employes of the Inspiration Consolidated Copper Company, 1,371 employes of Miami Copper Company, and 285 employes of International Smelting and Refining Company, all located in the Globe-Miami district of Arizona.

Five companies in the Middle West were granted a wage increase of 50 cents a day, while the 2,000 employes of Calumet & Hecla Consolidated Copper Company of Calumet, Michigan, received \$1 a shift increase. One hundred twenty-seven Montana workers employed by four companies received pay increases—\$1 a day in most cases. The companies involved were the Monongahela-Mount Washington at Helena, Anaconda Copper at Kalispell, Metals Reserve at Butte, and Anaconda Wire and Cable at Great Falls.

Workers of the Phelps Dodge Refining Company were also covered in the directives, an increase of 11¼ cents an hour going to 414 employes of the El Paso, Texas, plant, retroactive to October 1, 1942; and a boost of 5 cents an hour, retroactive to September 18, 1942, being ordered for the 1,000 employes of the Laurel Hill, Long Island, plant. Wage increases of 5 cents an hour, retroactive to July 1, 1942, were ordered for the 1,875 American Smelting and Refining Company employes at Perth Amboy and Newark, New Jersey, and Denver, Colorado. At the Arkansas Valley plant of A. S. & R. the increase was 11¼ cents an hour, retroactive to August 1, 1942, with 264 employes participating.

GUGGENHEIM BEQUESTS TO THREE COLORADO SCHOOLS

THREE educational institutions in Colorado received bequests from the estate of Simon Guggenheim. The Colorado School of Mines and Denver University each received \$103,812; and Colorado University, \$207,627.

USGS WILL MAKE INTENSIVE SEARCH FOR QUARTZ CRYSTALS

Recognition of the nation's desperate need for quartz crystal, for use in radio work, is shown in the announcement that geologists for the U. S. Geological Survey have been assigned to the various western states to make a survey of each and every prospective source from which these quartz crystals may be secured.

Mining men who have found any indication of the presence of these crystals in their properties or know where any are to be found are urged to contact the USGS at once in order that those properties may be investigated. Included in the geologists' equipment will be an inspectroscope for testing rock crystals for optical twinning and for inclusions.

The price for piezo-electrical material is up to \$36 a pound for best quality crystals in large sizes, but the average price, since the top grades are very scarce, ranges from \$1 to \$10 per pound. Quartz crystals for radio use must be free of flaws, bubbles, and phantoms, but may be yellow or light smoky in color. Amethyst (purple to blue) and rose quartz cannot be accepted. The minimum size of crystals acceptable is one inch diameter to two inches in length, or about one-quarter of a pound in weight. Thirty per cent of such crystals must be free of flaws. Although a premium is paid for quartz with crystal faces, unfaced material also is usable.

Some of the best quartz is found as water-worn cobbles in streams. Surface stain does not affect the value of the quartz, although it does make recognition of good material difficult.

Quartz crystals should be sent to W. A. Roche, Quartz Testing Laboratory, U. S. Bureau of Standards, Washington, D. C.

If the material sent to the Bureau of Standards is for sale, notice should be sent to H. Gordon Taylor, Miscellaneous Minerals Division, WPB, Washington, D. C., stating that the samples have been sent for testing and grading and that they are offered for sale. Those crystals found acceptable will be paid for by the Metals Reserve Company.

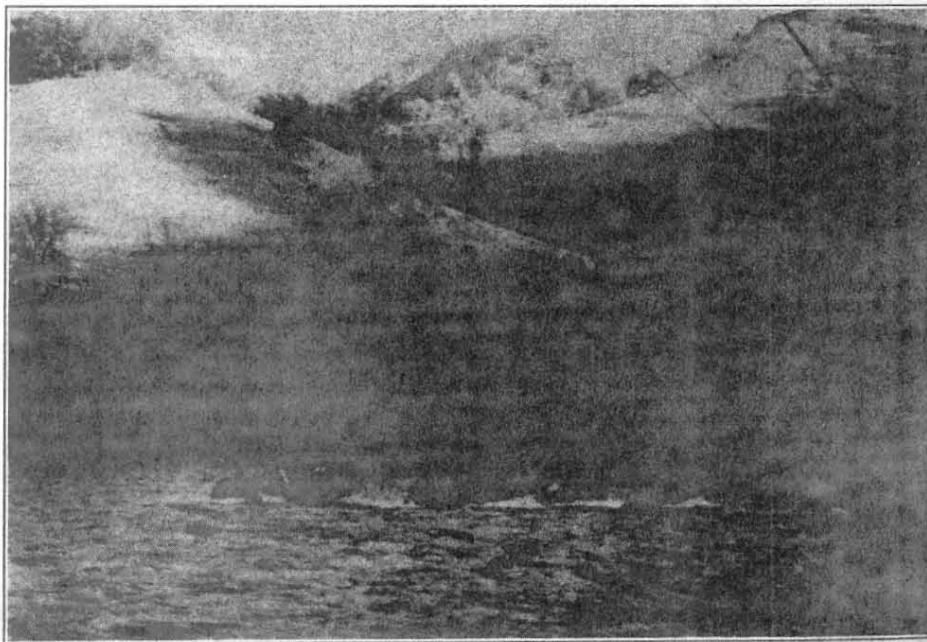
If the samples are sent to the Bureau of Standards merely for testing, H. M. Bannerman, U. S. Geological Survey, Washington, D. C., should be notified in order that they may be inspected by the USGS. If the material submitted does not grade up to specifications and is not marketable, it will be rejected, but will be returned to the shipper if so requested.

Quartz crystals are needed for making radio oscillators to be used on tanks, planes, and walkie-talkies. Some of the large bombing planes use several scores of oscillators in order to secure variable wave lengths for transmission.

SMELTERS IN FIVE STATES ARE PLACED ON 48-HOUR WEEK

SMELTING and refining of 22 nonferrous metals considered essential to the war effort has been placed on a wartime 48-hour work-week basis in five western states, under an order issued by William K. Hopkins, director of the twelfth region, War Manpower Commission. States included in the order are Arizona, California, Nevada, Oregon, and Washington.

Metals affected are aluminum, antimony, arsenic, beryllium, chrome, cobalt, columbium, copper, lead, magnesium, manganese, mercury, molybdenum, silver, tantalum, tin, titanium, tungsten, uranium, vanadium, zinc, and zirconium.



Because of the remote location of the Garnet Dyke mine, this pack train, shown crossing the Kings River near Fresno, California, brings out scheelite concentrates daily for a distance of eight miles by mule trail. The woman leader is the owner and operator of the string. The Garnet Dyke, which comprises two claims located 13 miles from the Kings River State Fish Hatchery, Fresno, is being worked by Hal, M., and Bill Sheridan. Andrew Thickstun, Box 1472, Fresno, is consulting engineer.

Poindexter, Box 1502, Prescott, Arizona, who holds the mine under lease from the owner, Mrs. C. Hatch of Los Angeles, California. Values are in lead, silver, and gold.

The Miami Copper Company, Miami, Arizona, has reported a net profit for 1942 of \$984,159. This amount is equal to \$1.32 a share and compares with a net profit of \$756,232 for 1941. Sam A. Lewisohn of 61 Broadway, New York, New York, is president of Miami Copper and A. S. Winther of Miami, Arizona, is general manager of operations for the company.

The Liberty Hill Gold Mines, Ltd., has started sinking operations at its Hackberry mine located north of Mayer in Yavapai County, Arizona, with a crew of 22 men being employed in the work. It is planned to treat ore from the Hackberry at the company's Golden Turkey mill at Cordes, Arizona. The Liberty Hill concern acquired the Hackberry about a year ago. R. P. M. Davis, 2356 Hollyridge Drive, Hollywood, California, is president of Liberty Hill.

Sampling of ore deposits is being undertaken at the Alpha lead-silver mine as the result of a \$5,000 loan granted by the Reconstruction Finance Corporation. The property is located in the Wallapai mining district of Mohave County, Arizona. Other work contemplated includes unwatering of the 100-foot shaft and lateral workings west of the main tunnel portal and unwatering of the winze 800 feet from the portal of the 1,200-foot tunnel. The mine

is being operated under a limited partnership by Ralph R. Langley, 1045 South Bedford Street, Los Angeles, California.

Unwatering and rehabilitation of the 300-foot shaft and lateral workings to make possible sampling and mining operations are being undertaken by the Hidden Treasure Mining Company, Inc., 137 West Monroe, Phoenix, Arizona. The shaft is understood to be open now to 175 feet below the collar. The Hidden Treasure property is located in the Black Canyon mining district of Yavapai County, Arizona. The corporation has an assignment of a purchase agreement, the price being \$40,000 payable by 10 per cent royalty with a \$100 monthly minimum. Work being done at this property was made possible through a loan of \$5,000 recently granted by the Reconstruction Finance Corporation.



Notice has been given that the annual meeting of shareholders of the New Sutherland Divide Mining Company, Suite 1111, 310 Sansome Street, San Francisco, California, will be held at the company offices on June 10, 1943. New directors for the mining company will be elected at that time. The company recently entered into a lease for the development and operation of its mining property in Inyo County,

California, for a period of 10 years. The lessees have installed necessary machinery, completed a camp at the site, and are making regular shipments to the smelter. It is understood that arrangements for the possible sale of this property are being considered by New Sutherland. Values at the mine are in lead, silver, and gold. John Gallois is president of the New Sutherland Divide Mining Company.

The Newmont Mining Corporation has reported an estimated net worth per share of \$47.56 for the quarter ended March 31, 1943. This amount compares with \$42.14 a share on December 31, 1942, and with \$40.26 per share for the quarter ended March 31, 1942. Charles F. Ayer, 14 Wall Street, New York, New York, is president of the Newmont concern.

C. F. Allebrand of Glendale, California, is reported to have a crew of six men working at his Jasper Point manganese property at Jasper Point in Mariposa County, California. Operations were started at this project recently after a Reconstruction Finance Corporation loan was approved for the property. A complete power plant, machine shop, and quarters for the workers are being built at present. J. H. Kelm of Raymond, California, former owner of the mine, is directing work for Allebrand.

Operations have been resumed at the Patterson-Spivey mine on Rock Creek near Quincy, Plumas County, California, following the winter shutdown. One of the county's largest chrome producers, the mine delivered over 400 tons of ore last

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fall to the government stockpile at Quincy. The ore ran as high as 52.53 per cent chrome. However, poor road conditions, caused by inclement weather, forced suspension of operations at the property in January. The mine is owned and operated by Ellis R. Patterson and E. V. Spivey, both of Quincy.

S. Menchini, superintendent of the **Rough Diamond** crystal mine in Chili Gulch near Mokelumne Hill, California, has reported that a number of crystals have been taken out recently. Old workings have been reconditioned, the shaft enlarged and retimbered, and preparations completed for the development of virgin territory. The mine, owned by John J. and Thomas McSorley of Mokelumne Hill, California, was reopened last fall after a shutdown of 75 years.

The **Western Empire Mines**, Santa Barbara, California, has leased the **Collins** chrome mine and the **Nigger Hill** and **Beal Lake** manganese properties, in Trinity County, California, all owned by M. H. Collins of Platina, California. It has been estimated that 500,000 tons of 40 per cent manganese ore and about 1,000 tons of chrome ore will be produced from the three properties. Shipments will be made to the government stockpile at Anderson, California. Road construction to the manganese mines will be started sometime in May, and all necessary machinery and equipment is expected to be on the ground by June 1. The company also is carrying on development work at the **Granview** chrome mine in Humboldt County, Califor-

GOLD MINE EMPLOYMENT DROPS

A recent survey of employment in Nevada County, California, gold mines reveals that 504 miners are being employed this year in comparison with 2,161 a year ago. The **Relief Hill** mine, a hydraulic property near Bloomfield, California, which was granted an extension of operations by the WPB, is employing eight men. **Idaho Maryland Mines Corporation**, although closed down, has 110 men on its payroll for maintenance of its **Grass Valley** gold mines. The **Empire Star Mines Company** of the **Grass Valley** district is reported to be hiring a crew of 98 men. The **Lava Cap Gold Mining Corporation**, which has been allowed to continue regular mining operations by the War Production Board because it produces a flux needed for lead production at the **Selby** smelter, operates with a crew of 288 miners.

Most of the miners employed are in deferred selective service classifications because of age or marital status. **Idaho Maryland** and **Empire Star** miners are chiefly older men who have been in the companies' employ for several years and are permanently established at **Grass Valley** or **Nevada City**.

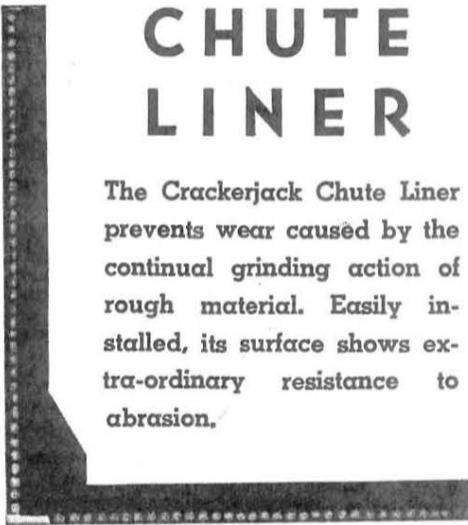
nia, and the **Schmitt** manganese property about two miles south of **Tracy**, **Stanislaus** County, California. The **Western Empire Mines** is a newly organized concern and

also operates the **Mica Gem** mine in Nevada. **A. L. Mecham**, Box 262, **Santa Barbara**, California, is president; **N. H. Rice** is vice-president and general superintendent; and **G. Wallace Walker** of **Los Angeles** is consulting engineer for the company.

Lewis F. Johnson, **Auburn**, California, is reported to have acquired a group of copper claims six miles east of **Auburn** in **Placer** County, California. In addition to good copper values, the ore is said to carry substantial gold-silver values. The vein averages from four to eight feet in width, and has been traced for a distance of 2,000 feet on the surface. A fair amount of ore has been developed in an inclined shaft at the property. Primary development will include continuation of the present tunnel for another 150 feet to intersect the vein 80 feet below the bottom of the inclined shaft, and after development of the upper levels has been completed it is planned to drive a main working tunnel 800 feet lower from a nearby canyon. A small crew is at work now installing machinery and equipment, but it is expected that about 40 men will be employed when regular production is under way. Surface work is reported nearly completed and two shifts are working underground.

George Maxwell of **Quincy**, California, is engaged in building an access road to the **Gibraltar** mine located near **Crescent Mills**, **Plumas** County, California. **Maxwell**, who is president of the **Maxwell Construction Company** of **Quincy**, recently discovered a promising deposit of manganese

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ore at the Gibraltar and expects to start mining operations as soon as the road has been completed.

The American Potash and Chemical Corporation and domestic subsidiaries have reported a 1942 net income of \$1,606,144 after federal income taxes, etc. This amount is equal to \$3.03 per share and compares with \$1,054,860 or \$2.00 a share for the year 1941. The company operates at Trona, California, and is headed by F. Cecil Baker, 70 Pine Street, New York, New York.

The first carload of approximately 50 tons of copper ore has been shipped from the Newton copper mine in Amador County about seven miles from Jackson, California. The ore went to the Garfield plant of the American Smelting and Refining Company in Utah. J. H. Lester, Jackson, who recently reopened the mine under lease from Fred Dufrane, expects to be able to ship a carload of ore daily from the mine within a short time.

A diamond drilling program has been completed by the Mountain Copper Company, Ltd., at its Napoleon copper mine which is located in the Telegraph City district near Angels Camp, Calaveras County, California. The diamond drilling work was done by H. S. Terbush, who is now engaged in similar work in Nevada. The Napoleon mine was an important copper producer during the last war but was not operated again until it was taken over recently by the Mountain Copper concern. The vertical shaft is said to be down to the 250-foot level and may be extended another 100 feet by Mountain Copper. Development work at the mine is reported to have been progressing rather slowly as the mine workings were in very bad condition when the property was reopened. William F. Kett, 216 Pine Street, San Francisco, California, is general manager for the Mountain Copper Company, Ltd. J. M. Basham of Shingle, California, is superintendent of operations at the Napoleon and James H. Wren is mine foreman.

The County Board of Supervisors of Riverside County, California, is reported to have arranged for the establishment at Banning, California, of a milling plant to handle fluorspar ore from the Yuma district and to do custom milling for mining interests in Riverside County and along the Colorado River. The fluorspar ore will come from the Sonora mine northeast of Yuma, Arizona, which is operated by the Leadspar Mining Company, headed by Allen Woodside and F. T. Smith both of Los Angeles, California. The mill to be installed at Banning is owned by Essential Minerals, Ltd., headed by E. M. Mobley and Sam Howard, 617 Black Building, Los Angeles, California. The Essential Minerals interests are understood to have entered into an agreement with the Leadspar concern to handle its tonnage.

Present development work at the Western Manganese Mines' property near Crescent Mills, Plumas County, California, has indicated about 10,000 tons of ore in sight. It is expected that, with improvement of the roads and weather conditions, mining operations will be stepped up at



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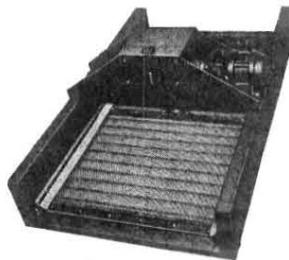
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in the South Mineral Creek district and is under the management of A. J. Yahn of Silverton.

Production will be started from the San Antonio group of claims by the Denver Equipment Company as soon as milling facilities can be installed. The property includes the Congress, Koehler, Camp Robber, and San Antonio mines lying partly in San Juan and partly in Ouray County. Ore values are in copper and lead with some silver. A. C. Daman, 1419 Seventeenth Street, Denver, is president and general manager.

It is reported that Joseph M. Bradley of Silverton, Colorado, who holds title to the Silver Ledge mine in the Chattanooga district near Silverton, will reopen the property in the near future. For the past 25 years only intermittent work has been done in the mine, a former zinc producer. It is probable that a crosscut will be driven to the shaft to drain the mine.



IDAHO

Equipment from the idle Minnie Moore mine near Hailey Idaho, was purchased by the Camas Trust, operating 12 miles west of Hailey. Electrification of the Camas Trust property is being completed and soon regular production of about 150 tons of ore daily will be started. Frank Plugoff of Hailey is superintendent. Output will be sent to the American Smelting and Refining plant at Salt Lake City, Utah.

The General Mines Corporation, H. G. Loop, 402 Empire State Building, Spokane, Washington, president, is reported to have granted the request of the Federal Mining and Smelting Company for an extension of the option on General Mines stock. Federal optioned controlling interest in the General Mines concern in the fall of 1941 and has been developing the property, which adjoins Federal's Page-Blackhawk ground, having expended \$25,000 on the venture. Scarcity of labor and general difficulties confronting mine operators at this time necessitated the request for an extension of time. The extension will apply also to subsequent payments.

Considerable expenditure of both time and money will be necessary before the enlarged holdings of the Monitor Mines Company near Wallace, Idaho, are on a full producing basis. The company recently acquired the Portland property, which adjoins the Monitor ground on the south, and now has a total of 62 patented and 35 unpatented claims in the Sunset district of Shoshone County, including the Amazon-Manhattan, Carlisle, Silver Tip, Sitting Bull, Parrott, Tuscumbia, Idora, and Toughnut veins. In addition, Bureau of Mines diamond drilling in the Parrott-Silver Tip area revealed several unexplored veins. The Amazon mine was reopened and rehabilitated last year and some work was done on the Carlisle mine. The Monitor company earned a net profit of \$9,127 in 1942 on royalties from a lease on the Virginia portion of the Carlisle vein. Henry L. Day of Wallace is president and man-

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**GABBS IS NAME OF NEW TOWN
BUILT IN NEVADA DESERT**

ON JUNE 1 the name of the recently established postoffice at Toiyabe, Nevada, will be changed officially to Gabbs. The \$1,000,000 town, being constructed under the supervision of the Defense Plant Housing Authority, is designed for the employes of Basic Magnesium, Inc. Of the 60 homes to be constructed, over 25 are completed and occupied. In addition to these, there will be a staff hotel for men employes and an apartment house for single women employes. A school, recreation hall, and community center also are included in the plans.

The school is a one-story building, accommodating 250 pupils and featuring the latest in school construction. Each home, individual in design, contains an electric refrigerating unit, a white porcelain oil kitchen stove, oil heating floor unit, laundry tubs, linoleum floor in the kitchen, and many built-in features. The hotel for men will accommodate 44, and 33 women will live in the single and double apartments for the women employes. The community center and recreation hall will provide facilities for motion pictures, dancing, and all type of games.

An adjoining federal public housing project will provide 214 units and 182 of these are assigned to Basic Magnesium. Basic Refractories, Inc., at Brucite will receive 15 of the remaining units and Sierra Magnesite will have the other 17.

**NEW SOURCE OF TANTALUM IS
DISCOVERED IN NEW MEXICO**

AN INCREASED supply of tantalum will be available for the nation's war plants as the result of a discovery of tantalum ore in New Mexico and research work conducted by the Bureau of Mines in its pilot plant at Rolla, Missouri. Tantalum, used for special carbides and electrical equipment, is noted for its extremely high melting point and its acid-resisting qualities.

The discovery was made by a private geologist while conducting a routine mine examination in New Mexico. He submitted a sample of the ore to the bureau's pilot plant at Rolla and tests indicated a high percentage of tantalum. As a result additional ore was sent for metallurgical tests.

Four tons of ore were used in early beneficiation tests, and pilot plant 'runs' were continued until all the kinks in the treatment process had been ironed out. Altogether, 30 tons of ore were handled and more than three tons of high-grade concentrate were produced in the pilot plant. Today, the concentrate is being stockpiled at Rolla awaiting removal by the Metals Reserve Company, which is paying \$3.50 a pound, or \$7,000 a ton for the beneficiated material. Plans are being made for development of the New Mexico property, and for installation of equipment to utilize the bureau's process in turning out concentrate if sufficient reserves are indicated.

Because of its rarity, tantalum remained a laboratory curiosity for a long time. Its

first commercial use was in filaments of electric light globes, and then it leaped into prominence because of its widespread use in radio tubes. Carbides of tantalum are used in wire-drawing dies, in steel-cutting tools, in wear-resisting parts of machines, and in dies for cold-nosing artillery shells. Because of its power to resist corrosion, tantalum is in demand by manufacturers of surgical and dental instruments, electrical contacts, pump and valve parts, and temperature control apparatus. Most of the tantalum used in the United States has been imported from the Belgian Congo, Brazil, or South America.

**SOUTH DAKOTA GOLD CLOSING
DID LITTLE GOOD—MUCH HARM**

LESS than half of the 919 miners who were displaced in the Black Hills of South Dakota, when gold mining operations were halted by the War Production Board last fall, have been placed in other mining jobs, according to figures released by A. W. Sandell, area representative of the War Manpower Commission. Of the 919 workers, who were displaced by the order, the report said, 393 were placed in western nonferrous mines and several were placed in mines in other parts of the United States out of the 515 who were referred to mining companies.

Two hundred workers, he reported, were referred to employment in defense construction work, shipbuilding, essential farming, foundries, sheet metal shops and defense industries; 100 were placed in the Black Hills ordnance depot at Provo; and 175, who were unable to work in some essential activity or had independently secured defense work, were granted permission to accept employment in other defense areas. A companion order to the gold mining suspension edict had prohibited western employers from hiring displaced gold miners without permission of the U. S. Employment Service.

Hundreds of families have moved from the Black Hills because of the gold mining suspension. In the mining communities of Lead, where the Homestake gold mine is located, and nearby Deadwood, 568 electric power accounts have been dropped and 300 telephones have been disconnected. More men will be released by the Black Hills mines in June when milling operations must cease. Milling of broken ore has been permitted at two mines—the Homestake and the Bald Mountain at Trojan—since the halting of mining in October, but June 8 has been set as the deadline for these operations. At Trojan about 40 of the 80 regular employes have been retained since October in milling and maintenance work. The Homestake is still employing about 900 workers in milling and essential activities, some of which, such as lumbering and foundry work, will be continued.

Also affected by the order in the Black Hills was the Canyon Corporation mine at Maitland near Deadwood, which was closed down in December. The Holy Terror mine, a fourth Black Hills mine, voluntarily closed earlier because of a labor shortage.

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EAGLE PICHER LEAD COMPANY MAKES ANNUAL REPORT

THE Eagle Picher Lead Company, American Building, Cincinnati, Ohio, has reported for the 11 months ended November 30, 1942, a net profit of \$1,250,174 after depletion and depreciation, federal and state taxes, and an appropriation of \$500,000 to the inventory reserve. This profit is equal to \$1.37 a share on common stock and compares with a net profit of \$1,423,666 or \$1.56 a common share for the 11 months ended November 30, 1941. Figures for the 11-month period are used because of a change in the company's fiscal year.

The Eagle Picher concern's mining operations are conducted by the Eagle Picher Mining and Smelting Company, a wholly owned subsidiary, and it is understood that during the 11-month period an expenditure of \$1,531,570 was made for the company's mining and smelting facilities. Of that amount, \$1,125,921 were spent for developing and equipping new mines and reconditioning previously abandoned properties; \$186,975 for expanding concentrating mill facilities; and \$80,836 for expanding smelting facilities and extending processes.

During the year the company reopened several properties in the Taxco, Guerrero, Mexico, area. The district in which these development operations are being conducted has produced quantities of gold and silver over a period of centuries, but the Eagle Picher concern is working the property for its zinc values to satisfy war demands for this strategic metal.

Eagle Picher paid regular dividends during the year on the company's 6 per cent cumulative preferred stock and 60 cents per share was declared and paid on the common stock. The company has reported a heavy turn-over of personnel, and at one period it was stated that over 35 per cent of the employes on the payroll had been in the company's employ for less than one year. This fact naturally made necessary increased supervision, and the efficiency of the supervision has been proved by the excellent safety record with a 20 per cent decline in accidents during the year.

ANGLO AMERICAN REPORTS VARIED ACTIVITIES IN 1942

THE Anglo American Mining Corporation, Randsburg, California, has reported for the year ended December 31, 1942, a net profit of \$57,246 before depreciation, amortization, depletion, and provision for federal income taxes. This figure compares with a net loss of \$37,037 after all charges, including interest, depreciation, depletion, and amortization, for the year ended December 31, 1941.

In October of 1942, the company suspended all work at its Yellow Aster cyanide plant near Randsburg, California, the labor shortage being given as the main reason for the shutdown. In November, a lease contract was entered into for the Helen quicksilver property, located near Mojave, Kern County, California. An application made by the company for a loan to start development of that property was

granted recently by the Reconstruction Finance Corporation, and it is expected that work will commence soon. A lease-option was entered into for the Golden King near Wenatchee, Washington, and the company plans to hold the property for operation after the war.

Anglo American leased the Bissell magnesite mine near Mojave, and extensive geological and chemical research already has been completed. The treatment process now is being checked. After investigating a number of tungsten properties during the year, Anglo American entered into a lease contract on two properties in Madera and Alpine counties, California, but both operations were disappointing and work was suspended.

Walter Lyman Brown, 206 Sansome Street, San Francisco, California, is president of the Anglo American Mining Corporation.

WAR METALS SEARCH IN ALASKA CONTINUED BY BUREAU OF MINES

IN ITS program for the exploration and development of strategic minerals in Alaska, the Bureau of Mines, working in close cooperation with the U. S. Geological Survey, is paying considerable attention to tailing materials left by early operators who were searching only for gold. Many of these tailings contain important quantities of tin. Tailings in the Manley Hot Springs area near the junction of the Yukon and Tanana rivers are being sampled for tin and examinations of tin placers have been made in the Buck Creek-Potato Mountain area, at Cape Mountain, near Tin City, and in the Lost River area, all on the Seward Peninsula near the Arctic Circle.

Near Sleitmut on the Kuskokwim River, another Bureau of Mines' crew is sinking a shaft in search of more mercury ore. Here a considerable quantity of commercial-grade mercury ore has been found, and private interests, the bureau has been advised, will begin development of the property in the near future. At Moose Creek near Anchorage, several diamond-drill holes have been driven to obtain an accurate picture of coal reserves in that region. On Prince of Wales Island in southeastern Alaska, the bureau is launching a new project for iron and copper ores.

Tungsten is being sought near Hyder, also in southeastern Alaska, and exploratory projects have been carried on at Yakobi Island for nickel and on the Kenai Peninsula for chromite.

Ore samples are sent to the bureau's laboratories at Rolla, Missouri, and Reno, Nevada. In Alaska, the bureau maintains a district office at Juneau to coordinate the work of various field parties.

The Territory of Alaska thus far has produced nearly \$1,000,000,000 in minerals, most of which has been gold. There has been little effort to exploit other ores because of the limited knowledge regarding their extent and richness and because of the handicaps imposed by the severe weather conditions, lack of transportation facilities, and the roughness of the terrain.

TENNESSEE-SCHUYLKILL ISSUES ANNUAL REPORT

THE Tennessee-Schuylkill Corporation, with head offices at 70 Pine Street, New York, New York, and mine offices at Chloride, Arizona, has reported a net profit of \$23,452 before provision for income taxes for the year ended December 31, 1942. Income from sales of lead and zinc concentrates totaled \$558,971 for the year. The annual report represents the first publication by the company of its yearly earnings. Although the concern was organized in 1936 and had, of course, issued annual reports, actual publication had been unnecessary because of the small number of stockholders.

It is stated that at a meeting of the stockholders of the corporation held on December 29, 1942, a proposal to merge with the American Venture Corporation was legally adopted. Previous to that time the controlling stock interest of Tennessee-Schuylkill was held by the American Venture concern.

During the first part of the year operations were fairly normal, but production began to fall off because of the increasing difficulty of maintaining an adequate crew. In February there was a two-week strike, which cut output to about 40 per cent of normal. The company carried on a drilling campaign, resulting in the discovery of an ore body on the 900-foot level of the Tennessee shaft in ground which had not been previously prospected. The 900-foot level drift was extended and stoping started. From May on, however, the grade of ore available was much lower, particularly in lead, and increasing shortage of labor and machinery breakdowns cut down daily tonnage. In July, at the request of the War Production Board to push development to the utmost and increase plant capacity, the Tennessee-Schuylkill purchased a 75-ton custom mill and its essential parts were incorporated in the company's mill to bring capacity up to 200 tons per day. Among major improvements were a new change house, new office building and equipment, miners' houses, restaurant, compressor, diamond drill, and complete overhaul of existing equipment.

By October the company managed to recruit a full crew, some of the furloughed soldiers who formerly had been miners having been hired. Grade of ore remained low and production figures were subnormal until December, when output was back to normal. As far as potential ore is concerned the company reported it was in excellent shape by the end of the year. The 900-foot level ore body had been drifted on for 275 feet, and main rehabilitation work had been completed at the mine and mill. It is estimated that in 1943 over 50,000 tons of ore will be mined with a slightly lower gold, silver, and lead content and an appreciably higher zinc content.

Nye A. Wimer is president of Tennessee-Schuylkill and Frederick W. Foote is vice-president. Frank C. Cassidy is general manager of operations for the company at Chloride.

BUREAU OF MINES* releases figures on

Copper, Lead, and Zinc Production in 1942

COPPER

IN 1942 the total mine production of recoverable copper in the United States (Alaska included) was about 1,072,003 short tons, an increase of 12 per cent over 1941, according to preliminary figures of the Bureau of Mines. The output was the largest in the history of the United States.

Of the total mine production of copper in 1942 in the United States (Alaska included) Arizona contributed 36 per cent, Utah 29 per cent, Montana 13 per cent, Nevada 8 per cent, New Mexico 7 per cent, Michigan 4 per cent, and other states 3 per cent.

The mine output of copper was valued at \$257,280,720 in 1942, compared with \$226,123,164 in 1941, an increase of 14 per cent. The average weighted price per pound used by the Bureau of Mines in the preliminary calculations for 1942 was \$0.12; the average weighted price used for 1941 was \$0.118.

The domestic price for electrolytic copper, f.o.b. refinery, was stabilized at \$1.775 cents per pound throughout the year. Beginning in February the Metals Reserve Company offered a premium of 5 cents per pound for all copper produced above certain fixed mine quotas.

The following table and state reviews for 1942 were obtained from current preliminary reports of the western field offices of the Bureau of Mines.

Arizona—Arizona produced 390,500 short tons of recoverable copper in 1942, compared with 326,317 tons in 1941. The state has been the largest producer of domestic copper since 1907 except in 1909 when Montana held first place. There were six copper smelters operating in the state during 1942, one each located at Hayden, Clarkdale, Douglas, Superior, Miami, and Morenci. The total rated capacity of these smelters is 4,380,000 tons of charge per year. The new 1,200-ton per day smelter of the Phelps Dodge Corporation at Morenci was completed in March and started regular operations in April. Nine mines again yielded 99 per cent of the total recoverable copper output of the state in 1942; the largest of these was the New Cornelia mine of the Phelps Dodge Corporation at Ajo (Pima County) and the others in order of production were the Morenci, Inspiration, Nevada Consolidated (Ray mine), Copper Queen, United Verde, Miami, Magma, and Denn properties.

California—There was a 78 per cent decrease in the production of copper from California in 1942 as compared with 1941. The closing of the Walker mine in the Genesee district, Plumas County, Octo-

Mine production of copper in the United States in 1942 was the largest in the history of the country and represented an increase of 12 per cent over the 1941 output. The increases reported in lead and zinc output, however, were not so impressive, amounting to 7 per cent in the case of lead, and only 1 per cent for zinc.

ber 31, 1941, left California with no large copper producers. The closing of the gold mines in October served to further decrease the production of copper, as this metal is recovered as a by-product in the mills of many districts of the state.

Colorado—Production of copper in Colorado decreased 82 per cent in 1942 as compared with 1941. The replacement of production of copper-iron-silver-gold ore in favor of zinc-lead ore at the Eagle mine of the New Jersey Zinc Company, Empire Zinc Division, in Eagle County was the greatest contributing factor to the decrease.

Michigan—In 1942 the production of copper (in terms of recoverable metal) was 45,500 short tons, a decrease of 2 per cent as compared with 1941. The principal producers were the Calumet and Hecla Consolidated Copper Company, Copper Range Company, Isle Royal Copper Company, and Quincy Mining Company. Among the measures taken by federal agencies to stimulate copper production in Michigan, in addition to paying premium prices for copper produced at marginal properties, was the granting of a loan by

the Metals Reserve Company to the Quincy Mining Company for the construction of a 4,000-ton mill for re-treating the company's tailing deposit at Mason, on Torch Lake.

Montana—Montana produced 139,500 short tons of recoverable copper in 1942, a 9 per cent increase over 1941. The Anaconda Copper Mining Company with properties at Butte again produced about 98 per cent of the state total output of copper.

Nevada—Production of recoverable copper in Nevada was 80,700 short tons in 1942, the highest in the history of the state. Production in 1941 was 78,911 tons, indicating a 2 per cent increase in output in 1942. The Nevada Consolidated Copper Corporation with properties in the Robinson district (White Pine County) was the largest producer of copper in Nevada; other large producers were Consolidated Coppermines Corporation operating properties in the same district and the Mountain City Copper Company in the Cope district (Elko County). The McGill copper smelter, the only smelter in Nevada, was operated continuously throughout the year by the Nevada Consolidated Copper Corporation.

New Mexico—Production of recoverable copper in New Mexico was 79,389 short tons in 1942, an increase of 8 per cent over 1941. The Nevada Consolidated Copper Corporation was by far the largest producer of copper in New Mexico. The company operated its open-pit Chino mines at Santa Rita and its concentration mill and reverberatory smelter at Hurley (all in Grant County) throughout the year. The mill was operated all the year at above the rated capacity. Other copper-producing operations were carried on by

Mine Production of Copper in the United States, 1941-42

| State or Territory | 1941 (Short Tons) | 1942* (Short Tons) | Per Cent of Increase or Decrease in 1942 |
|----------------------------|----------------------|-----------------------|---|
| Western States and Alaska: | | | |
| Alaska | 72 | 24 | -67 |
| Arizona | 326,317 | 390,500 | +20 |
| California | 3,943 | 850 | -78 |
| Colorado | 6,748 | 1,205 | -82 |
| Idaho | 3,621 | 3,550 | -2 |
| Montana | 128,036 | 139,500 | +9 |
| Nevada | 78,911 | 80,700 | +2 |
| New Mexico | 73,478 | 79,389 | +8 |
| Oregon | 83 | 103 | +24 |
| Texas | 6 | 81 | +1,250 |
| Utah | 266,838 | 307,128 | +15 |
| Washington | 8,686 | 8,056 | -7 |
| Wyoming | 4 | 1 | -75 |
| Eastern States† | 13,566 | 14,191 | +5 |
| Central States: | | | |
| Michigan | 46,440 | 45,500 | -2 |
| Missouri | 1,400 | 1,225 | -12 |
| Total | 958,149 | 1,072,003 | +12 |

*Preliminary figures.

†North Carolina, Pennsylvania, South Carolina, and Tennessee.

Prepared by Chas. W. Henderson, Supervising Engineer of Western Offices, Denver, Mineral Production and Economics Division, Economics and Statistics Service.

per cent decrease in the production of recoverable lead in Montana in 1942 may be attributed to the closing in May of nearly all the zinc-lead mines of the Anaconda Copper Mining Company at Butte, including the Emma mine.

Arizona produced 14,600 tons of recoverable lead in 1942, 7 per cent less than in 1941. This decrease was due chiefly to the decline in output of zinc-lead ore from the Tennessee-Schuykill mine at Chloride and the suspension in January of milling zinc-lead ore from the Hillside mine near Hillside. The largest producer of lead in Arizona in 1942 was the Trench-Flux group, owned by the American Smelting and Refining Company. Other producers were the Mammoth-St. Anthony, Tennessee-Schuykill, Iron King, Shattuck Denn, and Duquesne properties.

In Colorado the production of recoverable lead was 16,550 tons as compared with 12,574 tons in 1941. Lead is produced in nearly all lode-mining counties in Colorado; the larger producers were the Eagle mine in Eagle County, Rico Argentine Mining Company properties in Dolores County, Smuggler-Union group and Alta mine in San Miguel County, Resurrection Mining Company properties in Lake County, and the Shenandoah-Dives Mining Company properties in San Juan County.

The recoverable lead output of Nevada in 1942 was 6,200 tons compared with 9,623 tons in 1941. The zinc-lead ore from the Pioche district, Lincoln County, accounted for 56 per cent of the state total. New Mexico produced 4,331 tons of recoverable lead in 1942, a decrease of 337 tons from the 1941 figure. The principal producing mines were the Ground Hog-San Jose group of the American Smelting and Refining Company, the Hanover mine group of the Empire Zinc Company and the Pewabic and Copper Flat properties of the Peru Mining Company, all located in the Central district, Grant County. Washington produced 4,758 tons of recoverable lead in 1942, an increase of 855 tons (22 per cent) over 1941. Three properties at Metaline Falls, Pend Oreille County, produced nearly all the recoverable lead output in 1942 in Washington. The production of recoverable lead in California was 4,950 tons, an increase of 1,486 tons (43 per cent) over 1941. Increased output of the Shoshone Mines, Inc., in the Resting Springs district, Inyo County, is largely responsible for this increase. Most of the lead output of the other western states comprising in order of output in 1942, Alaska, Texas, South Dakota, Oregon, and Wyoming) came from properties operated primarily for the recovery of gold and silver.

ZINC

THE mine production of recoverable zinc (including that made into zinc pigments and salts) in the United States was 160,210 short tons in 1942, an increase of only 1 per cent over 1941. At the average weighted price used by the Bureau of Mines of 9.1 cents per pound the output in 1942 was valued at \$138,358,200. This compares with a value of \$112,-



368,750 in 1941, which was calculated at the average weighted price for that year of 7.5 cents per pound, and shows an increase of 23 per cent in value over 1941.

Zinc was quoted at 8.25 cents per pound (St. Louis) on January 2, 1942, and remained at that price the rest of the year. Beginning in February, the Metals Reserve Company offered a premium of 2½ cents per pound for all zinc produced above certain fixed mine quotas.

Eastern States—The eastern states (comprising in order of output New Jersey, New York, Tennessee, and Virginia) yielded 197,415 tons of recoverable zinc in 1942, or 26 per cent of the total domestic production. Zinc production in both New York and Tennessee was higher than in any previous year. In New Jersey the zinc output was virtually the same as in 1941, and in Virginia it decreased. The large zinc-producing mines in the eastern states continued to be: Mine Hill at Franklin and Sterling Hill at Ogdensburg, Sussex County, New Jersey; Balmat and Edwards of the St. Joseph Lead Company, St. Lawrence County, New York; Mascot, Grasselli, and Jarnagin of the American Zinc Company of Tennessee, Davis group of the Universal Exploration Company near Jefferson City, Embree Iron Company at Embreeville, and the Tennessee Copper Company property at Copperhill, all in Tennessee; and the Austinville mine of the New Jersey Zinc Company at Austinville, Virginia.

Central States—The central states (comprising in order of output Oklahoma, Kansas, Missouri, Illinois, Wisconsin, Kentucky, and Arkansas) produced 256,352 tons of recoverable zinc, a decrease of 19,654 tons from the 1941 production of 276,006 tons. The Tri-State (or Joplin) region of Oklahoma, Kansas, and southwestern Missouri produced 236,695 tons of recoverable zinc in 1942, 92 per cent of the central states and 31 per cent of the total domestic production. In 1942 operators in the region treated 8,513,600 tons of zinc ore and 9,921,000 tons of tailings. The total quantity of zinc-bearing

ore mined and milled increased 6 per cent from 1941, but the average yield of recoverable metals (combined zinc and lead) per ton of rock decreased 12 per cent. The decline in zinc production is, therefore, not due to a decline in mining activity in the region, but due to a decline in the average grade of crude zinc and zinc-lead ore treated. The leading producers included: The Eagle-Picher Mining and Smelting Company, Federal Mining and Smelting Company, St. Louis Smelting and Refining Company, Kansas Explorations, Inc., Evans Wallower Zinc, Inc., Rialto Mining Corporation, Bilharz Mining Company, Tri-State Zinc, Inc., Big Chief Tailing Company, Davis-Big Chief Mining Company, and Lulu Bell Mining Company. Increased activity throughout the mining area (Grant, Iowa, and Lafayette counties) in Wisconsin resulted in a production of 9,040 tons of recoverable zinc in 1942, an increase of 2,802 tons over that of 1941. The Mahoning Mining Company zinc-lead-fluorspar mine near Cave in Rock, Hardin County, operated at an increased rate producing all of the 9,777 tons of recoverable zinc from Illinois in 1942. Small amounts of zinc also were produced in Arkansas and Kentucky.

Western States—The western states output of recoverable zinc in 1942 was 306,443 tons, an increase of 24,634 tons (9 per cent) over 1941. This gain can be attributed to the more favorable price of zinc and to the premium pay program of the Metals Reserve Company for production from individual mines in excess of quotas based on 1941 production. Idaho was the largest producer of zinc among the western states and set another new high in its history of production of this metal by producing 86,350 tons in 1942. About 81 per cent of the zinc output of Idaho came from 60 mines in the Coeur d'Alene district in Shoshone County and virtually all the remainder from the Warm Springs district in Blaine County. The chief zinc-producing mines in Idaho in 1942 in order of their output were the Star, Morning, Hecla, Bunker Hill and Sullivan, Tamarack and Custer, Triumph, Page, Frisco, South Mountain, Spokane-Idaho, Interstate-Callahán, and Highland Surprise properties; these 12 properties, all except the Triumph and South Mountain in the Coeur d'Alene region, produced 92 per cent of the state total.

Montana ranked second among the western states with a production of 52,200 tons of recoverable zinc, a decrease of 8,510 tons from 1941. The Butte district accounted for about 52 per cent of the state's total zinc; the remainder was chiefly from current slag treated at the slag-fuming plant at East Helena and from zinc-lead ore from scattered districts in the state. The closing in May of the zinc-lead properties of the Anaconda Copper Mining Company, including the Emma mine, accounts for the decrease in zinc production in 1942.

Utah produced 47,250 tons of recoverable zinc in 1942, a 12 per cent increase over 1941. The state retained its rank of third in production of zinc among the western states. The gain in the state

E. Elmo Bollinger and Roy Williams, both of Kingman, Arizona, are reported to have taken a 10-year lease on the Golconda mine from the Pontiac Mines, Inc., H. B. Lawrence, 1052 West Sixth Street, Los Angeles, California, president and general manager. The Golconda has been one of the largest zinc producers in the Cerbat district near Kingman and is credited with a production record of over \$6,000,000 worth of zinc from 1908 to 1917. The average output of the Golconda mill was two carloads of concentrates daily during 1917 and, in addition to the concentrates, an average of three carloads of crude ore per month was shipped to the smelter. Bollinger and Williams recently organized the **Bulwark Mines, Inc.**, under which name the Golconda will be operated. An application has been made by the new operators for RFC funds for retimbering and dewatering the mine, and actual work is expected to be started by July 1. It is understood that the terms of the lease call for 150 shifts per month.

An average of 100 tons of ore is being shipped daily from the **Ash Peak Lease** to the International Smelter, Miami, Arizona. The Ash Peak is located 14 miles west of Duncan in Greenlee County, Arizona. The property is being operated by Dan Mayne and Howard Mottier, both of Box 208, Duncan, and they are mining both gold-silver and silver fluxing ores. Mayne and Mottier are subleasing from Arthur Murphy, Duncan.

It is expected that construction of a new flotation plant to handle molybdenum ores from the **Leviathan** mine will be started immediately. The size of the proposed milling unit has not yet been disclosed. Recent work at the mine has consisted of dewatering, with three shifts being employed daily, and the development program is being carried out by means of a Reconstruction Finance Corporation loan. The Leviathan, which is in the Cedar Valley district of Mohave County, Arizona, is operated by M. B. Dudley, Kingman, Arizona, and associates, under lease from the Leviathan Metals Company of Duluth, Minnesota.

Final approval has been given by the Reconstruction Finance Corporation on the loan for the **Golden Gem** mine, and development work will be started immediately. The property is being operated by Ralph R. Langley, 1045 South Bedford Street,

MORE MEAT FOR MINERS

Prentiss Brown, OPA chief, has been asked by Senator James G. Scrugham of Nevada to consider a plan to allow hardrock miners the same meat rations as those allotted to the armed forces. Witnesses testifying before the Scrugham mining sub-committee criticized the present meat ration sharply as being inadequate to support heavy underground labor. A, B, and C meat ration cards, based on multiples of the civilian ration, and to be issued by local ration boards, was suggested as a means of handling the additional allotments.

Los Angeles, California, and is in the Wallapai mining district of Mohave County, Arizona. It is expected that principal work will consist of dewatering the 650-foot shaft at the Golden Gem. Langley also is interested in the Alpha mine in the same district. The Golden Gem is a gold-silver-lead property.

The **Vivian Mining Company, Inc.**, has started work at the **Grand Reef** mine near Klondyke in Graham County, Arizona, and expects to reopen copper and lead-bearing veins. The company formerly operated gold property at Oatman, Arizona, and, after the WPB close-down of gold properties in October 1942, had been engaged in searching for a strategic metal prospect. Work at the Grand Reef is being carried on under an \$8,500 Reconstruction Finance Corporation loan. A pronounced vein of lead-bearing ore is reported to have been explored by former operators to a depth of 150 feet and an adit had been run for a distance of about 1,200 feet. It is believed that a major deposit of copper-bearing ore will be encountered at about 600 feet below the adit tunnel. The mine is equipped with track, pipe, electric generator, and a small milling unit. Albert E. Kern, 110 Sutter Street, San Francisco, California, is president of the Vivian company. The Grand Reef formerly was operated by the Calistoga Mining and Development Company, Klondyke.

A 30-ton amalgamation mill has been installed at the Alma mine and it is expected that the new unit will be put into production as soon as the operators can

obtain priority to purchase a gas engine. The shaft now is down to the 100-foot level. Mill heads are said to average \$30 in gold per ton and 5 per cent lead. The Alma is on Groom Creek eight miles southeast of Prescott, Yavapai County, Arizona, and is being operated by J. W. Lemons and C. R. Lake, both of Prescott, under lease from the Bashford-Burmeister Company.

Ronald Brown and J. H. Macia, Tombstone, Arizona, are reported to be engaged in making changes and additions to the mill at the **Tombstone Extension** mine located about two miles east of Tombstone, Cochise County, Arizona. It is understood that the concentrates being shipped run 22 per cent lead. Work at the Tombstone Extension is being done by means of a \$5,000 loan granted by the Reconstruction Finance Corporation.

F. Albert Morrison, Hotel Beale, Kingman, Arizona, and associates are reported to be opening up the old **Cerbat** lead and zinc property about 12 miles from Kingman in the Cerbat Range, Mohave County, Arizona. Old workings are said to show a promising body of zinc ore.

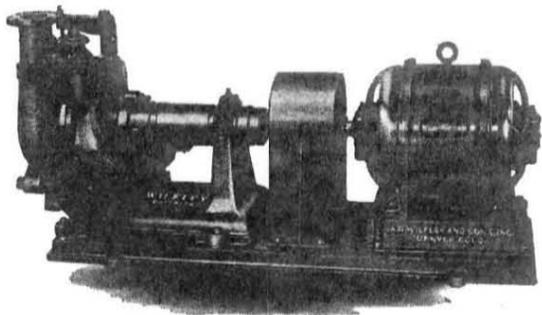
The **Molybdenum Corporation of America** is said to have uncovered a deposit of high-grade ore at its **Boriana** mine, Yucca, Arizona, and it is expected that the company will resume production as soon as a full crew is obtained. C. D. McGovern is mine superintendent and Henry Shelton, mill superintendent, at the Boriana mine. Both are addressed at Yucca. Marx Hirsch, 500 Fifth Avenue, New York, New York, is president of the Molybdenum Corporation of America. W. H. Munds is general manager at the Boriana.



The Reconstruction Finance Corporation recently granted a mining loan to Carrol Winrod, Downieville, California. The funds will be used in opening up a large deposit of chrome ore on St. Charles Hill several miles from Downieville.

John J. Taylor, Russ Building, San Francisco, California, with associates, re-

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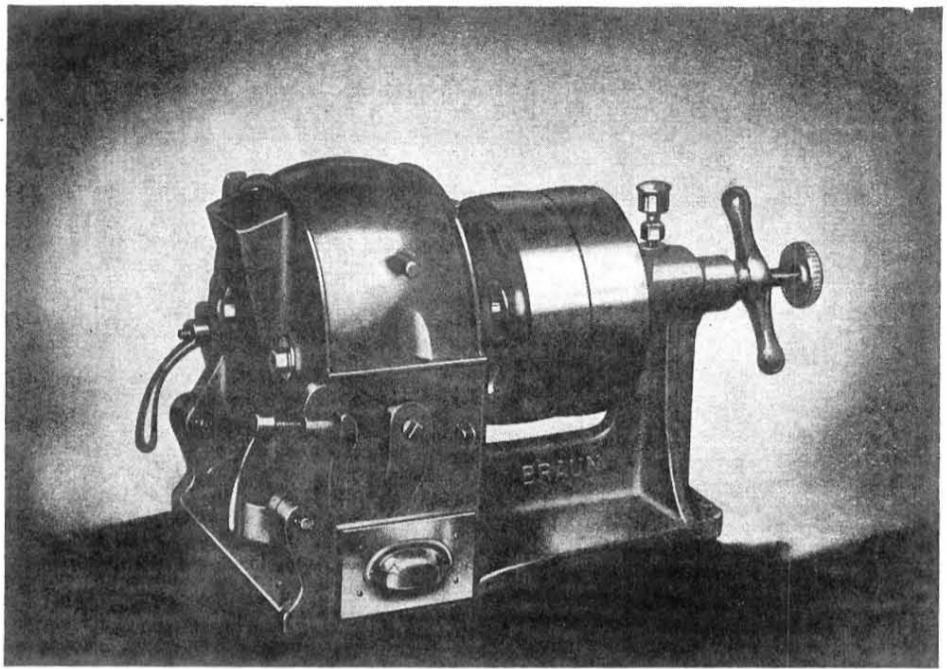
cently completed a deal for the purchase of the properties of the Auburn Chemical Lime Company near Rattlesnake Bridge in Eldorado County, California. It is understood that the new owners will expand present mill facilities to handle chrome ore from properties they have developed in the same area. Taylor, who owns and leases extensive chrome properties in the district, has carried on intensive development work during the past two years between the North and South Forks of the American River; including surface bull-dozing, crosscutting and diamond drilling. Early this year shaft operations were started on his Darrington property and it is reported that a five-foot vein of high-grade mill ore is showing in the 75-foot shaft, outcropping for over 300 feet on the surface. A new hoist and compressor have been installed with two shifts working. Plans are under way to utilize a portion of the Lime plant facilities, including an 11 k.v. power line, for a 100-ton mill for concentrating the chrome ore. Operations of the burnt-lime end of the plant, which will not be disturbed by the chrome operations, will be resumed later, it is understood.

The Strategic Minerals Company, Ltd., is reported to have entered into a lease with option to purchase on property located south of Badger, Tulare County, California. The lease will run for 10 years. The property carries values in tungsten.

It is reported that construction of a concentrating plant to recover copper values from large tailings dumps at properties near Copperopolis, California, is being started by the Pacific Mining Company. It has been estimated that approximately 5,000,000 pounds of copper can be recovered from 600,000 tons of tailings material. The Copperopolis group includes the Keystone and Union mines, at one time important copper producers. P. R. Bradley, Jr., Jamestown, California, heads the Pacific Mining Company.

It is expected that the Rand Gold Dredging Associates, Randsburg, California, will soon resume its 24-hour daily schedule at dredging operations north of Randsburg, following a short period on a 12-hour basis. The dredge recently was completely shut down while three new jigs were installed. At present, installation of a new table is nearing completion. In the meantime, it is understood that the tailings containing tungsten values are being stacked by the dredge for future treatment in the new plant. M. E. Howard, Box D, Randsburg, is superintendent of operations and Newton Cleaveland, 351 California Street, San Francisco, California, is consulting engineer for the concern. Herbert Way is office manager for the Rand Gold Dredging Associates.

Consolidated Tungsten is installing new machinery and equipment at the mine and mill located in Drum Valley, California. The company has been shipping about a ton of "spuds" weekly in addition to its regular weekly output of approximately 4,000 pounds of tungsten concentrates. Joe Spittler is manager for Consolidated Tungsten and Carl Tibbals is superintendent. Both may be addressed at Haden



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Hotel, Dinuba, California. Andrew Thickstun, Box 1472, Fresno, California, is consulting engineer for the tungsten firm.

A new oreshoot, said to measure eight feet in width and average 20 per cent WO_3 , recently was opened up at the **Carothers** mine on Fish Creek in the North Fork mining district, North Fork, California.

An access road to the **Garnet Dike** mine, 13 miles from the Kings River Fish Hatchery, Fresno, California, is under consideration. Because of the remote location of the tungsten property the operators have been packing out concentrates for a distance of eight miles by mule trail. Hal Sheridan is mine foreman, M. Sheridan, business manager and supply chief, and Bill Sheridan, mill foreman. All may be addressed in care of the Kings River Fish Hatchery, Fresno, California. Andrew Thickstun, Box 1472, is consulting engineer for the project.

A crew of 10 men is being employed at the **Quail Hill** mine four miles south of Copperopolis in Calaveras County, California. Fifteen of the approximately 35 carloads of stockpiled ore have been shipped to the International Smelting and Refining Company at Salt Lake City, Utah. The property is owned by G. Ivan Smith of Bell, California, and Roy Kirk of Copperopolis is acting as superintendent of operations. Main values are in copper.

The **Kaiser Company, Inc.**, Iron and Steel Division, has been granted an additional loan of \$21,000,000 from the Re-

construction Finance Corporation to be used for the expansion of the company's steel plant at Fontana, California. This brings the total loan from the RFC to \$105,000,000. Operation of the new unit was started at the beginning of 1943 and it is understood that the company is shipping 2,500 tons of iron ore daily to the plant from its Vulcan mine near Kelso in San Bernardino County, California. The ore is transported to the Union Pacific spur (eight miles) by a fleet of six jumbo trucks, having a capacity of 25 cubic yards and a gross vehicle weight of 140,000 pounds. A crew of approximately 125 men is being employed at the Vulcan project, under the direction of Robert E. Tally, superintendent. Henry J. Kaiser, Latham Square Building, Oakland, California, is president of the Kaiser concern and George Havas is chief engineer.

Plans are being made to install a new mill and complete mining equipment at the **Jezebel Extension** copper mine 14 miles east of Madera, California. A large body of high-grade copper ore, carrying some gold values, has been opened up in preliminary development work by the operator, the **Sisson Gold Mining Company**. Dewatering recently was completed. The work was done under a Reconstruction Finance Corporation loan. Ten men are being employed in the mine, under the direction of Elmer L. Sisson, general manager. John E. Sisson, 456 Subway Terminal Building, Los Angeles, California, is president of the Sisson concern.

The U. S. Bureau of Mines is said to be conducting an extensive drilling campaign at the **China Dumps** property of the **New Almaden Corporation** 13 miles southwest of San Jose, California. Raises have been completed to the 700 and 600-foot levels and the Santa Rita shaft has been driven to 50 feet below the 800-foot level where a loading pocket has been built to the 2½-ton ore skip. F. Eugene Newbold, 1515 Locust Street, Philadelphia, Pennsylvania, is president of the New Almaden company and C. N. Schuette is general manager.

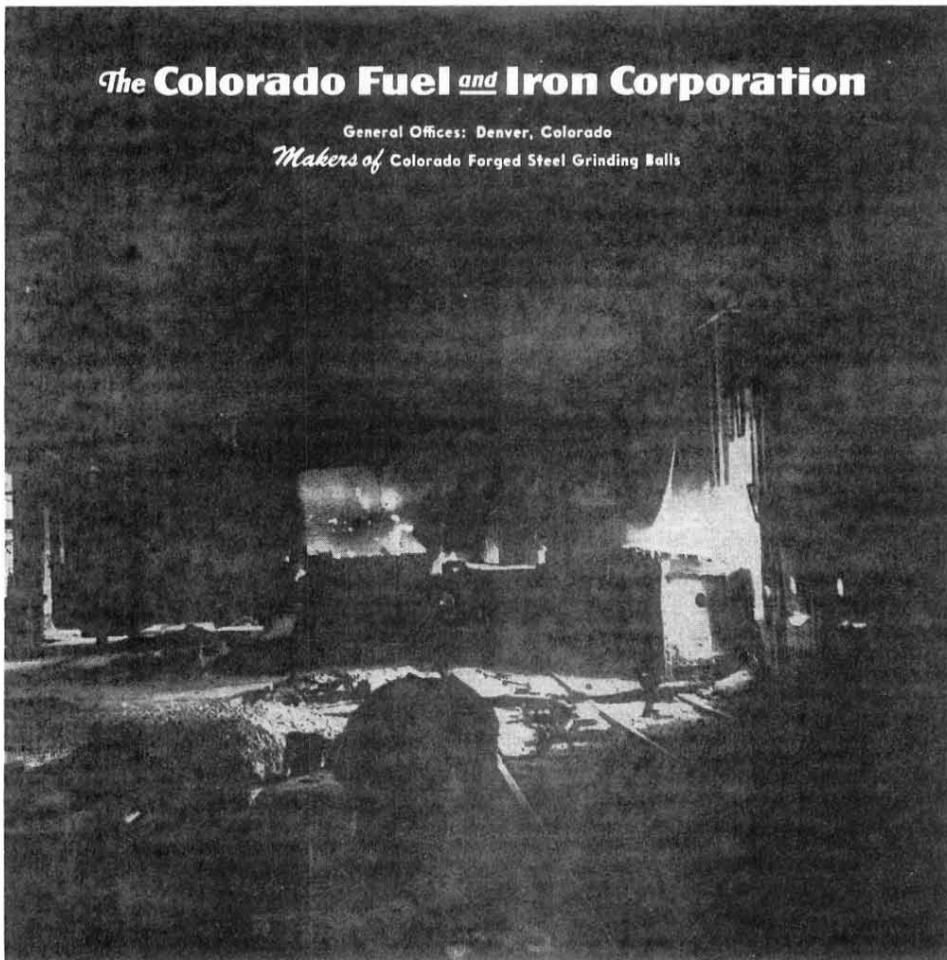
K. W. Walters, Happy Camp, California, superintendent of the Dorothea Reddy Moroney chrome mine operations, is said to be engaged in opening up the **Orleans** mine in Humboldt County, California. He also is reported to be making application for an access road to the **Lowden** chrome mine in Siskiyou County near Seiad, California. Present arrangements necessitate packing out ore for a distance of three-quarters of a mile. J. C. O'Brien, State Division of Mines engineer at Redding, California, recently completed an examination of the Siskiyou property. Walters' future plans include erection of a chrome mill near the Lowden property. Dorothea Reddy Moroney is addressed at Yreka Inn, Yreka, California.

The U. S. Bureau of Mines is said to have undertaken a drilling program at the **Guadalupe** mine of the **Laco Mining Company, Inc.**, Los Gatos, California, and it is hoped that a new furnace plant will be installed. The Guadalupe is a quicksilver property and work is under the direction of Howard E. Meade, general superintendent. H. N. Mason, Route 3, Box 412, Los Gatos, is president of the Laco Mining Company.

At the annual meeting of stockholders held recently in San Francisco, California, all officers and directors of the **Central Eureka Mining Company** were reelected. C. C. Prior is president and general manager of Central Eureka; J. Stadfeld, secretary-treasurer; and Ira B. Joralemon, consulting engineer. Company headquarters are maintained at 111 Sutter Street, San Francisco, California. The company, which formerly was a gold operator in California until the WPB gold closing order, now has holdings at Battle Mountain, Nevada.

O. E. Chaney, Box 2521, Reno, Nevada, and associates are said to have discovered additional manganese deposits at the **Schmidt** property near Patterson in Stanislaus County, California. The material is used in the manufacture of dry batteries and several shipments have been made during the past year to the General Dry Batteries Company at Patterson, California. New roads have been completed to the mine and development of virgin deposits has been started.

The **Holcomb Valley Company** has resumed operations at its Walker mine in the Rand Mining district near Randsburg, California. Arrangements have been completed for a larger water supply and increased capacity of the plant has been made possible by installation of new jigs and other equipment. The company, a



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gold and tungsten producer, is headed by George K. Knudsen, 973 North Main Street, Los Angeles, California.

It is expected that the Aluminum Company of America will start operation of its new \$12,000,000 plant at Riverbank in the San Joaquin Valley of Stanislaus County, California, about May 15. It is estimated that the plant, which covers a square mile, will produce 100,000,000 tons of aluminum annually and will employ about 1,000 men. Roy A. Hunt, 801 Gulf Building, Pittsburgh, Pennsylvania, is president of the Aluminum Company of America.

Hydraulic monitors are operating steadily at the Pioneer-Riffle placers in the Grass Flat region near La Porte, Plumas County, California, and main work is being centered on the Riffle deposit, where a large yardage of profitable gravel is said to be available for sluicing. The property recently was granted permission by the War Production Board for continued operation on a limited scale. Andrew J. Modglin of La Porte is superintendent at the Pioneer-Riffle.



A. J. Betz and Henry Johnson, both of Marble, Colorado, are reported to have leased the old Catalpa mine near Marble in Gunnison County. The property has been idle for many years.

An RFC loan has been obtained by Charles C. Goulding, Box 638, Durango, Colorado, for the reopening of the old Precious Metals mine, also known as the Silver Crown property. It is located about seven miles northwest of Silverton on the Silverton-Ouray highway in San Juan County. Opened in the early 1900's, it was extensively developed as a potential silver producer. Principal values are in lead and zinc, which were unimportant at that time. The claims have been idle since around 1920.

A regular quarterly dividend of 25 cents a share has been declared by the Golden Cycle Corporation, Merrill E. Shoup of Colorado Springs, Colorado, president. Payment will be made June 10 to stockholders of record May 31, 1943. Originally a gold mining and milling concern, Golden Cycle has converted various units of its many operations to war work. A portion of the 1,000-ton Golden Cycle mill at Colorado Springs was converted to the treatment of zinc ores, production of coal and decomposed granite is being continued, water is conveyed from the Carlton tunnel to the Arkansas River Valley for irrigation, and shop facilities have been turned over to the making of parts and tools for the war effort. Some gold mining at the Cripple Creek properties is being continued under government limitations and the ore is treated at the Golden Cycle, where it is necessary for flux. Besides buying zinc ores on a custom basis, the company has acquired zinc properties at Silver Plume

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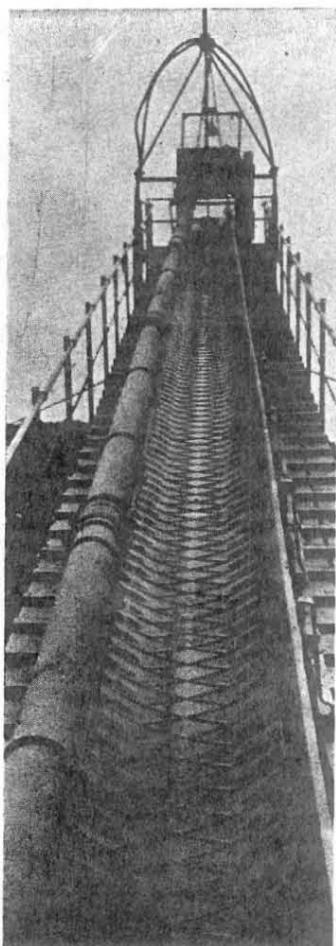
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equipment. Camps were built to house trenching and sampling crews and the bureau's extensive exploratory project was started. During their first year in the mountains, the crews trenched and sampled the Mouat and Benbow deposits of the Stillwater area and ascertained that bands of chromite were continuous for long distances. In 1940, diamond drill crews began testing the chromite bands for depth. Meanwhile, the bureau's laboratories at Salt Lake City, Utah, and Boulder City, Nevada, tested samples and found them amenable to concentration.

As the operating agent of the Office of Production Management and the Metals Reserve Company, the Anaconda Copper Mining Company started commercial development of the Stillwater chromite in June 1941, and a mill and tramway were built in the Benbow region. Nine months later, on March 1, 1942, chromite concentrates were being produced. While tonnages from the Benbow workings continued to increase, the company began a second and larger mill to treat ore from the Mouat area. The second mill for concentrating ore soon will be ready for operation. To carry the ore from the workings in the mountains to the mills in the valleys below, the Anaconda company has built two tramways. The tramway at the Benbow workings is 2½ miles long and that at the Mouat development, 1 mile long.

While the Anaconda Copper Mining Company was blocking out by mine workings the ore that had been indicated by Bureau of Mines' drilling, the bureau's field crews continued their exploration to assure a greater supply of chromite. An extensive development campaign covering the entire 22-mile length of the Stillwater chromite ore formation was carried on in conjunction with the Geological Survey. Additional areas of the Benbow and Mouat deposits were diamond drilled, and trenching and sampling was carried on in the Nye Basin, Initial Creek, West Fork, Iron Mountain, East Boulder Plateau, Gish, and Silver Run Plateau areas. This latest work, coupled with the other exploration, indicates that several years' supply of chromite is available.

To facilitate use of the Stillwater chromite, the bureau's testing laboratories embarked on investigations for raising the chrome-iron ratio of the concentrates to a standard acceptable to the iron and steel industries. A year ago a metallurgical process had been worked out by the Bureau of Mines for treating these low-grade chromite ores and it passed successfully all laboratory tests. Further studies of the method on a commercial scale in a pilot plant have been delayed because of inability to obtain equipment.

In charting the Stillwater chromite, the Bureau of Mines crews built 10 miles of trails. More than 400 trenches were dug and 1,200 channel samples were cut from these trenches. Diamond-drilling crews drilled nearly 15,000 feet of holes to determine the depth of the chromite bands. The hundreds of ore samples, including the diamond-drill cores, were assayed in the bureau's laboratories at Reno, Nevada.

WAR PRODUCTION BOARD ORDERS LAVA CAP SHUTDOWN

THE Lava Cap Gold Mining Corporation has stopped mining operations at its Lava Cap gold mine near Grass Valley, California, as the result of an order from the War Production Board stating that Lava Cap production is no longer essential to the war effort. The WPB ordered that all breaking of ore be completed by June 7 and a maximum of 60 days has been allowed to take out broken ore and to prepare the mine for closing.

The company was allowed to continue operations after the gold closing order as long as its production was considered essential in the operation of the American Smelting and Refining Company's lead smelter at Selby, California. Lava Cap has been producing about 400 tons of gold-silver ore daily, as well as about 150 tons of iron sulphides, which were used as a lead flux at the Selby plant.

As a part of its new strategic metal mining program, the Lava Cap company has taken over the management of the Keystone copper mine at Copperopolis, California. It is expected that a crew of 40 men will be used immediately at this project and that that number will be doubled within two months.

In addition to the Copperopolis venture, Lava Cap is arranging to operate copper-zinc properties located within a range of 20 miles of Grass Valley. It is planned that active operations will be under way by July 1 and Lava Cap workers who have their homes in Nevada City and Grass Valley will be employed. The company also hopes at the same time to bring into operation a manganese mine in Siskiyou County, California.

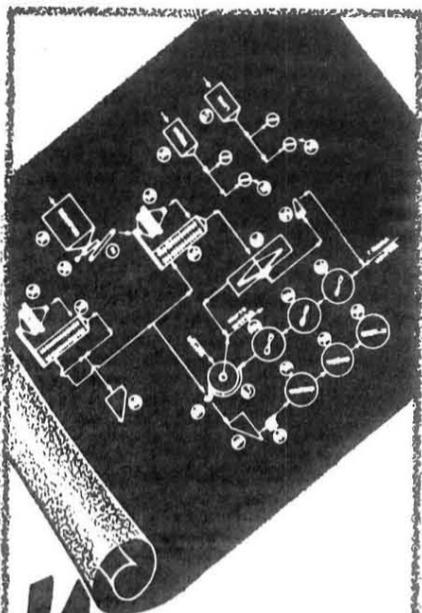
Otto E. Schiffner of Nevada City, California, is general manager of operations for the Lava Cap Gold Mining Corporation.

BEDDOME COMPLETES SURVEY OF TIN CAN SITUATION IN STATE

A SURVEY of tin can salvage possibilities in Arizona has been completed by C. C. Beddome, acting assistant director of the Department of Mineral Resources. The survey, which was made at the request of the Copper Division, WPB, indicates that a total of 10,000 tons of scrap tin cans and automobile fender and body iron is available at junk yards and at salvage depots throughout the state. An additional 7,500 tons may be gathered from isolated and remote areas but due to truck transportation and labor costs and to the present ceiling prices fixed by the OPA, it will be difficult to collect this material profitably, Beddome declared.

The purpose of the survey was to determine whether or not there is available in the state a sufficient supply of tin cans to permit the operation of additional copper leaching plants in Arizona. Beddome expressed the opinion, following completion of his work, that unless new sources of supply or substitutes can be found in other states, it would not be advisable to set up any new leaching plants in the state.

It is stated that several additional copper leaching projects could be started in



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400 to 500 tons of ore, an annual copper production of 8,500,000 pounds, and an increase in the crew to 185 men. The Christmas property has been producing intermittently since 1905. About \$750,000 worth of equipment and machinery is on the property, but the mill has been idle for some time. Fluxing ore now is being mined and shipped to the Hayden smelter by Sam Knight, Christmas, Arizona, lessee. It is expected that it will take at least 3½ months to bring the concentrating mill to half capacity or approximately seven months to get into full production at the Christmas mine.

The Neil-Lewis Mining Company has been granted a Reconstruction Finance Corporation mine loan for its property in the Chloride district of Mohave County, Arizona. The application was filed by Alfred Strong Lewis of Chloride.

L. J. Soper, Box 125, Humboldt, Arizona, is expected to start regular operations at his Lion mine by means of an RFC loan which was recently granted on the property. The Lion, which was purchased by Soper in February of this year, is in the Agua Fria mining district of Yavapai County, Arizona.

A production rate of four tons per shift is being maintained at the McCormick lead property on the east side of Copper Hill in the Globe, Arizona, district. Shipments are being made to the American Smelting and Refining Company's El Paso, Texas, plant. Shaft sinking operations are reported to be progressing steadily at the McCormick project, with four men employed. The property is owned by the Miami Copper Company, Miami, Arizona, and is being operated under lease by George W. Wright, Box 1472, Globe, Arizona.

Mike and Pete Vukoye, Kingman, Arizona, have taken over the old Antler copper-zinc mine in the Cedar Valley mining district about 12 miles east of Yucca, Arizona. The new operators are making plans to unwater the winze and clean out the partly caved drifts in preparation for early production. The claims were located and first worked about 64 years ago. At one time the Phelps Dodge interests took over the property and shipped a considerable amount of high-grade copper ore from surface workings. The mine has been idle for the past 40 years, except for a short time during the last war when lessees shipped several carloads of ore, the greater portion of which was from the old dumps.

The Victory Metals Mining Company, Box 249, Globe, is beginning to recondition its mine located in the Pinal Mountains about 12 miles west of Globe, in preparation for active production. Work is being financed by the recently granted Reconstruction Finance Corporation loan of \$5,000. The Victory Metals is owned and operated by Lyle M. Glassburn, production engineer and business manager, and L. N. Wisner, mining engineer. It is the aim of these men to first put their property on an active production schedule, and then to aid in the operation of other small mines in the vicinity, in an

effort to boost the production of vital war minerals. The chief values contained in the Victory ore are in tungsten, while copper, gold, and silver are present in considerable amounts.



Construction is under way on an easy-grade road into the Mine Hill chrome deposits near San Luis Obispo, California, which are being developed by the Bardun Mining Company of Riverside, California. The Bardun company is the operating firm for the production division of Mineral Products, Inc., F. E. Dent, president. The Mineral Products concern is said to be planning to establish chrome and manganese fabrication plants in the San Luis Obispo district. O. O. Dunn is general manager for Bardun and Mark H. Dunn is superintendent.

Jack Woodruff, 5016 Tenth Avenue, Sacramento, California, and George F. King, 1501 Fifteenth Street, Sacramento, have discovered some high quality quartz crystals at the Tripp Flat mine nine miles west of Anza in the Cleveland National Forest in California. Plans are being made to prove the extent of the deposits on the quartz claims.

A petition for a second permit to continue operations has been submitted to the War Production Board by the Golden Feather Dredging Company. The first extension granted by the WPB was effective until May 31, 1943. The company has been employing an average of 25 men, working three shifts daily, in widening the Feather River channel near Oroville, California. F. A. Wiltsee, Room 1003, Wells Fargo Building, San Francisco, California, is general manager for the Golden Feather concern.

The United States Tungsten Corporation is engaged in rebuilding the old Panamint City mine road. The company has several of the Panamint City claims under lease and it is expected that some of the claims will be operated by U. S. Tungsten when the road is completed. The property is located in the Randsburg mining district of Kern County, California. The company's representative at the project is N. J. Elliott, Randsburg.

The Basic Metals Company has taken over the old Georgia Lee mine about four miles from the company's Amelia mill near Caliente in Kern County, California. New roads have been constructed and all necessary equipment for immediate operation has been moved in. The property formerly was owned by the Minerals Development Company, which will share in the operation and returns from the Georgia Lee project. Lon O. Hunsaker, 5355 Santa Monica Boulevard, Los Angeles, is resident manager for Basic Metals. Georgia Lee values are in antimony.

It is reported that H. A. Mulkern of Santa Monica, California, is planning to start operations at the old Sweetwater manganese property in the near future.

The mine, located near Mariposa, California, recently was acquired by Mulkern from the Hudson River Gold Mines, Ltd., San Rafael, California. The new owners will operate as the Mariposa Manganese Development Company. Sampling and investigation, which have been carried on for several months at the Sweetwater mine, are said to have revealed an extensive body of high-grade ore. Considerable ore was shipped from the property during the first world war.

Chrome production is being increased by the Griffith Mining Company, with a substantial tonnage of commercial ore reported to be in sight at the company's mine near Orleans in Humboldt County, California. Shipments are made to the government stockpile at Arcata, California. H. N. Griffith of Orleans is general manager for the Griffith mining interests and Joe Rivers, also of Orleans, is general foreman.

James W. Riley of Desert Center, California, is continuing prospecting and development work on a scheelite deposit at his Chuckawalla mine in Riverside County, California, near Desert Center. The property is owned by Riley.

C. M. McNallen of Vacaville, California, and T. W. S. Clark of 400 Tuolumne Street, Vallejo, California, are engaged in prospecting manganese property at Hayfork in Trinity County, California. The men formerly operated a chrome property in the Lime Saddle district of Butte County, California, but the mine was

NEVER TOO OLD TO HELP

Very soon after Pearl Harbor an 86-year old man, standing only a trifle above five feet and weighing about 135 pounds, tried to enlist in the Navy. He was rejected, of course, because of his age. Then, still determined to do his part, he took more than 40 men who had been rejected by the Navy because of physical disability and put them through a course of training which made it possible for them to pass their physicals. The patriotic man is Dr. Frank Prentice, who, not satisfied with multiplying himself by some 40 men for the national war effort, now has turned to getting out strategic metals for Uncle Sam. He has opened up the old Imperial Lode mine and is taking lead and silver out of the remote and abandoned diggings in the desert 35 miles south of Daggett, California. The mine, originally opened over 60 years ago, is being worked as the Imperial Connor Mine.

abandoned last September when the ore was exhausted.

The Newmont Mining Corporation has declared a dividend of 37½ cents a share payable June 15, 1943, to stockholders of record May 28, 1943. A similar dividend was paid by the company on March 15, 1943. Charles F. Ayer, 14 Wall Street, New York, New York, is president.

Actual steel production was started at the Fontana, California, plant of the Kaiser Company, Inc., Iron and Steel Division, on May 14, as the first steel was tapped from one of the six Kaiser open-hearth furnaces. The tapping occurred just 11 months after construction was started on the only fully integrated iron and steel mill on the Pacific Coast. The 1,200-ton blast furnace at the plant was blown in on December 30 of last year. Date for completion of the mills and appurtenances has not yet been disclosed. The Kaiser Company recently was granted an additional RFC loan of \$21,000,000, bringing the total loan to \$105,000,000. The newest loan will be used for further expansion of the Fontana plant. Henry J. Kaiser, Latham Square Building, Oakland, California, is president of the company.

A large tonnage of silica ore, being quarried at White Rock in Mariposa County, California, is being trucked to Le Grand, and from there it is to be shipped by train to the San Jose plant of the Permanente Metals Corporation. The silica deposit, which has an estimated 500,000 tons of ore, was purchased from J. H. Helm by the Permanente concern last summer and several thousand tons were trucked out last fall for stockpiling at Le Grand. About 20 men are employed at the quarry under the direction of John Podey, foreman. Henry J. Kaiser, Latham Square Building, Oakland, California, is president of the Permanente Metals Corporation.

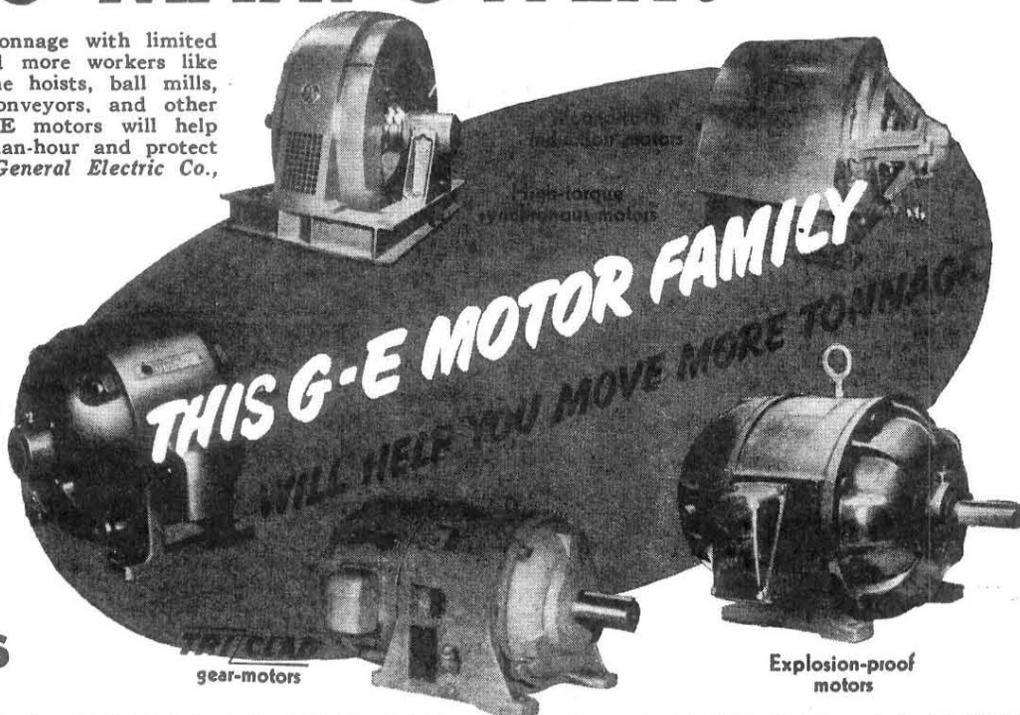
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The Tungstar Corporation has reported the discovery of a promising deposit of scheelite ore at the 200-foot level of the Pine Creek mine near Bishop, California. The deposit has been opened for a length of 85 feet and is 25 feet wide. The ore averages about 3 per cent scheelite. The Tungstar Corporation is employing a crew of 40 men in its mine and mill operations. P. N. Stevens, 6233 Hollywood Boulevard, Hollywood, California, is general manager for the Tungstar concern.

R. B. Lamb, Huntley Apartments, 1207 Miramar Street, Los Angeles, California, has obtained a lease and option on the La Victoria claim and the Tandem group of copper claims in the Hunter's Valley mining district near Mariposa, California. The properties formerly were operated in the early 1860's and were known to contain substantial values in copper, gold, silver, and zinc. However, due to excessive handling and ore treatment charges, as well as low market prices, operations proved unsuccessful. Lamb expects that regular mining operations will be under way at the two properties immediately. For the past 25 years, Lamb has been engaged in gold mining in Canada.

Extension of the electric power line to the Blue Moon zinc mine near Hornitos, California, is reported to have been completed recently. The mine now is under lease and option to the Hecla Mining Company and it is expected that active production will be started immediately. L. E. Hanley, Wallace, Idaho, is president and general manager of the Hecla concern. The mine is owned by the Red Cloud Mines, Inc., Clendenin J. Ryan, 515 Madison Avenue, New York, New York, president.

The construction of a milling plant near Randsburg, California, by the Atolia Tung-Sun Mining Company is well under way and the company hopes to be in operation during the first part of July. The tungsten placer operators will work the Karr, Reever, Max Hess, and Martin properties near Randsburg, and mining will be carried on by power shovel methods. It is expected that the new mill will treat an average of 300 cubic yards every sixteen hours. Ore will be hauled from the workings to the mill by truck. William H. Bickel, Box 254, Randsburg, California, is superintendent of operations for the company, which is a co-partnership headed by Ray Schweitzer, general partner, of Los Angeles. Associated with Schweitzer are: Luis Kemnitzer, Stanley Smith, Lawrence Richards, and A. F. Muter, all of Los Angeles, California; and Austin Landes of Randsburg.

The Anglo American Mining Corporation is starting active development work at the Helen quicksilver mine under a recently granted Reconstruction Finance Corporation loan. The property is located near Mojave in Kern County, California, and was leased by the company last fall from H. W. Gould, 1000 Mills Building, San Francisco, California. The mine had been operated for the past several years by Alan Fleishhacker, San Francisco, under lease from the Gould interests. Walter Lyman Brown, 206 Sansome Street, San Francisco, is president.

COLORADO

The Mt. Elbert housing project at Leadville, Colorado, is being completed at a cost of about \$1,000,000. The homes will be occupied principally by miners of the Climax Molybdenum Company and will accommodate 200 families in eight buildings. The units range in size from single sleeping rooms to three-bedroom apartments.

An RFC loan of \$10,000 was granted the Minerals Reclamation Service, Inc., to develop the Brighton mine at Idaho Springs, Colorado. Formerly operated for its gold-silver values, the Brighton mine is estimated to have 10,000 tons of zinc-lead ore available. The entire output of the property has been sold under contract to Idaho Springs Custom Mill, Inc., at Idaho Springs. Operations will be started immediately. The Minerals Reclamation Service, Inc., has offices at 221 Security Building, Denver.

Production is expected to be started this season at the Junieta mine in Summit County near Montezuma, Colorado. F. S. Chillson of Montezuma is the operator.

The Martinette Mining Company, headed by Clarence L. Martin of Montezuma, Colorado, will start production as soon as the road to the lower foot of the tramway is completed and ore bins are erected. The company is working two shifts of six men at the Superior mine, ore values being in gold, silver, lead, and zinc. Hugh Chisholm of Montezuma is superintendent.

Road work is completed to the Pennsylvania mine in Summit County near Montezuma, Colorado. Reinhardt Swanson, Fremont Goodwine, and Will Swanson have leased the mine from the Summit County Lead and Zinc Company. The Reinhardt Mining Company has been organized to carry on the work and smelter shipments of zinc ore have been started.

The Independence silver-lead-zinc mine in San Juan County near Silverton, Colorado, has been acquired under lease from John A. Hughes of Silverton by O. S. Evans of Shiprock, New Mexico; Ross Fitch of Los Angeles, California; and Frank Webber and W. Lyle Smith of Farmington, New Mexico. The mine is on South Lookout Mountain in the Mineral Creek district and has been idle in recent years.

For the quarter ended March 31, 1943, the Colorado Fuel and Iron Corporation and subsidiaries show a net profit of \$416,389 after charges and federal income and excess profits taxes. This equals 74 cents a capital share and compares with \$823,273 or \$1.46 a share for the like quarter in 1942. The Defense Plant Corporation is reported to have authorized execution of a contract with the CF&I to provide plant facilities in Colorado. The contract is valued at about \$5,500,000. W. A. Maxwell, Jr. Continental Oil Building, Denver, Colorado, is president of the company.

for lead showing these relationships covering a period of over 25 years. Other charts covering tungsten, mercury, chromite, and zinc are available.

Studies by the Bureau of Mines during the past two years have been made on the subject of extractive facilities and some central plants established for the beneficiation of ores in central locations. Individual treatment plants also have been provided in certain cases where the tonnages are large enough to warrant such construction. There are, however, many deposits which are not sufficiently developed to warrant individual plants and these occur in cases where the ore is not sufficiently high-grade to justify shipment to established customs plants. I suggest that consideration be given to the provision of relatively inexpensive "rougher concentrating" units, which might, for example, take tungsten ore containing 1/2 or 1 per cent and produce a rougher concentrate containing 3 per cent or more. The same principle applies in the case of chromite and some other minerals.

Complaint is heard that lending agencies of the government are not sufficiently liberal in providing capital for the construction of new plants, but are insisting that ore reserves be fully developed before proceeding. This is no doubt a wise precaution to take from a strictly business point of view, but its performance does bring about delay in production.

Bitter criticism is heard almost everywhere of the failure of federal agencies to cooperate in building access roads. The complaint is in part due to unreasonable delays in making decisions and in part because government estimating agencies, unfamiliar with the "tractor-trail" type of road construction, base estimates instead on what amounts to highway construction.

There is general difficulty in obtaining labor for these operations, notwithstanding the closing down of gold mines which was expected to make available a greater supply of skilled miners. It is believed that too many skilled miners have been taken into the military and this undoubtedly is a contributing factor. However, many of them have gone into airplane and shipbuilding plants where wages are much higher than in mining operations. Mining operations cannot pay shipyard wages so long as they are obliged to observe the present ceiling prices set by the Office of Price Administration on metals and ores. Prices fixed by government purchasing agencies also prevent payment of comparable wages.

Much complaint is heard of the difficulty of obtaining government financial aid from the Reconstruction Finance Corporation. While this complaint may have had some foundation during the earlier days of the emergency when policies were being formulated, the obtaining of loans for development and plant construction has been vastly liberalized. I believe that the real difficulty experienced by small operators is in their inability to provide adequate information on which to base such loans. This may be due in part to their unfamiliarity with the practices which are conventional and in part to a lack of understanding of the procedure required. Where

representatives of the Reconstruction Finance Corporation are available I have found them ready, willing, and patient in assisting small operators. Many of these objections could possibly be overcome if more representatives were available for field service.

FEDERAL FUNDS APPROVED FOR COLORADO DRAINAGE TUNNEL

FEDERAL funds in the amount of \$1,300,000 are reported to have been granted for the extension of the Treasury tunnel into Black Bear ground at Ouray, Colorado. The loan will cover all expenditures incident to putting the property into production and connecting the upper with the lower or Treasury tunnel level. The tunnel, now 4,500 feet in length, will be driven 1 1/4 miles into Black Bear ground and connected with the workings above by a 1,100-foot raise.

The property is part of the holdings of the Idarado Mining Company, a concern organized in 1939 by the Sunshine Mining Company and the Newmont Mining Corporation. Some development work was carried on until the winter of 1940 when all operations were suspended. The property has been kept on a maintenance basis since that time. The Metals Reserve Company

ETCHART KNEW HIS OBLIGATIONS

'S' funny thing. Can't make it out. John Etchart, Jr., mine foreman of the Golconda Division of the Nevada-Massachusetts Company at Golconda, Nevada, and member of the auxiliary military police at the mine, was commended for meritorious conduct in the performance of his duties. It seems that on April 21, 1943, while on duty at the mine, Etchart was informed that the flood-swollen Humboldt River was on a rampage, endangering a bridge three miles distant. Realizing that this would disrupt transportation to the Getchell tungsten property, stopping supplies from going in and tungsten concentrates from going out, he dispatched a crew and equipment to reinforce the bridge. This was accomplished and the road to the Getchell mine was saved. A good job well done. And the commendation followed. Some never-sleeping eye saw and rewarded.

But—'s' funny thing. Etchart of the Nevada-Massachusetts staff saved a road for Getchell, an independent concern to which he owed no obligation. And some government office, designed for the purpose, took the time and trouble to look into the thing and commend him for meritorious service. We've come a long way from those first landings at Plymouth Rock and Jamestown. And on the trail we've crossed many a bridge that others were not obligated to build. Not obligated? When man's obligation to man stops, the human race stops. We may be wrong, but we think Etchart considered himself obligated to save a neighboring community from being isolated and damaged by flood waters.

leased the Idarado holdings recently and entered into an operating agreement with the Sunshine Mining Company.

The proposed tunnel will drain a number of mines in the area and will give access to them at depth. It is estimated that the project will require about two years for completion and will tap reserves of 275,000 tons of blocked ore and 150,000 tons of probable ore, with a possible zinc production of 5,600 tons annually.

Preparatory work is under way and the contract for the first part of the tunnel work has been given to the Stiers Bros. Construction Company of St. Louis, Missouri. That is the same firm which was driving the Colorado River-Big Thompson diversion tunnel when work was suspended. John R. Austin, known as Long John, who directed the Stiers work on the diversion tunnel and also was in charge of the last part of the Carlton tunnel at Cripple Creek, will have charge of the Treasury tunnel extension.

HOEFLING MAKES FIRST SHIPMENT FROM BIG BEND MINE

HOEFLING BROTHERS have shipped the first 50-ton carload of zinc concentrates from their Big Bend property near Oroville, Butte County, California. The concentrates, which carry 48 per cent zinc and represent 24,000 pounds of metallic zinc, were shipped from the Pulga Station in Feather River Canyon to an Idaho smelter. A similar shipment is scheduled to go out every 10 days or two weeks.

The Big Bend ore is being treated at the company's Surcease mill near Oroville. The plant, which formerly treated gold ores from the Surcease mine, recently was revamped for the treatment of zinc ores, and a loading station for concentrates was built at Pulga on the Western Pacific Railroad, a distance of 17 miles from the mill.

The Big Bend property has been under exploration and development by Hoefling Brothers since October 1942, with poor roads and weather conditions seriously handicapping operations during the winter months. However, an access road to the property has been completed and the mine shaft is down about 200 feet. At the present time, about 25 tons of ore are being mined and milled daily, but, if mine developments prove favorable, it will be possible to increase milling capacity to 100 tons of ore daily.

No electric power is available at the mine, and a Diesel-powered compressor furnishes air for drilling, pumping, and hoisting. It is worthy of note, in view of wartime shortages of mining equipment, that all operations at the Big Bend so far have been conducted without the demand for a single new piece of equipment. All equipment and many supplies came from the Surcease mine, which was shut-down by the WPB gold order in October 1942.

W. E. Messner is superintendent of operations, assisted by Jack Lawton as mine foreman and John Gustafson as mill foreman. Hoefling Brothers, J. W. Hoefling, managing partner, have headquarters at 1820 D Street. The company is addressed at Box 786, Sacramento.

OBITUARIES

Frederick H. Luetjens, 66, of Reno, Nevada, died May 11, 1943, at his home in Reno. Luetjens, who was in Tonopah and Goldfield during the boom days of those camps, had been active in mining in Nevada until his health broke several years ago. Among his other interests was a part ownership in the Carroll Summit gold property in Churchill County.

J. Burns Read, 60, professor of mining and head of the mining department of the Colorado School of Mines at Golden, died May 8, 1943. He was graduated in 1906 from the South Dakota School of Mines, receiving a degree of bachelor of science. Two years later he received his degree in mining engineering from the same institution. He was on the operating staffs of a number of mining companies from South Dakota to California and also worked in British Guiana, before starting on his teaching career. He taught in the Case School of Applied Science, Cleveland, Ohio, and at the University of Illinois at Urbana, before returning to the west.

HAROLD WALLACE ALDRICH

HAROLD WALLACE ALDRICH, one of the nation's outstanding metallurgical engineers and authorities on the leaching process for reclaiming copper, was found dead at the El Encanto Apartments, Phoenix, Arizona, June 20, 1943. It is believed that the 58-year old engineer took his own life because of ill health. He had been retired from his position as leaching plant superintendent of the Inspiration Consolidated Copper Company, Inspiration, Arizona, on September 1, 1942, because of illness, and had been living in Phoenix since that time.

Aldrich was born in Canova, South Dakota, and was a graduate of the Colorado School of Mines, Golden, Colorado. In 1906 he worked in the cyanide plant of the Black Mountain Mining Company, Magdalena, Sonora, Mexico, and also was assayer for the Langridge Cyanide Mill, Boulder, Colorado. In 1907 he became assistant testing engineer and chemist for the Anaconda Copper Mining Company, Anaconda, Montana, a position which he held until 1917. During the next nine months, he served as general superintendent of the Ladysmith Smelting Corporation, Ladysmith, British Columbia, after which he returned to the Anaconda concern as smelting superintendent. From 1918 until the present time, Aldrich was employed by the Inspiration Consolidated Copper Company, where he was in a large measure responsible for the successful development and operation of that company's leaching plant.

CALIFORNIA MINING BILL VETOED BY GOVERNOR WARREN

SENATE BILL NO. 414, providing for the reorganization of the California State Division of Mines, has been pocket vetoed by Governor Earl Warren. The bill called for an enlarged state mining board, headed by the state mineralogist and entirely separate from the California Department of Natural Resources.

YUBA CONSOLIDATED ALLOWED EXTENSION OF OPERATIONS

THE War Production Board has granted permission to the Yuba Consolidated Gold Fields, Ltd., to continue dredging operations near Hammonton in Yuba County, California, until August 8, 1943. The WPB action represents the second extension for the dredging concern, the first having allowed the company to operate two dredges, under various restrictions, for the six-month period from December 1942 to June 8, 1943.

Prior to the War Production Board gold closing order, Yuba Consolidated had been carrying on work at Hammonton;

Biggs, Butte County; Callahan, Siskiyou County; and Watertown near Merced, Merced County, California.

Yuba Consolidated has reported a net profit of \$612,068 for the fiscal year ended February 28, 1943. This amount is equal to 27 cents a share on 2,300,000 shares of capital stock and compares with a net profit of \$1,173,413 or 51 cents a share for the previous year. It was announced that the number of ounces of fine gold produced declined to 102,223 compared with 143,905 a year earlier. Two dividends of 10 cents a share and two of 5 cents, totaling \$705,330, were paid by Yuba Consolidated Gold Fields.

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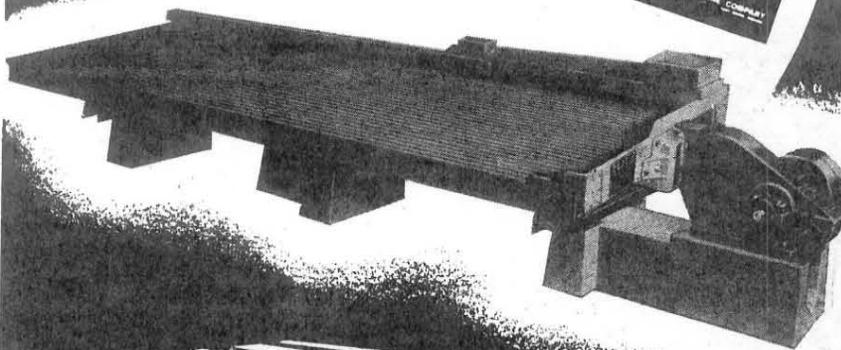
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UTAH COPPER VETERANS RECEIVE AWARD FOR 20 YEARS' SERVICE

GOLD lapel pins, gold medals, and certificates of award were given to 133 veteran employes by the Utah Copper Company at its annual veterans' banquet. A veteran in Utah Copper parlance is an employe who has been in continuous service for 20 years.

D. D. Moffat, president and general manager of Utah Copper, presented the awards and pointed out that such a record was of vital importance to the prosecution of the war.

KLAMATH RIVER MINES GROUP MEETS WITH MINING COUNCIL

THE Klamath River Mines Association, Box 147, Happy Camp, California, has reported an attendance of approximately 250 mining men from California and Oregon at a two-day conference held jointly with the Western Mining Council on June 5 and 6 at Happy Camp. J. P. Hall, president of the Western Mining Council, Auburn, California, presided over the meeting.

The problems of the small mine operators were discussed, particularly in relation to the production of chrome and manganese and to the need for access roads. Vigorous criticism of the government's price program was registered.

NEW BONUS PLAN TRIED BY CALLAHAN ZINC-LEAD

A NEW bonus system has been approved by the Nonferrous Metals Commission of the National War Labor Board at Denver, Colorado. The plan is based upon a point system that is tied directly to the mill capacity of the plant involved and is designed to stabilize labor. Approval of the system was asked by the Callahan Zinc-Lead Company of Cascade, Idaho. The company, engaged in the mining and milling of lead, zinc, and silver, reported that its operations were handicapped by the inability to obtain and retain employes because of the low wage schedule as compared with other operations in the area.

The approval order stated:

"The plan consists of a fund which is to be divided equally among all the employes. The actual size of the fund is calculated on the basis of a point system wherein a unit of production of zinc, lead, or silver constitutes one point. For all points in excess of 16,000 per month, the company pays 25 cents per point. The 16,000-point criterion is based on the capacity of the mill, which is 100 tons per day."

The approval of the commission has four conditions: The point basis for determination of the bonus shall be tied directly to mill capacity; quarterly reports shall be submitted showing the average hourly bonus per month, production per month, changes in unit cost, and statements on the progress of the incentive wage system; a full description of the plan shall be posted by the company and copies sent to the commission; the system shall not increase the level of production costs appreciably nor furnish a basis either to increase prices or resist price reductions.



John Van Nostrand Dorr . . . from a painting by Karl Anderson. Buildings of the Westport Mill, research and testing laboratories of The Dorr Company, comprise the background.

COLUMBIA AWARDS DEGREE TO JOHN VAN NOSTRAND DORR

AN honorary degree of Doctor of Science was conferred upon John Van Nostrand Dorr by Columbia University on June 1, in recognition of his contributions to metallurgical, sanitary, and chemical engineering as an engineer, inventor, and administrator.

The citation read as follows:

"John Van Nostrand Dorr, graduated at Rutgers University from which he entered upon a long and most useful career as engineer, inventor, and administrator in the fields of metallurgical, sanitary, and chemical engineering, with results which have been of exceptional service to the American people and their industries."

It is significant, however, that his basic inventions were developed primarily for gold milling, and his initial development of new techniques and methods of liquid-solid handling was born of metallurgical problems.

Dorr has been the recipient of a number of other honorary degrees. In 1914, Rutgers University, from which he was graduated in 1894, made him a Master of Engineering, and in 1927 presented to him the honorary degree of Doctor of Science. In 1940 both the South Dakota School of Mines and the Michigan College of Mining and Technology conferred upon him honorary degrees of Doctor of Engineering. He is president of The Dorr Company, Inc.

The Callahan Zinc-Lead Company does not believe the plan will bring higher production costs because the output per man will be greatly increased under the bonus impetus. However, it is estimated that a wage increase of \$2 per shift for the 65 men employed may result.

WORK STOPPAGE IS AVOIDED IN BUTTE MINERS' PROGRAM

MINERS' Union Day in Butte, Montana, the traditional labor holiday, was formally celebrated on Sunday, June 13, in order to avoid disruption of copper production. A parade, sports program, and public addresses were featured. On Monday the stores, city offices, and banks in Butte were closed.

Last year the Butte miners, through union and company officials, decided to observe Miners' Day by "continuing production of copper to end the present war as soon as possible."

NEW ROUTINE IS NECESSARY FOR FREE ASSAYS IN OREGON

THE State Department of Geology and Mineral Industries at Portland, Oregon, has announced that until further notice ore samples presented to the department's laboratories at Grants Pass and Baker will have to be transmitted to Portland for assaying. Assayers from both laboratories have left the department to accept higher pay war jobs, but will be replaced as soon as possible. The two laboratories will be kept open part time and ore samples should be sent as before to Grants Pass or Baker and not direct to Portland. The department urges prospectors and miners to send only samples of war minerals for assaying until such time as both laboratories are fully staffed. Assay results will be given to the sender by the office to which he delivered his samples.

Earl K. Nixon is director of the department, which has headquarters at 702 Woodlark Building, Portland. Free assaying of samples is one of the many services which the department offers the miners of the state.

HOOK AND FARLEY START DEVELOPING WILLIAMS MINE

ACTUAL development operations have been started at the Williams mine, about six miles southwest of Grass Valley, California, by George H. Hook, Auburn, and Thomas E. Farley, Hollywood, following a three-month prospecting program. The operators have opened a shallow shaft to expose a four-foot vein of ore assaying 12.6 lead, as well as some silver and copper. The shaft was continued to a depth of 80 feet where two small crosscuts opened up an eight-foot vein of high-grade ore, assaying as high as 20 per cent lead.

Nevada County road equipment was used to build 3½ miles of new road, and the operators have installed a compressor, hoist, pumps, hammers, and other equipment. The headframe has been completed and a new shaft has been started. A crew of four men is being employed at present, and three shifts are expected to be on the payroll in the near future. Ore shipments will go directly to the Selby smelter until a mill is constructed at the Williams mine.

The property was discovered in January 1943 by Hook and Farley and the mineral rights are held under purchase agreement with the owner, Luke Williams, 226 Church Street, Grass Valley, California. The property comprises approximately 720 acres. Hook is consulting engineering in charge of the mining operations.

CALIFORNIA IRON OUTPUT FOR YEAR 1942 ANNOUNCED

IRON ore shipments in the State of California during 1942 are reported to have totaled 94,092 net tons, valued at \$344,062. The figure represented the largest annual iron output in both amount and value ever produced in the state. Ore shipments during 1942 were made from three properties in San Bernardino County and from one mine in Inyo and one in Shasta County.

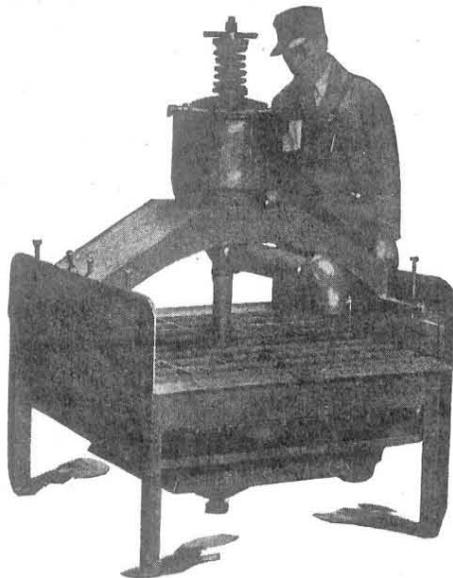
The San Bernardino County ore, some of which went to the new Kaiser steel plant at Fontana, California, was hematite, while the Inyo and Shasta production was magnetite and used principally in heavy concrete for ballast.

BAN LIFTED ON DEVELOPMENT OF NEW SOURCES OF POTASH

A RECENT order issued by Harold L. Ickes, secretary of the interior, lifts an eight-year limitation on development of new sources of potash and assures an increased supply of the mineral to help meet wartime demands for both agricultural and manufacturing purposes. Restrictions against granting of potash development leases were placed in 1935 to maintain the domestic industry in the face of importations.

According to Ickes, recent investigations by a special departmental committee show that the market situation which led to issuance of the original order does not now exist.

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cently sold his interest in the mine to Ramsey and Martin. A crew of six men is being employed under the direction of Ramsey, mine superintendent.

The Manganese Ore Company is reported to have started churn drilling operations at its Price manganese claims in order to determine the extent of the manganese deposit. Leland Dykes of Kingman, Arizona, is in charge of the drilling program. The Price group of claims, located in the Artillery Peak district of Arizona, recently was taken over under a 70-year lease by the Manganese Ore Company from the Arizona Manganese Corporation, which had been developing the property for the past 10 years. The Manganese Ore Company is a subsidiary of the M. A. Hanna Company, G. M. Humphrey, president, 1300 Leader Building, Cleveland, Ohio. Mack C. Lake, 206 Sansome Street, San Francisco, California, is consulting engineer in charge of manganese investigations for the Hanna Company, as well as vice-president of the Manganese Ore Company.



Production of short-fiber asbestos is continuing from property of Kohler and Chase near Monticello in Napa County, California. Head offices for the concern are located at 26 O'Farrell Street, San Francisco, California.

Operations have been started again at the old K. B. manganese mine, southwest of Elk Creek in the Mendocino National Forest near Willows, Glenn County, California. A crew of eight men is being employed and three bulldozers are used in the mining program. Ore is being trucked daily to the railhead at Fruto for loading at the recently completed ramps. C. M. Syar of Vallejo, California, is owner and operator of the mine. J. Savage of Stonyford, California, is mine foreman.

A three-mile road has been completed by Ralph Thompson, Box 2, Cloverdale, California, to his Black Oak quicksilver mine on Squaw Creek in Sonoma County, California, as part of the expansion program under way at the property. A new



compressor also has been installed. Thompson sold the mine to San Francisco interests last winter, but is continuing as general manager of operations.

The Hecla Mining Company of Wallace, Idaho, is planning to start milling of zinc ores from the Blue Moon mine at Hornitos, California, in December at the rate of 200 tons daily. Hecla has contracted with the Metals Reserve Company for delivery of 15,000 tons of concentrates carrying 52 per cent zinc. Mill construction work is proceeding at the Jenny Lind plant, which Hecla recently leased from the Lind Mining Company, P. R. Bradley, Jr., Jamestown, California, president. The Blue Moon formerly was worked by Red Cloud Mines, Inc., Hornitos. L. E. Hanley, Wallace, Idaho, is president and general manager of Hecla.

A. Godfrey Bailey, 1208 Fourth Avenue, Los Angeles, California, is said to be making arrangements to ship iron oxide ore from the Sunrise quartz mine, which he is operating under lease. A substantial tonnage of the ore is said to be blocked out. Bailey also plans to work the gold vein on a small scale. The mine is located at Quincy in Plumas County, California.

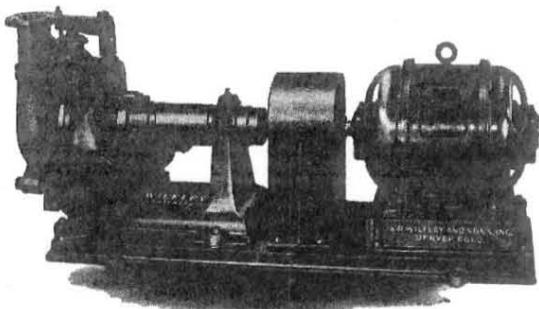
E. S. Armstrong, 1200 Rives-Strong Building, Los Angeles, California, is engaged in opening up the Amador Consolidated claims four miles south of Grass Valley, California. A 250-foot shaft is being rehabilitated and the exposed ore is said to carry high-grade values in scheelite and some gold. Frank Roberts is in charge of work. The mine is owned by Donald W. Johnson, 715 Eleventh Street, Sacramento, California, and Etta A. James, Tonopah, Nevada.

The Central Eureka Mining Company, 111 Sutter Street, San Francisco, California, is reported to be making repairs at its gold property at Sutter Creek, California, with the hope that some reduction in expensive maintenance may be possible. Since the company's gold operations were closed down by WPB order in October 1942, constant dewatering and timbering has been necessary to keep the mine in condition for operation after the war. The company is working the Central Nevada copper property at Battle Mountain, Nevada, at present, having expended about \$20,000 so far in development and rehabilitation work. C. C. Prior, 111 Sutter Street, San Francisco, is president of Central Eureka.

Following a test milling of 200 tons of ore from the Gold Basin mine in the Randsburg district of California, six custom millings have been handled at the Barker plant at the site and time has been reserved for two more. It is understood that the mill will continue to be available to independent producers for custom millings during the intervals between Gold Basin runs. Shipments to the Barker mill have varied from 4 to 55 tons and the ore carried from 1/2 to 10 per cent scheelite. The milling plant, which was rehabilitated recently by means of RFC funds, has a top capacity of 100 tons per day. Clarence A. Barker, 840 West Seventh Street, Los Angeles, California, is owner and operator of the Gold Basin. James B. Nossler is general superintendent.

John O. McBroom and son of Cecilville, California, are reported to have resumed shipment of chrome ore by pack train from properties in Dry Gulch near Cecilville, Siskiyou County, California, following suspension of work for a while because of weather conditions. There is reported to be a considerable tonnage on several dumps in the gulch but truck trans-

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portation to the Yreka or Arcata Metals Reserve stockpiles has proved to be a problem, due to poor road conditions.

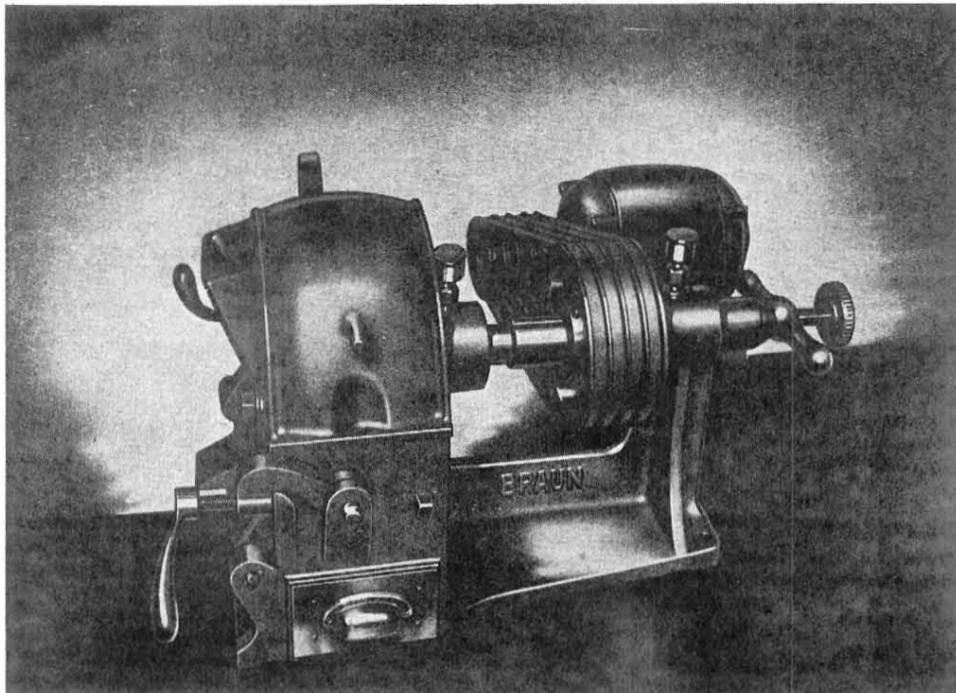
Machinery and equipment have been installed by Lewis F. Johnson, Auburn, California, at his Lakeview copper-gold-silver mine six miles east of Auburn, and plans are being made for the construction of a reduction plant at the site. Primary development at the mine includes continuation of the present tunnel for another 150 feet to intersect the vein 80 feet below the bottom of the inclined shaft and, after development of the upper levels is completed, it is believed that a main working tunnel will be driven 800 feet lower from a near-by canyon. When regular production is under way it is expected that a crew of at least 40 men will be employed.

Carl Howe of Chinese Camp, California, recently started regular manganese production at the Gray Eagle mine near Chinese Camp, Tuolumne County, following installation of a milling plant at the property. The property, leased by Howe for three years from H. R. Vail, comprises nearly 40 acres and is said to have been a good producer during the last war. Howe has been employing a crew of about eight men, but he expects to increase that number in the near future.

The Natomas Company, Thomas McCormack, president, Forum Building, Sacramento, California, has reported a net loss of \$54,315 for the quarter ended March 31, 1943. In March, the company had been allowed by the War Production Board to continue operation of two of its seven dredges for the production of gold in the Folsom district of California, and the company showed a profit of \$4,817 for that month as against a loss of \$59,132 for January and February. During the first quarter of 1942, the company earned \$245,997 after all charges, equal to 26 cents a share on outstanding capital stock. It is announced that, although the company is operating at a small profit, no dividends will be paid until conditions improve.

The Magnesite Company of America has started shipping magnesite ore from its Brown property located about 12 miles west of Needles, California, following completion of an access road to the deposits. The Magnesite company is a newly incorporated group and is operating the mine under contract from the owners, J. Lex Brown, Box 143, Needles, and associates. The new company hopes to maintain a daily production of from 100 to 600 tons and will ship to the calcining plant of the Tycrete Products Corporation at Chula Vista, California. Mining at the Needles property is by power shovels. Mitchell L. Liebenson heads both the Tycrete and Magnesite companies, and H. A. Pelton is engineer for the Magnesite Company of America.

Panaminas, Inc., is reported to have increased daily production from its Adamson mine to about 250 tons, with ore coming mainly from the 1,200-foot level. The ore is shipped to the U. S. Vanadium Corporation mill near Bishop, California. The mine is located in the Pine Creek area near Bishop, and is a tungsten operation. The company is employing a crew of about



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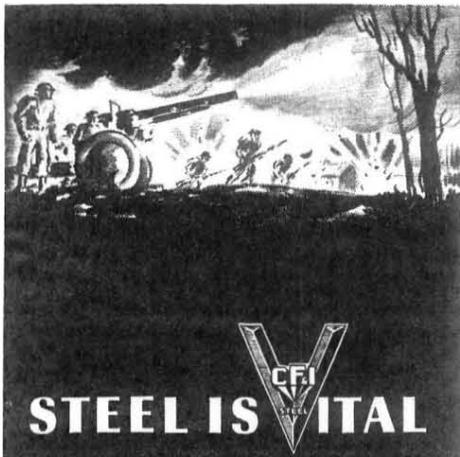
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150 men in the Adamson operations. It is understood that the new aerial tram now under construction will be ready for operation this summer. Panaminas, Inc., which maintains head offices at 230 Park Avenue, New York, New York, is a subsidiary of Ventures, Ltd., a Canadian company. A. H. Heller, 1800 North Hill Avenue, Pasadena, California, is general manager of operations for Panaminas and Frank Merrill is superintendent.

The Haunganese mine near Twain in Plumas County, California, has been leased to George W. Usher of Crescent Mills, California, by the owners, Henry Haun and Bob Holstrom, both of Quincy, California. At present, ore runs from 40 to 42 per cent manganese.



Production of lead-zinc ore from the Monte Carlo mine will be started in June by the Golden Cycle Corporation. The mine is located near the top of Hoosier Pass in Summit County, Colorado. It is a surface proposition and the material will be handled by drilling and blasting. Loading will be done by power shovel, and the ore will be trucked to Divide for shipment by rail to the Golden Cycle plant near Colorado Springs.

The Mile High Mining Company has leased for another two-year period the Silver Leaf mill of the Consolidated Smelting and Metals Company near Silver Plume, Colorado. The company operates the Smuggler mine at Silver Plume, employing about 20 men and treating the mine output in the Silver Leaf plant. High-grade ores and the lead concentrates are sent to the Leadville plant for treatment and the zinc concentrates are handled at Amarillo, Texas. George Rowe of Silver Plume is manager.

Permission to continue gold mining operations has been granted the gold mines at Cripple Creek, Colorado, by the mining division of the War Production Board. The WPB originally permitted the mines in the area to operate six months from December 8, 1942, under a special ruling. This has now been extended two months to August 8. The mining committee of the senate is holding hearings on possible amendments to the original limitation order put into effect last October.

The Hamlet-Dexter Corporation is reported to be reopening its Hamlet lead-zinc mine at Silverton, Colorado. Some retimbering will be done and workings must be cleaned out before production can be started. Al Kolz of Silverton is superintendent and E. A. Ritter, 604 Empire Building, Denver, is consulting engineer. E. R. Edgcomb, 235 Harvey Street, Philadelphia, Pennsylvania, is president of the Hamlet-Dexter company, which also holds the Dexter gold mine at Cripple Creek.

General Ore Reduction Company is the name of the new concern which will handle the sampling project being started by G. A. Franz, Jr., and R. K. Franz, both of Ouray, Colorado. Small lots of ore will be

WANTED: RFC LOAN OF 200 MEN

Some of the mining fraternity in Idaho have a new suggestion to make. Many of the mines and mills in the famous Coeur d'Alene district are operating one or two shifts, in spite of the recognized need for the lead, zinc, silver, copper, and antimony which that district turns out. The answer of course is simple; manpower shortage. The suggestion is that the government, instead of loaning money to develop new prospects, loan the mine operators men with which to work the mines already developed.

sampled by the concern and treated in the G. A. Franz mill at Ouray. G. A. Franz, Jr., is general manager, and R. K. Franz is superintendent. The sampler will increase the output of the region by simplifying the shipments of ore by the small producers.

The Fairview manganese mine south of Silverton, Colorado, is being reopened under the management of Gustavus Sessinghaus, now in Silverton. The property is on Sultan Mountain about four miles south of Silverton in San Juan County and has been idle during the past few years.

County aid for road improvement is being sought by the Callahan Zinc-Lead Company for its Akron zinc-lead mines in the Whitepine area near Gunnison, Colorado. At present 35 men are employed and a power line from the Monarch quarry has been strung to the property. It is hoped that production can be increased materially this summer. D. Ray McDonald, Whitepine via Sargents, is manager of the Akron Unit and L. B. Stitzer of Gunnison is superintendent.

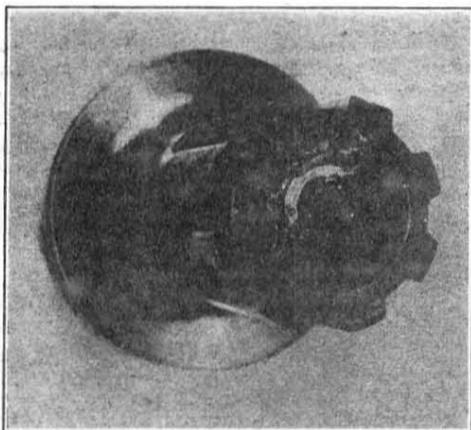
Building of a truck trail to the upper workings of the Red Elephant Mines, Inc., has been started by the forestry service. The company is maintaining development work and operating the mill on a one-shift basis, handling the ore through the Commodore tunnel. Charles Hull is mine superintendent and O. J. Cross is mill superintendent, both of Idaho Springs. The property is near Lawson.

Shortage of labor was the deciding factor in the closing of the gold property of the Minnesota Mines, Inc., at Empire, Colorado. Sufficient ore could not be produced to keep the mine and the 250-ton mill operating on a profitable basis, so all work was suspended for the duration or until such time as more manpower is available. C. P. Clifford of Empire is general manager of the company.

A recent shipment of 56 tons of ore from the Greenville mine in Routt County, Colorado, to the International smelter in Utah, is stated to have run 16.8 per cent zinc, 3 per cent lead, 1 per cent copper, and 1 ounce of silver to the ton. Returns, including bonus, amounted to \$11.66 a ton. The mine, developed over a period of years by the late George Franz, is being operated by his son, Milbank Franz of Clark. Over 3,000 feet of workings have been driven in the group, which consists of 10 claims. Seven men are employed in two shifts. Government en-

DRILL steel for rock drills should be of the type that will withstand repeated forgings and poundings. An ample supply of sharpened steel always should be kept on hand to prevent any work stoppage due to inadequate supply. When in storage, drill steels should be kept sorted so that the operator or blacksmith does not have to rummage through an odd assortment to obtain the proper type and size. Detachable bits eliminate the need for hauling large quantities of steel back and forth between the forge shop and the job, and they also reduce the amount of steel tied up in one place. Most sizes of detachable bits may be reground several times.

The shank ends of the drill steel and the ends of the pistons in the rock drills should be ground square; however, it is wise not to grind too much steel off the piston end, because there is danger of exposing the soft core of the metal. Time consumed in forging shanks can be reduced by the use of drill-steel sharpeners, which accurately form the hot metal into the proper shape.



Piston spalled on striking face, the result of using shanks which were not properly ground square.

When forging a bit, the blacksmith must use not only the utmost care in shaping the piece, but he also must pay careful attention to the heat treatment. The bar steel to be forged should be carefully handled, because any nick on the surface may be the origin of a fracture. When the steel is heated, the heated area should be no longer than is necessary. (Drill steel forging temperatures should be kept between 1,900 and 2,100 degrees. These temperatures color the metal orange to lemon yellow.)

Steel should not be kept at the higher temperatures any longer than necessary; for high temperatures induce decarburization, which reduces wearing and cutting qualities.

When drill steel is forged, particular attention should be given to the hole that extends through the inside of hollow steels. If this hole is too small, it will restrict the flow of air or water; and in the case of wet machines it will damage the water tubes.

Bits are hardened by heating to 1,450 degrees Fahrenheit. The end of the bit should be submerged in running water or

brine to a depth of $\frac{3}{4}$ -inch and when the color fades completely, the entire heated end of the bar should be submerged and allowed to cool. If the ground water in a given locality is alkaline, rain water should be used. Drill shanks should be heated to 1,550 degrees Fahrenheit and quenched in quenching oil, which should be circulating. Hardness of shanks should be kept between 350 and 400 Brinnell.

Rock drill parts will break if the air pressure is too high. Low air pressure also should be avoided as it is especially damaging to stoping drills, since it will not hold them up to the work properly. Water pressure in drills should not be higher than the air pressure, for this will drive water into the drill mechanism and wash away the lubricant.

Inspection should be made at frequent and regular intervals.

If these instructions are judiciously followed, a definite contribution will be made to war production.

CAPACITY OUTPUT OF WAR METAL STARTED BY BASIC MAGNESIUM

THE tenth and last unit of the Basic Magnesium, Inc., metal plant at Las Vegas, Nevada, was put into operation June 26, 1943. Rated metal capacity of the plant is 150 tons daily, but production is reported to be exceeding that figure. The first metal was poured on August 31, 1942, less than a year after construction contracts were signed.

F. O. Case, 720 South Seventh Street, Las Vegas, is general manager, assisted by H. G. Satterthwaite and Gurnsey Frazer. The staff at the Las Vegas plant also includes J. Ray Coulter, production superintendent; B. D. Harden, reduction superintendent; J. M. Casteras, refineries superintendent; and S. W. Stockdale, chlorine and caustic superintendent.

Mill feed for the Las Vegas plant is supplied from the Basic Magnesium mines and calcining plant at Gabbs, Nevada, about 300 miles away. The whole project was started in mid-1941. Production was started within a year and capacity production was reached in less than two years. Besides the mine, mill, and metal plant, two complete towns have been built to accommodate the thousands of workers at Gabbs and Las Vegas.

MANPOWER SHORTAGE AT ALASKA SCHOOL OF MINES

One of the temporary fatalities of World War II is the School of Mines of the University of Alaska. Closed for the duration, it is, but will be reopened as soon as the war is over. It seems that the undergraduate student body went off to war and the faculty also joined up, and as there were no women to carry on, the school was closed.

Alaska is proud of her budding engineers and will welcome them back when the war is won. Meanwhile a certain song, dear to the hearts of mines undergraduates is being shouted wherever there are American soldiers, which is all over the world.

NECESSARY DEVELOPMENT WORK CAUSES SLUMP IN PRODUCTION

A NET loss of \$31,000 is reported by Consolidated Coppermines Corporation, 120 Broadway, New York 5, for the first quarter of 1943. This compares with a net profit of \$111,147 in the like quarter of 1942. The unsatisfactory earnings experienced during the first quarter were caused largely by an abnormal decline in production due to the acute shortage of manpower available for mining operations. During the latter months of 1942 the hope of obtaining additional men encouraged the management to maintain production at the expense of repairs and development. Early this year, however, it became necessary to divert miners from actual production to repair and development work. Output will continue to suffer until a full number of workers can be recruited.

The company recently received a further downward revision in its monthly production quota, effective last March 1, which is expected to result in the payment of premium prices for a large part of its output.

John A. Payne of New York is president and C. I. Cook of Kimberly, Nevada, is general manager.

NEW GROUP TAKES OVER NEWTON COPPER PROPERTIES

THE Winston Copper Company of Los Angeles recently took over the old Newton copper mine from J. H. Lester of Madera, California, who reopened the property last fall. The mine is located in Amador County, California, about seven miles from Jackson. Lester will retain a participating interest in the Newton mine.

It is understood that the new operators will apply for a Reconstruction Finance Corporation loan in order to continue the development program which Lester had started. Dewatering of the mine to the 400-foot or lowest level was completed by Lester, and a Bureau of Mines drilling program in January of this year uncovered an extensive deposit 350 feet below the 400 level. Three 50-ton carloads of ore were shipped by Lester to the American Smelting and Refining Company. The ore averaged over 10.5 per cent copper without sorting.

The Newton copper property, which comprises 675 acres, is owned by Fred Dufrane. The 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. It is estimated that Meader shipped about 1,200 tons of copper ore, leaving 40,000 tons in sight when the mine was shut down.

The Newton was reopened in 1886 by Howard D. Ranlett, who installed an 80-ton smelter. Ranlett is reported to have treated about 3,500 tons of ore and in 1889 he 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.

MURRAY PROPOSES PLAN FOR PAYMENTS ON WAR CONTRACTS

AMONG measures before the United States Senate is a bill, introduced by Senator James E. Murray of Montana, to regulate payments in connection with the termination of any contract related to the prosecution of the war. It would apply to any procurement department or agency of the government.

According to Senator Murray:

"The purpose of the bill is to provide a quick method of paying war contractors and subcontractors the money that is due to them upon termination of a war contract. Unless action of this type is taken, thousands of small businessmen whose contracts have been or will be terminated because of cut-backs may not be able to continue in operation until they obtain other work. If smaller subcontractors have to wait until payments are negotiated with their prime contractors before they can be paid, interests of small business will be seriously jeopardized. When the war is over, of course, the situation will become even more serious. Unless payments on terminated contracts are made quickly, before complete audits are made, and unless payments can be made directly by procurement agencies to subcontractors, it will be impossible to avoid a serious unemployment crisis."

Under the Murray bill, the problem would be met in the following manner:

- (1) Partial payment would be made upon certification of the contractors or subcontractors without waiting until the full audit is made;
- (2) Payments would be made directly to subcontractors instead of having the money seep down from prime contractors to each layer of subcontractors;
- (3) Where payments are delayed by any reason, the procurement agencies would make advance loans;
- (4) Uniform regulations would be established by the chairman of the War Production Board, or such other official as the President may designate, in order to avoid the chaotic situation which would result if every agency established its own policies and procedures.

The proposed measure is of interest to mining men as its provisions would apply to all Metals Reserve Company purchases, and other minerals and metals agreements and contracts.

OREGON STATE DEPARTMENT

DESCRIBES LITTLE KNOWN AREA PAMPHLET, known as G.M.I. short paper No. 11, has been published by the Oregon State Department of Geology and Mineral Industries on the mineral deposits in the area of the junction of the Imnaha and Snake rivers in Oregon. The report, which is by F. W. Libbey, department engineer, describes the results of investigations made in May and September 1942. No previous report on this rather inaccessible area has been published. The pamphlet contains 17 pages and six plates and includes claim maps, tunnel maps, and a reconnaissance geologic map. It may be obtained from the department office in Baker.

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LABOR SHORTAGE SLOWS UP BAGDAD COPPER OPERATIONS

APPROXIMATELY 1,400 tons of copper ore are being handled daily by the Bagdad Copper Corporation, following the recent completion of the new flotation plant at Hillside, Arizona. It is announced that mine development has progressed to the point where capacity production of 2,500 tons is possible, but increased operation is being held up by a serious labor shortage.

Construction of the new milling plant was included in an expansion program which was financed by a \$2,500,000 loan, authorized on October 16, 1941, by the Reconstruction Finance Corporation. The entire project involved the mill construction, sinking of a new three-compartment shaft, and providing a 7½-mile water-supply pipe line, a 23,500-foot tailings line, and camp improvements.

Preliminary construction work was started at the Bagdad property in February 1942 and shaft sinking operations were well under way by the end of March. Actual construction of the new mill was started by the Southwestern Engineering Company of Los Angeles, California, in April 1942. The 70-mile power line from Parker Dam was completed and power was turned on February 15, 1943. Because of the comparative remoteness of the Bagdad property from rail connections, the War Production Board authorized a mine access road project, at an estimated cost of \$97,000. The regional office of the Public Roads Administration was authorized to proceed with the road construction work in February of this year.

The Bagdad property is located in the Copper Creek region of the Eureka mining district of Yavapai County and is 28 miles northwest of Hillside, Arizona. The entire holdings, including townsite, mill-site, and damsite cover an area of approximately 4,500 acres.

The Bagdad ore body is a porphyry deposit, the copper mineralization being disseminated chalcocite and some chalcopyrite in a large island of monzonite. The monzonite extends for about a mile on an east-west axis and three-quarters of a mile north and south. The monzonite is bounded on the north by a schist area on which the Hillside mine is situated. On the other sides it is bounded by a granite-schist complex cut with pegmatite dikes. It has been estimated that there are 6,250,000 tons of ore averaging 1.47 per cent copper; 18,250,000 tons, 1.25 per cent copper; and 37,000,000 tons, 0.985 per cent. The Bagdad concern is treating the higher grade ore at present.

The Bagdad claims originally were worked by the Giroux Syndicate in 1906 and a few years later the Bagdad Copper Company was formed to operate them. The property was taken over in 1919 by the Arizona-Bagdad Copper Company, which carried on operations until 1927, when the company was reorganized as the Bagdad Copper Corporation.

Production was carried on intermittently and on a small scale prior to the time the property was acquired by the present op-

erating concern. Principal work from 1906 until 1928 consisted of prospecting and development to block out the ore body. In 1928 a series of metallurgical tests were started and a 50-ton pilot mill was erected. Capacity of this plant was increased to 200 tons daily late in 1930. At the time the latest development program was begun, the company had been producing about 275 tons daily. A total of some 200,000 tons of ore has been treated at the Bagdad mill, with total copper production reported by the Bagdad Copper Corporation running about 4,800,000 pounds.

Work at the Bagdad Copper Corporation's property is under the direction of Jack W. Still, Hillside, who has been general manager for the company since 1937. S. A. Millikin, 480 Arcade Avenue, Cleveland, Ohio, is president of Bagdad and C. Q. Schlereth, Route 8, Box 258-B, Phoenix, Arizona, is vice-president. Elmer Tomkinson is general mine foreman; J. C. MacIntosh, mill superintendent; Roscoe Duncan, general mill foreman; Walter Deacon, chief electrician; Clint Anderson, master mechanic; E. G. Green, chief chemist; and Robert Foudy, chief clerk. All are addressed at Hillside, Arizona.

THE WAY OF SO MANY "IDEAS"

Hiring agents representing the Phelps Dodge Corporation, Miami Copper Company, Inspiration Consolidated Copper Company, the International Smelting and Refining Company, and the Castle Dome Copper Company recently opened a labor recruiting drive in Los Angeles. They were joined by Basic Magnesium hopefuls from Nevada and, in the meantime, the aluminum plant at Torrance, California, was calling for workers to man its production lines. The copper industry was seeking 5,000 men, while the number of workers needed by the magnesium industry was placed at several thousand.

At first glance it all sounded "big," but characteristically we didn't hold our breath awaiting spectacular results. And wisely, too, for we have been informed that on the first day exactly 15 men were recruited by the copper representatives. Again characteristically, we still are wondering about the 3,500 former gold miners who are still unaccounted for. We understood that the WPB intended that they should work in copper and other strategic metal mines. It wouldn't be at all surprising to us to learn that the great majority had been snapped up by other defense industries, many of which already have more men than they can find jobs for. It is entirely conceivable that the workers could be persuaded through defense wages to twiddle their thumbs for 48 hours a week, so that defense industries other than mining can be assured of sufficient laborers to counteract future labor turnover. Of course, it all comes back to the old problem. How are we going to produce guns and planes and battleships unless we have the metal?

BRUSH CREEK PROPERTY OPERATED ON SMALL SCALE

AN average production of 100 tons of gold ore a month is being maintained at the old Brush Creek mine situated near Goodyears Bar, California, with the hope that, after the war, an extensive development program may be carried out. The owning company is the Alpha Hardware and Supply Company, Fred F. Cassidy, Nevada City, California, president.

All work at the Brush Creek is being done by Lafayette Hutton, Goodyears Bar, with the occasional assistance of another man. The ore is trucked a mile and a half to the one-stamp mill for treatment. The stamp was designed and patented by Arthur B. Foote, Box 1026, Grass Valley, California, and is reported to do the work of an ordinary four-stamp unit. During the past two years, Hutton has sunk a shaft on the property, driven a tunnel to meet the shaft, and has kept the mill operating continuously.

The Brush Creek property is one of the largest in Sierra County, running for three miles along a ledge which yields gold values almost any place it is sampled. A number of extremely rich pockets have been discovered, the most recent find having been in the creek bed where several pieces of quartz, interlaced with the gold, were taken out. The bulk of the Brush Creek ore is said to yield from \$17 to \$25 a ton.

Several years ago the former owners are reported to have extracted about \$3,000,000 in one rich ore shoot. Prosperity proved unfortunate, for, as the story goes, the owners ran into personal difficulties and litigation followed. The Alpha Hardware and Supply Company finally was forced to foreclose because of a bad debt, after having waited for a year to give the litigants time for reconciliation. Alpha Hardware has held the property since taking it over in 1935, with various lessees operating from time to time.

AMADOR MINE BEING OPENED FOR EXPLORATION PROGRAM

THE Amador mine, about four miles south of Grass Valley, California, is being opened up by E. S. Armstrong, 1200 Rives-Strong Building, Los Angeles 15, California, in order that the scheelite values in the ore deposit may be determined. Preliminary examination of ore from the shaft dump shows an average of 15 per cent WO₃, and it is believed that a commercial occurrence of scheelite is situated below the tunnel level.

With this in mind, recent operations have consisted of unwatering and retimbering the 250-foot shaft to a depth of 60 feet, with pumping being continued at the rate of 20,000 gallons of water daily. The shaft was completely caved to the 60-foot level, but it is believed to be in fair condition below the tunnel level, which is at a depth of 65 or 70 feet below the collar of the shaft.

Armstrong is operating the Amador under bond and lease from the owner, D. W. Johnson, 715 Eleventh Street, Sacramento, California, and Etta S. James, Tonopah, Nevada. Frank Roberts is in charge of work for Armstrong.

Mill Heads from the Western States

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



ARIZONA

Fred A. Bennett, Box 93, Tucson, Arizona, is reported to be leasing the **Naragansett** group of claims from the Albert Steinfeld estate, and the **Daylight**, **York**, and **Hilo** claims from the Lewisohn interests. The mining properties are located in the Helvetia district south of Vail, Pima County, Arizona. Bennett has one car of ore ready for shipping and expects to ship one carload every two weeks. The ore carries values in copper, zinc, and some lead. A crew of five men is being employed. Bennett also has mining interests in the Globe and Willcox districts.

Production is being maintained at the **Minerals Farms No. 4** group at the rate of one carload per week. The ore runs about 25 to 34 per cent manganese. Seven men are employed in the operations. The property, seven miles north of Globe, Arizona, was acquired recently by F. A. Bennett, Globe Hotel, Globe, Arizona, at tax sale, and consists of 24 patented mining claims. Bennett has completed installing a compressor and other necessary machinery.

J. A. McKnight, Route 1, Box 365, Prescott, Arizona, is reported to have taken over several mining properties, including the old **Silver Prince** holdings, about 10 miles from Prescott in the Copper Creek area of Yavapai County, Arizona. Work at the site consists principally of cleaning and resampling the old workings and full operation is expected sometime in September. McKnight is said to have associated himself with Brooklyn and New York interests in order to make possible expansion of mine development. The holdings will be worked under the name of **Silver Knight Properties, Inc.**

Bennett and DeVaux, Dominion Hotel, Globe, Arizona, are recovering copper from the **Old Dominion** dump near Globe at the rate of 20 tons daily. Five men are being employed in the operation. Present work consists of removing from two to five feet of surface wash and sub ore from the large mixed ore and waste dump, using a Caterpillar-mounted power shovel. After turning over the ore and mixed dump material by successive slices made by a bulldozer, the ore lumps are hand sorted. The **Old Dominion** property is owned by the Miami Copper Company, Miami, Arizona.

S. J. Landfair, Box 426, Phoenix, Arizona, recently was awarded a loan by the Reconstruction Finance Corporation for the **Centurion** mine. The property is situated near Dragoon in Cochise County, Arizona, and carries values in copper, silver, and tungsten.

According to reports, efforts are being made by **Mammoth-St. Anthony, Ltd.**, to

obtain the services of United States soldiers and workers imported from Mexico to alleviate the labor shortage at the company's **Tiger**, Arizona, operations. The company is employing 340 miners at present, but needs at least 100 more. Last fall, 65 miners, discharged from the army, were sent to the mine, but only 60 per cent of that number still is at work. James L. Fozard, **Tiger**, Arizona, is general manager for **Mammoth-St. Anthony**.

G. R. Mahaffey, Dominion Hotel, Globe, Arizona, is reported to be installing a Sullivan compressor and other mining equipment at the **Mineral Farms No. 2** and **Moonlight** claims and is starting actual manganese mining operations. The property is located about seven miles north of Globe. Mahaffey formerly resided at Dallas, Texas.

The Reconstruction Finance Corporation recently granted a \$30,000 development loan to the **Gold Hill Dredging Corporation**, 311 California Street, San Francisco, California, to be used in the further development of the **Quartzsite tungsten** mine, 11 miles northwest of Quartzsite, Arizona. The **Gold Hill** concern has been carrying on exploratory work at the property for several months, with J. M. Elmer, Quartzsite, Arizona, in charge of operations. Ten men are employed at present. It is expected that production on a small scale will be started at an early date, as it is planned to ship hand-picked ore until a mill is installed. E. B. DeGolia, 904 Robert Dollar Building, San Francisco, is president of **Gold Hill Dredging** which, prior to this time, has carried on gold dredging in Calaveras County, California.



CALIFORNIA

Production of barite ores at the **Spanish** mine is being continued at the rate of 60 tons daily by the Industrial Minerals and Chemical Company, Sixth and Gilman Streets, Berkeley, California. The ore is being shipped to Modesto and Berkeley. The open-pit operation is situated about seven miles from Washington, California, and is owned by the **Bradley Mining Company**, 425 Crocker Building, San Francisco, California. J. D. Cameron of the **Bradley** company is at Washington as superintendent of the Spanish operations and L. N. Benson is superintendent for the **Industrial Minerals and Chemical Company**.

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.

Ore said to run as high as 60 per cent manganese has been discovered at the **Haunganese** mine near Twain in Plumas County, California. The property recently was taken over under lease by George Usher of **Crescent Mills**, California, and it is understood that the present operator is driving a new tunnel and is building an ore chute.

Henry W. Haun of Quincy, California, is engaged in developing two manganese properties north of Twain in Plumas County, California. He recently applied to the U. S. Forest Service for construction of an access road to the mines.

It is announced that **Western Manganese Company** is planning to increase its crew by at least 15 men next fall. The company at present is engaged in operation of mining property at **Patterson**, Stanislaus County, California. All of the **Western Manganese Company's** production has been contracted for by the **General Dry Batteries, Inc.** William C. Crittenden, 519 California Street, San Francisco, California, is president.

The **Victoria Mines Company** is reported to be employing a small crew of men in pumping out the shaft at the **Victoria** copper property in preparation for a complete examination. The **Victoria**, a group of claims in the **Hunter's Valley** mining district near Mariposa, California, recently was taken over under lease with option to purchase by **Victoria Mines**. The mine was operated first in the early 1860's and was known to contain substantial values in copper, gold, silver, and zinc. However, due to excessive handling and ore treatment charges, as well as low market prices, operations proved unprofitable. **Victoria Mines** is a newly organized group, with R. B. Lamb, **Huntley Apartments**, 1207 Miramar Street, Los Angeles, California, V. B. James of San Francisco, and James F. Buckley of **Piedmont**, California, as incorporators.

Dawson Mines, Inc., is starting actual mining operations at its mercury mine near **Avenal Creek** in the southwestern corner of Kings County, California. A camp and housing for a crew of eight men have been established and machinery and equipment, including a tractor and heavy scraper, air compressor, gas engine, air drills, and water tanks and lines, have been provided. The **Dawson** group, which reopened the property last winter, is a newly organized corporation, with Jack Burrell of **Hanford**, California, as president and general superintendent. H. W. Contryman is vice-president and Walter W. Cameron is secretary-treasurer of the company. Both are addressed at **Hanford**, California.

Dr. John W. Ross, **Merrimac Star** Route, Oroville, California, has reported that ore sampling \$26 per ton in gold and running as high as 97 per cent in silica has been developed at the property of the **Gold Meadows Mining and Milling Company, Ltd.**, in the **Berry Creek** district, Butte County, California. Recent examinations have been conducted at the property and it is reported that the **Empire Star Mines Company, Ltd.**, a **Newmont** subsidiary, may take over the claims. Ross is president

and general manager of the Gold Meadows Mining and Milling concern.

The Sundown Mining Company is said to have begun mining operations for the season and to be shipping chrome ore to a government stockpile. Actual mining had been delayed while the company completed construction of a two-mile access road to the property, which is located in the Bucks Lake district near Quincy in Plumas County, California. James Melone of Quincy is interested in the Sundown operations.

The first car of pig iron destined to Oregon was shipped from the Fontana plant of Kaiser Company, Inc., Iron and Steel Division, to the Western Foundry Company, Portland, Oregon. The ore came from the Kaiser Company's Vulcan mine near Kelso, San Bernardino County, California, and was treated at the Fontana plant, which started operations on December 30, 1942. Henry J. Kaiser, Latham Square Building, Oakland, California, is president of the Kaiser Company, Inc.

According to reports, dismantling of machinery and equipment at the old Cardinal mine is under way, following purchase of the materials by L. H. Silberman and George C. Paonessa, 2007 North Main Street, Station A, Los Angeles, California. It is understood that the equipment will be used elsewhere in mining operations. The property is situated on Bishop Creek in Inyo County near Bishop, California, and formerly was operated by the Cardinal Gold Mining Company, 622 South Bixell Street, Los Angeles. The Cardinal mine has been inactive for some time.

FURLOUGHS FOR EX-MINERS

Snow will fly, copper men predict, before the WPB and the Army get enough red tape unwound to release skilled miners from the service to ease their manpower shortage.

A month or so ago the government started a survey with the object of trailing down miners who have been drafted. It's a needle in a haystack task. Copper men suggest that instead of this missing persons detective technique the Army just post a notice on camp bulletin boards offering furloughs to ex-miners who would like to go back to the mines—Wall Street Journal.

Regular mining operations are being continued by Great Western Mines at its Billy quicksilver property and the plant is reported to be treating a large amount of profitable ore. Underground exploration of the southeast end of the main ore body is proceeding. Mining is by power shovels and tractors. The Billy, located near Middletown in Lake County, California, is an extension of the Great Western group, which was first opened up in 1873 by the old Great Western Quicksilver Mining Company. The present Great Western Mines concern started development of the Billy mine in 1942.

Recent tests of gravel at the Walker placer claims of Desert Tungsten, Inc., are reported to have indicated a sufficient scheelite content, together with alluvial

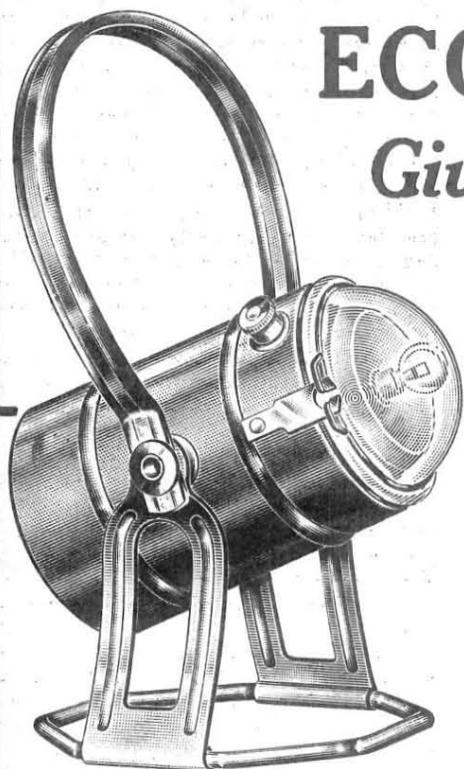
gold, to make continued operations warranted. The Walker property is in Kern County northeast of Randsburg, California. A 50-ton plant and other necessary recovery machinery and equipment were installed by the company for the test run, following several months of preliminary exploration. Operations are under the direction of L. C. Brittain of Randsburg. Desert Tungsten, Inc., which is a newly organized company, is headed by William A. Dewitt, Lyon Building, 106 East Second Street, Reno, Nevada. F. E. Turner of Muskogee, Oklahoma, is vice-president and Brittain is secretary-treasurer.

Work recently was suspended temporarily by the Rand Gold Dredging Associates when the dredge, which has been operating at Randsburg, California, tipped over with five men aboard. The men were unhurt. It is reported that the dredge was ready to begin a new cut in the digging and, when it was being moved for that purpose, water was noticed coming over the right pontoon. Although the buckets were stopped immediately, the dredge capsized. The reason for the accident is undetermined, but it is believed that the right pontoon might have been damaged. The dredge had been shut down recently while three new jigs were installed. M. E. Howard, Box D, Randsburg, is superintendent of operations for Rand Gold Dredging and Newton Cleaveland, 351 California Street, San Francisco, California, is consulting engineer for the concern. Herbert Way is office manager.

The Ancho-Erie Mining Company has completed the new road giving access to

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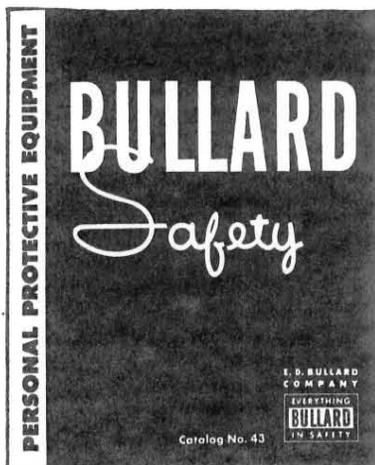
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its mine via Washington, California, and the development program is progressing at the property near Graniteville, Nevada County, California. The operation is being continued by permission of the War Production Board, which granted the company a six-month extension of operations last winter. Fred Anderson of Grass Valley, California, is superintendent and C. A. Helbach, 370 Alta Street, Grass Valley, is president.

A large iron contract has been completed by Beldon Bias, Santa Cruz County Title Company, Santa Cruz, California, who is representing the **Coast Reduction Company** of New York, and the **Bender Corporation** of San Francisco, California. Under the terms of the contract, which has been pending for the past few months, 2,000 or more tons of iron ore will be shipped monthly to San Francisco from the iron property at Cristo, about 10 miles south of Santa Cruz on Monterey Bay. The Bender Corporation plans to use the iron ore in defense production and it is expected that the operation will continue at least for the duration of the war. Orders already have been placed for necessary heavy equipment for the processing and removal of the ore and preliminary operations have been started.

The **Lava Cap Gold Mining Corporation**, which has taken over a large manganese property at Oro Fino in Siskiyou County, California, is making plans to install a 50-ton mill at the site. The deposit is reported to show 75,000 tons on the surface, with ore running 42 per cent manganese. The mining property comprises 1,200 acres and has been leased from the owners, Dr. A. H. Newton of Yreka, California, and John Lewis and Robert Reynolds of Fort Jones, California. The Lava Cap concern is developing the manganese prospect as part of its new strategic metal mining program, following the recent WPB order closing down its gold mine near Grass Valley, California. Otto E. Schiffner of Nevada City, California, is general manager.



Production of zinc-lead ore from the **Monte Carlo** mine in Summit County, Colorado, near the top of Hoosier Pass, has been started by the **Golden Cycle Corporation**. Jess Vetter of Cripple Creek has contracted to do the loading and hauling. He will use six or seven trucks, hauling about 100 tons of ore daily to Divide for shipment by rail to the Golden Cycle mill. A surface proposition, the ore is blasted, then loaded into trucks by power shovel. A. H. Bebee, Box 127, Cripple Creek, is vice-president in charge of mining for the Golden Cycle.

According to reports, scheelite values have been discovered in the property of the **Ward United Mines Company** in Boulder County, Colorado. The company, J. E. Emmons, 1427 Clayton Street, Denver, president and general manager, formerly operated the Utica and Boston gold-silver-

copper mines near Ward in Boulder County, but was ordered by the WPB to suspend operations in April. An appeal to continue work on a limited scale was made by the company. Meanwhile, Emmons made a survey of the company's property and discovered the tungsten ore.

Kramer Mines, Inc., headed by R. W. Kramer, 675 South Downing Street, Denver, Colorado, is continuing the production of fluorspar from its property in Brown Canyon north of Salida in Chaffee County, Colorado. Both open-pit and underground methods are used at the property north of Salida and about one-third of the mill feed comes from the company's Poncha Pass mine eight miles south of Salida. At the main workings, open-cut tonnage is trucked to the mill and underground ore is hand trammed in one-ton cars. Development work is being carried on at depth, a station having been cut 125 feet below the lower tunnel. Drifting from that point is under way and the winze is being continued. Power is purchased through the Rural Electrification Authority from the Public Service Company of Colorado. Water for milling is supplied from wells near the Arkansas River which borders the property on the east. The dry concentrates are transported in five-ton dust-tight trucks to Salida for shipment on the Denver and Rio Grande Western railroad. G. L. Frayser, Salida, is chief metallurgist. The flotation plant now in use was completed in the summer of 1942 and has been in continuous operation since that time.

According to reports, diamond drilling has been started at Leadville, Colorado, by the **Zenda Leadville Mining Company**. Ore of good grade was mined from this area several years ago, smelter settlements showing several lots that assayed from 28 per cent to 65 per cent lead, with 8 to 19 ounces of silver per ton. Other operations are being started also. The company is controlled by the Zenda Gold Mining Company, W. F. Staunton, 517 I. W. Hellman Building, Los Angeles, California, vice-president. The property comprises about 390 acres under lease and in fee, half of its original holdings. In 1938 the company sold the other half to the Resurrection Mining Company of Leadville.

O. Barlow Willmarth of Georgetown, Colorado, is reported to be stoping ore 165 feet above the Grizzly tunnel in his **Great Grizzly Gulch** lead-zinc property. Power equipment is being used. Drifting on ore below the 165 level will be started soon. A new road is under construction and ore is being stockpiled pending completion of the road. The mine is in the West Argentine district of Clear Creek County eight miles southwest of Georgetown.

Operations have been started at the **Sidney** tunnel property in the East Argentine district of Clear Creek County by E. P. Moe of Georgetown. The tunnel has been reopened to the Ontario lode, a distance of 2,400 feet from the portal, and a winze has been unwatered.

The No. 9 and 14 levels of the **Stephens** mine have been reopened and extensive sampling is under way. A truck road is being built to the No. 9 portal. Harry

D. C. McLAREN* discusses

Molybdenum in Modern Metallurgy

MOLYBDENUM—the very word tells us that here is something known to man for over two thousand years. It was first mentioned as early as the fourth century B. C., and the name is derived from the Greek word *molybdaena*, which means lead, for the Ancients confused this metal with galena and graphite. It was not until 1778 that Scheele, the celebrated Swedish chemist, showed that molybdenite (MoS_2), the principal mineral of molybdenum, was a compound of sulphur with a new metal. The metal itself was isolated by Hjelm in 1782, and was called *molybdenum*.

Until 25 years ago molybdenum was little known or utilized, although in 1330 A. D., Masamunè, a Japanese sword maker, used it in the manufacture of sword blades which were far superior to any known at that time.

The demands of steelmakers, coupled with scientific research, have given molybdenite a colossal commercial importance that has been greatly intensified by the war. At the beginning of World War I, the consumption of molybdenum was negligible; by the opening of World War II, the consumption of this vital metal had grown at a spectacular pace to approximately 65 million pounds a year.

The war of 1914-1918 gave impetus to the development of new alloys and better processes and molybdenum was put to work. For the duration of the war it enjoyed a brilliant career. In the first instance, the makers of heavy artillery found that it imparted valuable hardness to machine tools which were used in boring big guns. Germany, blockaded by the Allies from China's supply of tungsten, smuggled molybdenum in from Norway to be used in place of that metal to toughen her special alloy steels for armor plate and gun steel. The Allies also took advantage of the properties imparted to steel by molybdenum. They used it extensively in the crankshafts of the old Liberty engine as well as for armor plate.

THE demand for molybdenum, however, was short lived. When World War I ended, the only market for the metal disappeared and engineers and chemists spent endless hours—during the early years—in profitless research. The automobile industry was the first to see the advantages of molybdenum alloys in automobile fabrication. In 1921 the Ford Motor Company introduced the Wills St. Claire, then considered one of the finest cars ever made. In the construction of that car molybdenum alloys played an important role in crankshafts, etc.

Having thus made its debut in peace time, molybdenum soon gained recognition by steelmakers as a cheap and effective substitute for innumerable alloys of chromium, tungsten, vanadium, and nickel.

The United States, as the producer of over 90 per cent of the world's molybdenum, is vitally concerned with the development of new uses for this metal which the Ancients confused with galena and graphite. While the steel and iron industries are by far the largest consumers, molybdenum is a key ingredient in many phases of metallurgy far removed from the ferrous fields.

Today, molybdenum is indispensable to industry. One of its magic properties may be illustrated: add exactly five pounds of molybdenum to a ton of molten steel and the steel cools into a strong, tough alloy; add a larger amount (up to 150 pounds per ton) to an otherwise properly prepared steel and the product becomes superhard and tough. Cutting tools made from this alloy retain their hardness at cherry-red heat, performing perfectly at high speeds to shave and cut into shape the cannon barrels and other heavy steel weapons as well as all the auxiliary steel shapes required by modern industry. The present tendency is to reduce the tungsten content of these cutting tools to little more than a trace and make up the difference with molybdenum.

But there are other magics of molybdenum:

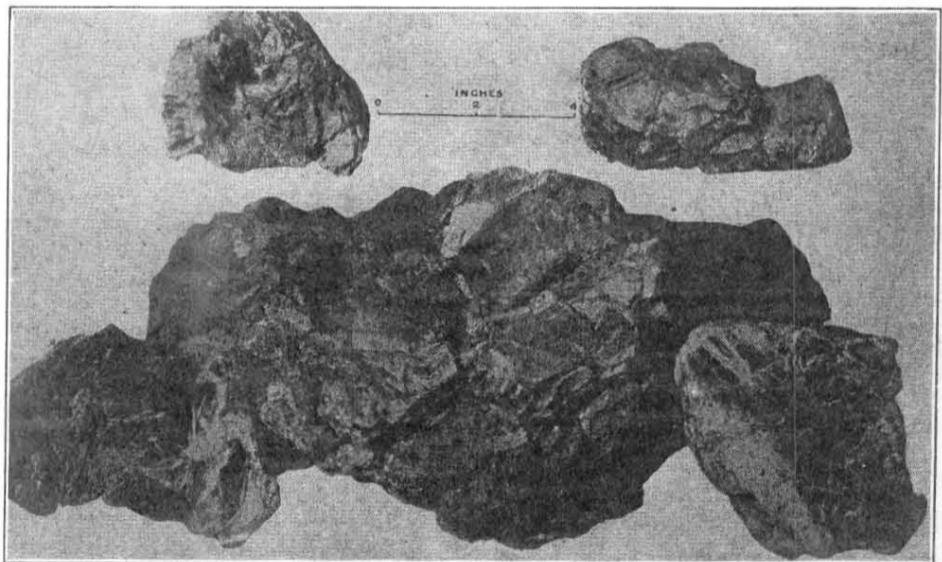
Through the addition of molybdenum steels may be quenched less drastically and still be given an extraordinary hardness without the danger of hardening stresses and cracks. Molybdenum makes possible the use of the highest temperatures to ac-

quire toughness without sacrificing the hardness brought on by quenching and without the penalty of brittleness in cooling. This results in a stronger, tougher steel to withstand the wear and shock imposed on automobile drive-shafts, axles, gears, spindles, etc.

Molybdenum in addition imparts a quality known as creep resistance, the ability to hold its strength and shape at high temperatures. When steel is subjected to a steady load at high temperatures for a long time, it eventually will tend to elongate and may fail. This is particularly true in the cracking stills of the petroleum industry where operating temperatures of 750 to 1,000 degrees F. are maintained. While there are several alloys that are effective in resisting this creep—and for a long time tungsten was thought best—molybdenum has replaced tungsten in many of the pipes, tubes, and valves of the petroleum cracking industry.

The other principal quality which molybdenum imparts is depth hardness, that is, uniform hardness throughout, at the core and on the surface. No other alloying metal imparts the same uniformity of hardness; hence molybdenum finds uses in heavy machinery, forging dies, and heavily loaded shaftings. Molybdenum steels have another favorable characteristic: they can be welded and machined much more easily than any other steels of the same hardness.

Molybdenum is to the metallurgist what salt is to the chef. It intensifies and brings out the characteristics and action of other elements present. It would be most incorrect to regard it as a complete substitute for the other alloying metals, for it cannot replace the stainlessness of chromium, the ductility of nickel, nor the fine grain imparted by vanadium. In fact, it is seldom used alone and does its best work



Molybdenite crystals from which the magic metal molybdenum is obtained.
Photo through courtesy Department of Mines, Ottawa, Canada.

*Metallurgist, Toronto, Canada.

in combination with one or many other alloying metals. The four principal standard steels in which molybdenum plays an important part are carbon-molybdenum, chrome-molybdenum, nickel-molybdenum, and chrome-nickel-molybdenum.

Steel plays a vital and vast role in war and thus molybdenum has become one of the most vital of the strategic metals. But, steel also plays a vital part in peace time industry and we find molybdenum used in "high" steels for such things as permanent magnets, rustless steels, and for high-speed tools. We also find it is used extensively in "low" steels (less than 1 per cent molybdenum) for railway forgings, rails, bolts, agricultural implements and other machine parts.

While steel dominates our picture of molybdenum, we may have the tendency to overlook its other important uses. Today, cast-iron gears, valves, brake drums, cylinder blocks, and mill rolls are being produced which contain a certain proportion of molybdenum to impart greater tensile strength and impact and wear resistance. Molybdenum seems to be more suited to this application than any other alloy because it interferes least with the machining qualities of the finished metal.

THE steel and iron industries do not monopolize molybdenum. Chemistry has found uses for the metal far removed from the ferrous fields. In the manufacture of color lakes, insoluble colors made from organic dyes, molybdenum has been used to replace the more expensive tungsten without sacrifice in quality. It is also used in pigments, the inorganic compounds, the best example of which is molybdenum orange, which gives almost twice the covering of its predecessor, chrome orange, at a lower cost. Molybdenum additions lend opacity to enamels and glass.

As a catalyst molybdenum is now making its debut (particularly in the process by which oil is hydrogenated) to bring about or hasten chemical reactions. Here its action is extremely violent; in fact, so violent that the addition of pacifiers is in most cases necessary. The knowledge of this force has stimulated research to determine whether or not it might be used to accelerate combustion of fuels and increase their efficiency. There are a few other uses worth mentioning: molybdenum stainless steel tips for pens, filaments for electronic tubes, plates in wireless telegraphy, contact for communication systems, winding for electrical resistance furnaces, X-ray apparatus, and bases for brilliant inks and dyes.

Truly, magic molybdenum is only at the threshold of its career in this age of progressive metallurgy.

Let us now peer into the field of mineralogy and see where and how this magic metal occurs. The principal molybdenum mineral is molybdenite—a soft blue-black mineral resembling graphite or freshly cut lead. The mineral is very soft and greasy to the touch—it will rub off on the fingers—and leaves a greenish black streak on paper. Its appearance would never lead you to think of it as a substance to toughen steel, but rather as something to black up faces in a minstrel show. To the mineralogist and chemist, molybdenite is known under the technical name, molybdenum di-

sulphide, and contains from 59 to 95 per cent molybdenum and 40 to 5 per cent sulphur.

Ordinary smelting processes cannot recover molybdenum from its minerals as the melting point is too high (2,600 degrees C.). The ore is mined, crushed, concentrated, mixed with lime, and roasted, ending up as a calcium molybdate, a creamy yellow chalky powder which needs no crushing and enters readily into combination with steel.

In this form it usually is placed in bags, generally of 5 pounds and upwards—or made into briquettes (egg-shaped pellets). It then is tossed, bag and all, into the open-hearth furnace, either with a cold charge or on top of the fuming slag, the calcium remaining with the slag and the pure molybdenum combining with the steel.

ARMY AUTHORIZES RELEASE OF 4,500 MEN FOR MINE WORK

THE army has authorized the release of 4,500 men for work in copper, zinc, and molybdenum mines, according to an announcement by Robert P. Patterson, acting secretary of war. In a formal statement, Patterson declared that efforts to recruit additional miners from civilian sources had failed to obtain the required numbers and that the success of the military programs for 1943-44 "is jeopardized by a growing shortage of these vital metals."

The step was taken at the direction of the Office of War Mobilization and the men will be released only for work "in mines of highest productivity located in areas of critical labor shortage." The commanding general of the Ninth Service Command with headquarters at Fort Douglas, Utah, has been placed in charge of the program for releasing soldiers, and selection of the men will be undertaken among troops within the Ninth Service Command. The program will be limited to units stationed west of the Mississippi River.

Instructions have been issued, Patterson said, to release men who have been in the army less than three months wherever possible, to insure the retention of men who have completed basic training and are being fitted into advanced units. No men scheduled to go overseas in the near future will be released. Soldiers with mining experience or with skills adaptable to mine work will be given an opportunity to leave the army, but no individual will be released against his will.

Those who volunteer will be transferred to the enlisted reserve corps after their qualifications have been established by the U. S. Employment Service and a job is assured them. They will be assembled at Fort Douglas for interviews with selected employers and then will be furnished transportation to the mines. If they fail to continue work in approved mines, or if the manpower situation in the industry changes so that their continued employment is no longer necessary, they will be recalled to active duty.

Major General Kenyon A. Joyce, commanding general of the Ninth Service Command, has announced that release of the men will begin about August 12. The procedure will be substantially as follows:

Commencing about August 12, approximately 4,500 men who have had previous mining experience will be released at the rate of about 1,000 per week for work in copper, molybdenum, and zinc mines in portions of the intermountain states where labor shortages are acute. Post, camp, and station commanders will cooperate with the nearest representatives of the United States Employment Service in providing for interviews with men volunteering for employment in the mines.

After determination of qualifications, soldiers will be transferred from their present station to the mining casual detachment, to be established at the Fort Douglas reception center, where Colonel J. J. Graves is commanding officer. Captain Earl R. Bullock will handle the technical details of the mining detachment. Upon arrival at the reception center and after other preliminary details are completed, representatives of mine management will be notified on an individual basis. They will interview prospective employes and hiring will be accomplished at the reception center.

The commanding general of the Ninth Service Command has been authorized to call upon commanding generals of the Seventh and Eighth Service Commands for qualified personnel, if necessary, according to the announcement.

MANGANESE ASSOCIATION CRITICIZES PRICE SCHEDULE

IN AN analysis of Metals Reserve Company's manganese ore price schedule of May 15, 1943, J. Carson Adkerson, president of the American Manganese Producers Association, strongly criticized the new price schedule, although acknowledging that "it is a step in the right direction."

He declared that the War Production Board and Metals Reserve Company "appear to be more interested in finding ways and means to restrict domestic production of manganese ores by small producers than they are in clearing away the obstacles and encouraging the ores to flow."

Although the price granted in the new schedule is 90 cents per unit for 40 per cent manganese, penalties on silica, alumina, and iron also are included for ores running less than 44 per cent, and since that is the grade of ore ordinarily shipped by small producers, the benefits of the new price are largely offset by the penalties. Prior schedules carried no penalties on silica, alumina, and iron in ores running less than 44 per cent. "If this grade was acceptable to Metals Reserve Company in the past without these penalties, why are these penalties imposed now?" Adkerson asked.

He also criticized the penalty on iron content, since industry ordinarily pays a premium of 5 cents per unit. Otherwise ferromanganese manufacturers must buy iron ore or scrap iron to mix with a low iron-content manganese ore to produce a standard-grade ferromanganese.

Adkerson declared that the increased cost of labor was not taken into consideration in fixing the new ceiling prices on manganese. The association has for some time recommended a price of \$1 per

unit for 40 per cent manganese with a penalty of 1 cent per unit below 40 and down to 35 per cent and a premium of 1 cent per unit above 40 per cent.

"In order that additional new operations may get under way during the summer months," Adkerson concluded, "the May 15, 1943, schedule of Metals Reserve Company should be corrected immediately."

MRC ISSUES NEW CIRCULAR ON SPECIAL COPPER PREMIUMS

A REVISED circular, containing data on the payment of special additional premiums on production of copper from small copper mines in excess of special monthly production quotas, has been released by Metals Reserve Company.

The special additional premium is limited to mines which produced less than 2,000 tons of copper during 1942 and which require increased revenue to obtain maximum production. Each individual case will be considered separately. Properties having zero special quotas will naturally have no deficiencies, but in cases where properties have other than zero special quotas, any deficiency in monthly deliveries below the special quota must be made up in the next succeeding month or months before the producer can receive any premium payment on production in excess of such quota.

When warranted by changed conditions, such as changes in costs, ore reserves, or tonnages and grades of ore, the special additional premium may be increased or decreased at any time, or may be revoked entirely upon 30 days' notice to the producer.

Should the premium price plan for copper, lead, and zinc be terminated prior to July 31, 1945, Metals Reserve will not effect any settlement with producers based on the special additional premium. In the event of such termination, settlement will be made on the basis of terms announced in its statement of March 7, 1942, as follows:

1. Accepting a quantity of the producer's material equal to his "total unfulfilled excess production" settling therefor on the basis of 17 cents per pound; or

2. Settling in cash for such "total unfulfilled excess production" at the rate of 2½ cents per pound, without obligation on the producer to make any deliveries.

Total unfulfilled excess production is determined by multiplying a producer's average monthly excess quota production by the number of months between the effective date of cancellation and July 31, 1945.

The special additional premium for copper is handled by Metals Reserve under the same procedure as heretofore followed in the general premium payment program. Inquiries concerning eligibility for the special additional premium on small copper mine production should be directed to Landon F. Strobel, executive secretary, Quota Committee, Premium Price Plan for Copper, Lead and Zinc, War Production Board, Room 2047, Temporary "R" Building, Washington 25, D. C.

E. GEORGE GREEN* outlines a new

Method for Molybdenum Assays

THE following method for a simple, rapid, and accurate assay for Mo as MoS_2 probably will be of interest to the many new producers of molybdenum and to the inexperienced assayers being called upon to make the molybdenum determinations. This method has been checked for accuracy by over 2,000 test determinations.

It has a decided advantage in speed, economy, and dependability over any previously known method and is practically fool-proof. It does not require the constant attention of the analyst as do the hitherto published procedures. Control-class assays can be turned out in about 45 minutes.

Green Method for Mo Determination Reported as MoS_2

Weigh 0.5 gram Mo concentrates, or 5 grams of heads, tails, or mine ore into a 400 c.c. beaker, preferably the tall Berzelius type. Add 25 c.c. nitric acid, cover with watch glass, and heat gently until red fumes are gone. Add 4 grams potassium chlorate, and evaporate to complete dryness. Wash down sides of beaker with hot water. Add 10 c.c. hydrochloric acid. Heat gently until all soluble matter is dissolved. Dilute with 35 or 40 c.c. water and boil one minute. Cool to room temperature. Add very slowly sufficient sodium peroxide to precipitate the iron and copper. When the assay solution turns red litmus to blue, a sufficiency of sodium peroxide is indicated. Avoid excess, since an excess of sodium peroxide will redissolve copper. Cover and boil one minute. Filter hot through a star-fold S & S No. 597 filter paper. Wash beaker into filter twice with hot water. Wash filter paper five times with hot water. Add two or three drops of phenolphthalein indicator solution to filtrate. Add hydrochloric acid until neutral, then 5 c.c. excess HCl. Add 50 c.c. of a saturated solution of ammonium acetate. Cover and boil three minutes. Titrate hot with lead acetate solution (10.2 grams per liter) using tannic acid solution as an external indicator (0.1 gram to 100 c.c. distilled water). Make this indicator solution fresh daily. The end point is reached when a drop of the assay liquor brought into contact with a drop of the indicator solution on a sheet of waxed paper fails to impart any tinge of yellow. When 0.5 gram of pulp is taken for assay, each c.c. of lead acetate used equals 1 per cent molybdenum sulphide (MoS_2).

On very low-grade samples a standard solution of ammonium molybdate can be added as a buffer just before the final boiling. A much sharper end point is obtained on very low-grade samples by the consequent higher titration and the MoS_2 content of the ore is ascertained by subtracting the lead acetate used to precipitate the added Mo from the total reading.

*Chief Chemist, Bagdad Copper Corporation, Hillside, Arizona.

This step is not necessary for material that can be weighed out in sufficient quantity to titrate over 5 or 6 c.c.

A slight amount of copper left in solution after the sodium peroxide precipitation will not interfere, but a large quantity of copper will tend to obscure the end point. There is no difficulty in obtaining a total precipitation of the iron. If there is no iron or very little iron in the sample, add 5 c.c. of ferrous sulphate solution (25 grams per liter of water). This added iron is a great help toward preventing too violent action when the sodium peroxide is added.

LAVA CAP STRATEGIC METAL DEVELOPMENT PROGRESSES

THE Lava Cap Gold Mining Corporation has been moving in additional machinery and equipment to the Keystone copper mine from the Lava Cap gold property near Grass Valley, California. The machinery includes mining units and equipment to be installed in the milling plant. A crew of 60 men is employed at the Keystone under the direction of John W. Chandler, Nevada City, resident general superintendent.

Main development work so far has been from the 800-foot New Discovery shaft, where large copper reserves have been opened up, and an extensive development program, involving a peak employment of from 100 to 125 men, has been planned by Lava Cap. Included in immediate plans to increase production is the sinking of the shaft to provide two more levels at the Keystone.

Following the War Production Board order closing down Lava Cap gold operations, the company entered into a working agreement with the Keystone Copper Company to take over the local operating management of the Keystone. At present, the Keystone is producing about 300,000 pounds of copper monthly, but it is expected that production will be boosted to nearly 1,000,000 pounds per month.

The Lava Cap Gold Mining Corporation also has taken over a large manganese property at Oro Fino in Siskiyou County, California, and is making plans to erect a 50-ton milling plant there. The deposit is reported to show 75,000 tons on the surface, with ore running 42 per cent manganese. The mining property comprises 1,200 acres and has been leased from the owners, Dr. A. H. Newton of Yreka, California, and John Lewis and Robert Reynolds of Fort Jones, California.

Extensive diamond drilling is planned by Lava Cap at the Scott lead-copper mine about 20 miles from Nevada City, California. Construction of an access road has been started and machinery is being assembled in preparation for reopening the old producer.

Otto E. Schiffner, Nevada City, California, is general manager of operations for the Lava Cap Gold Mining Corporation.

SENATE MINES COMMITTEE SCHEDULES WESTERN HEARINGS

THE subcommittee on mining of the Senate Special Committee to Study the Problems of Small Business has announced its plans for a series of field hearings to be held in the western states during August. These hearings will supplement those conducted in Washington last March, and in Arizona, California, Nevada, Oregon, Utah, and New Mexico, in April. The dates and locations of the new series are as follows:

Helena, Montana—August 2.
Missoula, Montana—August 4.
Spokane, Washington—August 5.
Seattle, Washington—August 7.

Senator James E. Murray, chairman of the Senate small business committee, will preside at the meetings, and will be accompanied by heads of the various departments and bureaus which are concerned with the mining industry. The testimony to be submitted by mine operators will deal with matters of government policy in relation to metal and mineral production.

Scheduled for special discussion are the Scrugham stockpiling bill S. 1160, and the effect of prices on production. The latter will cover OPA ceiling prices; Metals Reserve Company price schedules; premium prices on copper, lead, and zinc; and comments on the quota system. Testimony will be presented as to the results of the government's financing of mines through the Reconstruction Finance Corporation's mine loan program and the Metals Reserve Company's advances on production. Other subjects to be discussed are the survey, examination, and development programs of the Geological Survey and the Bureau of Mines; the effect on production of the WPB priority systems; and the access road program.

As a preliminary to the four meetings mentioned above, Senator James G. Scrugham, chairman of the Senate subcommittee on mines and mining, conducted a hearing at Denver, Colorado, on July 14. About 200 Colorado mining men attended and presented their views on various phases of government activities in the mining field, particularly with reference to bonus payments for strategic metals and RFC loans. Senator Scrugham explained his bill calling for the stockpiling of metals after the war. Also attending the Denver meeting was Congressman J. W. Robinson of Utah, a member of the small business committee of the House.

The principal address of the session was made by Secretary R. S. Palmer of the Colorado Mining Association. He gave an excellent review of the legislation pertaining to Colorado mining progress and offered many valuable suggestions to the Washington committee. He told of the efforts of his association to secure federal support for the Leadville drainage tunnel during WPA unemployment days, and its advocacy of adequate stockpiling of ores, both of which projects, he said, would have been of inestimable value for today's war effort.

Immediately following the Denver meeting, Senator Scrugham left for San Francisco where a similar hearing was scheduled for July 26.

PRESIDENT GIVES GREEN LIGHT TO LEADVILLE DRAINAGE TUNNEL

CONSTRUCTION will start soon on the Leadville drainage tunnel at Leadville, Colorado. The Bureau of Mines appropriation bill which included the project was approved by Congress and has been signed by the president. Although \$1,500,000 was the amount originally asked for, the final appropriation is for \$1,400,000.

The tunnel will be driven by the U. S. Bureau of Mines, with Lewis K. Jacobsen, 212 Security Building, Denver, in local charge as district engineer of the bureau, and with Stuart Zimmerley of Salt Lake City, Utah, in general charge as regional engineer. Plans call for the main tunnel to be driven 13,410 feet, with three laterals totaling 6,050 feet in length. Construction time is estimated at not over 11 months and within 18 to 20 months the area is expected to be in production. The Down Town lateral from the tunnel to the Penrose shaft will be 2,600 feet long; the lateral to the Chrysolite, draining the Fryer Hill area, will be 1,000 feet; and the one from the Pyrenees to the Tucson shaft will be 2,450. Later the Fryer Hill lateral may be extended another 2,100 feet to the Jamie Lee property.

It is expected that the contract will be let to the Stiers Bros. Construction Company of St. Louis, with John Austin, who had the Carlton tunnel job at Cripple Creek, in charge. At present this concern is driving a 1½-mile extension to the Treasury tunnel at Ouray, completion of which is scheduled in about four months.

DEATH BENEFITS—HOME AND ABROAD

As a part of the mining industry, we claim we have the right to be proud of the Utah Copper Company miners. When they were right, dead right, they refused to stop the production of copper. In other words, they thought American boys on the fighting front were more important than the handful of punks from Washington, D. C., who call themselves labor experts. Thousands of men and the company stood together for the right of free choice against a handful of expert knotheads who stand for something we haven't identified as yet. But when the show-down came, the men thought more of our soldiers and kept on digging.

But the fellows who run the railroad between mine and mills, there're only about 100 or 125 of them, seem to be made of different stuff. Maybe they were right and maybe they were wrong. But they wouldn't play while the question was being decided. They took their dollies and went home for a couple of days. During that time the flow of copper dwindled to a trickle and finally stopped altogether. It's over now, but who can say which boys on a fighting front will pay the cost of the prima donnas. How many of those railroad men have sons and brothers on the battlefield? While they struck for certain death benefits, what kind of death were those sons and brothers being handed?

BARKER CORPORATION PLANS OPENING OF NEW PROPERTIES

THE Barker Corporation, which has been operating several manganese properties in the Red Mountain mining district of California, has announced that it intends to open up new manganese prospects in the spring of 1944, and has been doing considerable exploration and development toward that end.

The company reports that during the month of June 1943 it shipped 1,000 tons of manganese ore from its mines and is maintaining production at the rate of 30 tons per day at present. The company's production consists of pyrolusite and rhodochrosite, shipped to the General Dry Batteries, Inc., Patterson, California, and to the Metals Reserve Company, respectively.

Barker Corporation, formerly a gold dredging company operating at Hornitos, Mariposa County, switched to strategic metal mining in January 1942 when it took over the Salinas group. Now it has under lease more than 10,000 acres of land in both Santa Clara and Stanislaus counties, California, west of Patterson and south of Livermore.

Main production is coming from the Dead Oak mine, where all mining is done by the stoping method. Workings at that property include a 125-foot inclined shaft, a 100-foot drift on the 125 level, and a 510-foot tunnel. It is reported that the drift showed a five-foot vein of pyrolusite running as high as 76 per cent MnO₂, but averaging 64 per cent. In the tunnel, which was driven below the drift, the ore body showed an average width of six feet and a change from pyrolusite to rhodochrosite. The company is sinking a winze in the rhodochrosite to block out the ore below.

Since the company's inception, a laboratory for sampling and testing ores has been operated. Last year, the Barker firm made application for federal assistance in road construction, and has been assured that this work will be done immediately. All other phases of the project have been financed by private capital.

Glenn B. Bump, Box 696, Patterson, California, heads the Barker Corporation, while Sumner M. Bump of the same address is vice-president and treasurer. Everett C. Allari, office manager and auditor, does all the laboratory work and sampling. Albert L. Olmstead is superintendent in charge of operations. A crew of 30 men is working at present, but it is expected that this number will be increased as work progresses.

HOUSING PROJECT SLATED FOR BAGDAD CORPORATION

A CALL for bids on the Bagdad Copper Corporation housing project has been issued, following recent approval by the Federal Public Housing Authority of the construction of 35 dwelling units at Bagdad. A special feature of the Bagdad housing program is the fact that prefabricated houses will be used. It is planned to erect 20 two-bedroom and 10 three-bedroom units and five four-room dwellings. It is estimated that the cost will run about \$100,000. Bagdad operates a copper property about 28 miles northwest of Hillside, Arizona.

copper, and zinc. Dr. T. S. Armstrong of McKeesport, Pennsylvania, is the owner of the Bobtail and Ross Finley, Box 1586, Globe, Arizona, has been in charge of the property for several years.



Active copper production is expected to be started in the near future by the Consolidated Gold and Metals Company at its property in Plumas County, California, following a development program which the company has been conducting at the mine. The ore carries values in gold, silver, and silica, besides copper, and the high silica content is said to make the ore suitable for fluxing copper concentrates. The company is headed by Joseph R. Walker, 206 Boston Building, Salt Lake City, Utah, and company offices are in the Newhouse Building, Salt Lake City.

James K. Remsen, Box 347, Grants Pass, Oregon, is reported to be increasing production of chrome ore at the Coggins mine near Dunsuir in Siskiyou County, California. The property has been under development for about a year and it has been reported that recent exploration disclosed substantial deposits in virgin ground. The Coggins is owned by Remsen, who also has several chrome properties in Del Norte County, California, as well as holdings in Oregon.

Four promising tungsten ledges are reported to be exposed at the Tungstar Corporation's Pine Creek mine near Bishop in Inyo County, California. The company is employing about 40 men in its mine and mill operations. P. N. Stevens, 6233 Hollywood Boulevard, Hollywood, California, is general manager for Tungstar Corporation, which is controlled by Reginald Owen and others connected with the film industry. A. H. Heller, 1800 North Hill Avenue, Pasadena, California, is vice-president for the company.

The Combined Metals Reduction Company is making arrangements to increase zinc output at its Miller property on Old Zinc Hill near Panamint Springs, Inyo County, California, and development work is said to be proceeding favorably. The company recently renewed its option on the property for 1943. Guy H. Herbert, Jr., is superintendent of operations. Principal activities of Combined Metals, which is a National Lead Company subsidiary, are in Utah and Nevada, and the company is headed by Fletcher W. Rockwell, New York, City. E. H. Snyder, 218 Felt Building, Salt Lake City, Utah, is vice-president and general manager of the operating concern.

The Basin Montana Tunnel Company is reported to be treating ore from the Washington mine at the Aetna quicksilver property located near Aetna Springs, Napa County, California. A 12-inch hole for ventilation is being drilled at the Aetna mine in preparation for development work in the 4,000-foot No. 9 tunnel. The Aetna quicksilver mine is being operated by Basin

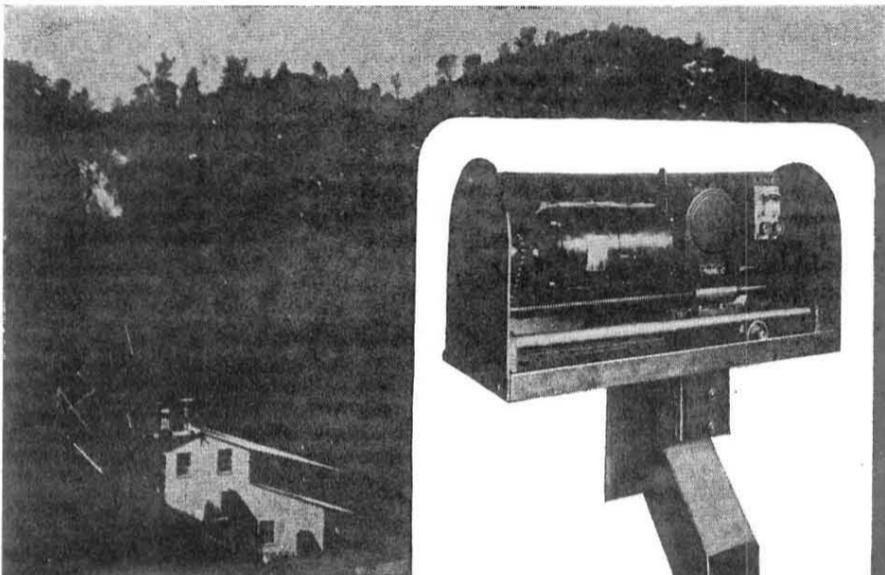
Montana under agreement with the Metal Mining Exploration Company. Allan A. Ryan, 1 East Fifty-seventh Street, New York, New York, is president of the Basin Montana company, and the Metal Mining group is headed by John A. McDonald, 912 Russ Building, San Francisco, California.

William Gassaway and George Taylor of Yreka, California, are engaged in developing a deposit of commercial-grade asbestos. The property is located four miles north of Weed on Eddy Creek in Siskiyou County, California.

The Smelters Corporation is said to be carrying on regular operations at present, following a series of delays because of machinery adjustments. The company is

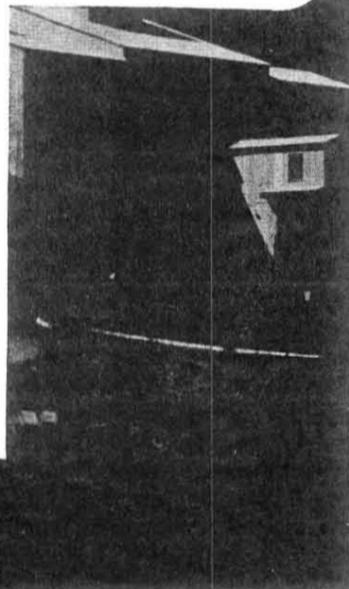
treating tungsten bearing material and is handling about 40 cubic yards per hour. One shift is being employed, but plans are being made to add another shift in the near future. The company's property is in the Stringer mining district near Atolia, San Bernardino County, California. W. B. Thurman of Lodi, California, is president and Grant Morton, also of Lodi, is engineer in charge of operations.

The Pacific-Atlantic Metals Corporation of Los Angeles, California, has reported a strike of high-grade copper ore at the Copper Basin and Zuna groups, located in the Black Mountain mining district about 12 miles northwest of Randsburg, Kern County, California. Both properties were leased to the company by the owner, D.



Efficient Sampling for Better Metallurgy

PRECISION in ore sampling is an important factor in modern mining practice. The Southwestern electrically operated Straight Line Automatic Sampler has been developed to provide consistent sampling accuracy with fool-proof mechanical operation. An outstanding improvement is its method of supporting the ore or pulp cutter on roller bearing wheels running on tracks. Timing of sample interval is regulated by a telechron motor driven time switch. The sampler is just one item in the wide line of mining and milling equipment manufactured by the Southwestern Engineering Company.



WRITE TODAY FOR BULLETIN NO. 402

SOUTHWESTERN ENGINEERING CO.
4800 Santa Fe Avenue
Los Angeles, Calif.

G. Gerbracht, in July of 1942. More than \$10,000 worth of development work has been done on the Copper Basin property so far, with the tunnel, trenches, and shafts having been opened up, and oreshoots exposed at numerous points. The company will ship its product to a Salt Lake City smelter. James Barrett is vice-president of Pacific-Atlantic.

The Gray Eagle Copper Company is said to be increasing its crew of miners at the Gray Eagle mine at Happy Camp, California. The company has its 700-ton mill in full operation and is said to be producing about 700 tons of copper monthly, together with a substantial amount of gold and silver. Robert Hendricks of Happy Camp is manager of operations. The Gray Eagle, after having been idle for 24 years, was reopened early in 1942 by the Newmont Mining Corporation, which holds a controlling interest in the Gray Eagle company.

Lloyd E. Wallbridge, Mt. Bullion, California, is engaged in dewatering the shaft at his Pittsburgh Landing mine near Mt. Bullion, and a new milling plant is under construction. Concentrates will be shipped to the Bay district for treatment. The Pittsburgh Landing has a production record of \$18,000 in gold, but at present is being worked for talc.

COLORADO

The Bonanza mine in the Cold Spring district of Boulder County, Colorado, is being reopened by George Bodnar and his son, Mike Bodnar, of Louisville, Colorado.

Four men are employed by Clarence E. Manion of Blackhawk, Colorado, on a tungsten placer project in the Cold Spring district north of Nederland. Eight jigs and tables are being used in the recovery process. Manion, who formerly operated gold placers near Blackhawk, acquired the tungsten ground near Nederland last winter.

Daily production of 100 tons of fluor-spar from its holdings near Jamestown, Colorado, is reported by the General Chem-



ical Company, 40 Rector Street, New York. An 85-ton carload of concentrates is shipped every other day. The company holds the Alice, Yellow Girl, Chancellor, and Burlington fluor-spar mines and the Valmont mill. Wilbert J. Trepp of Boulder is superintendent and Robert H. Dickson of the New York office is manager of mining.

P. F. Giblin of 1159 Clayton Street, Denver, Colorado, and Byron D. Rodgers and others are reported to have taken a lease and option on the Boston DeWitt property in the Mineral Point district of San Juan County, Colorado. Values are in lead, zinc, and copper. Development work has been started by the new operators.

The Gold Cup mine in Gunnison County near Almont, Colorado, is being operated by Wilfred D. Perry of Marble. The mine, owned by the Reynolds-Morse Corporation, was operated until about 10 years ago by the Republic Metal Mines Corporation.

E. S. Gould of Aspen is operating the Lucky Boy patented claim near Marble in Gunnison County under lease from the Guggenheim interests. Present development work is designed to open a zinc deposit.

The U. S. Vanadium Corporation began operation of its new 250-ton vanadium plant addition at Uravan, Colorado, in the latter part of July. When the new unit is in full operation it will double plant capacity of the company's Uravan operation. U. S. Vanadium also is completing a 100-ton acid leaching plant at Durango to be operated in conjunction with its 75-ton plant there and a 30-ton mill at Grand Junction. The 100-ton plant at Rifle is continuing in full operation, as is the 1,300-ton plant in Bishop, California. Blair Burwell, 30 East Forty-second Street, New York, is manager of all company operations, which also include salt and coal mines in Colorado; the 100-ton plant at Salt Lake City, Utah, for concentrates and middlings; the grinding and sampling plant at Moab, Utah; chrome mines and mill in Montana; and the Liberty mine in Nevada.

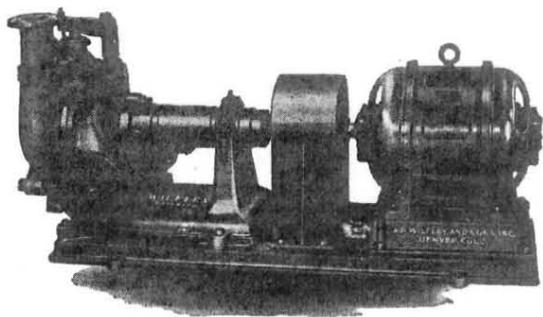
Two shifts, consisting of 15 men, are employed at the Good Friday tungsten property near Boulder, Colorado, by George Jump, 728 Tenth Street, Boulder, and seven men are operating two shifts in the Oregon mine and one shift in the Oregon mill. Jump and associates also work the April Fool tungsten mine in the same area and are reopening the Bull Domingo lead-zinc-silver mine near Silver Cliff in Custer County.

A ton of tungsten concentrate is being shipped weekly by M. H. Gregory, 663 Concord Street, Boulder, Colorado. He is operating the Vasco 2, 5, and 8 claims and the 40-ton mill at Tungsten, under lease from Gold, Silver, and Tungsten, Inc. He also has an option on the Barker 1 claim and is milling the Barker dumps. A crew of 16 men is employed in the mines and five in the mill. Operations are conducted through the Vasco 5 workings.

Fire is reported to have destroyed the engine house and machinery at the Nancy Henderson tungsten property near Nederland, Colorado, which is under lease to Elmer Hetzer of Boulder. Production of ore has been suspended until new machinery can be obtained and installed. As the pump was not damaged, it will be possible to keep the mine free of water.

The 100-foot level of the Rambler mine of the Cowdery group at Nederland, Colorado, is being opened by Kenneth and Thomas M. Walsh, both of Nederland.

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NEW SCHEDULE FOR ZINC-LEAD ORES AT JEAN, NEVADA, DEPOT

A NEW schedule for the purchase of domestic oxidized zinc-lead ores at Jean, Nevada, has been issued by Metals Reserve Company. This program has been established to purchase small tonnages of ores from different producers and is confined to newly mined oxidized zinc-lead ores suitable for treatment in the Waelz process.

Specifications of the zinc-lead ores which will be so purchased are as follows:

Combined zinc-lead content—not less than 17 per cent.

Ratio of lead to zinc—not more than 1:5.

Iron content—not more than 8 per cent.

Sulphide Sulphur—not more than 2 per cent.

CaO plus MgO—not more than 10 per cent if insoluble is more than 25 per cent.

CaO plus MgO—not less than 25 per cent if insoluble is less than 10 per cent.

The minimum weight of any one lot accepted will be 25 tons, delivered at the seller's cost, unloaded at the buyer's stockpile at Jean, Nevada. A lot may consist of several loads delivered by several truck or wagon loads. If the ore is shipped by rail, not less than 14 days' notice must be given to the buyer prior to delivery so that arrangements can be made for unloading cars. The charge for unloading railroad cars and delivery to the stockpile will be 75 cents a ton; or the seller may make his own arrangements for unloading and delivery to stockpile at his expense. Weighing, sampling, and assaying costs will be paid by the Metals Reserve Company.

On the basis of the present ceiling prices for lead and zinc, respectively, premium payments on over-quota production will be computed on the basis of 77 per cent of the total zinc content at 2½ cents a pound and on the basis of 86 per cent of the total lead content at 2½ cents a pound, respectively. No base or premium payment will be made for lead if the lead content is below 0.5 per cent. In the ore purchase schedule accompanying the announcement, the estimated total to be received by the shipper ranged from \$7.53 for a combined zinc-lead ore running 17 per cent to \$43.14 for an ore running 50 per cent. These estimates were based on an ore running one part lead and nine parts zinc.

COLORADO VANADIUM DEPOSITS MAPPED BY GEOLOGICAL SURVEY

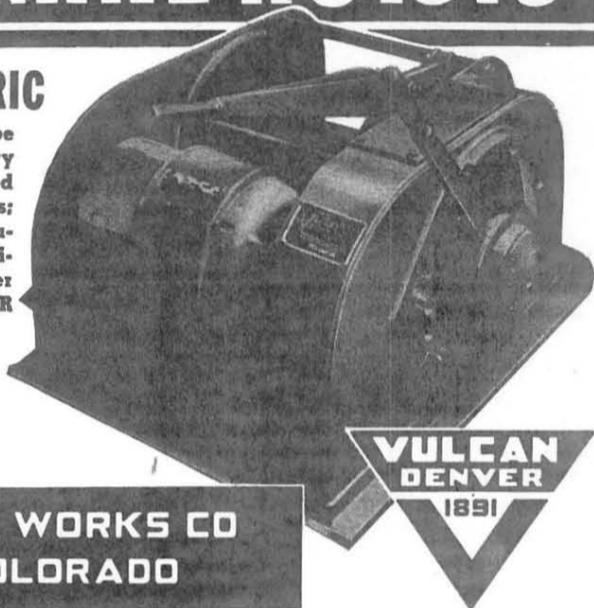
FROM field work conducted in the 1942 season, maps have been made of the vanadium deposit in San Miguel County near Placerville, Colorado. The work was done by R. P. Fischer, J. G. Haff, and J. F. Rominger of the Geological Survey, in cooperation with the State of Colorado and the Colorado Metal Mining Fund. It is a part of the Department of Interior's investigations of strategic resources.

The maps show the distribution of the ore-bearing sandstone in the Placerville district and typical features of the occurrence of ore in four mines.

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So-Called Beryllium Ores of Oregon

DURING the past five or six years innumerable samples of a green, or blueish-green, volcanic tuff, much of it altered to a more or less clay-like consistency, have come to the writer's laboratory from Jackson County, Oregon. This material is said to carry from 6 per cent to 32 per cent of beryllium oxide, but in spite of the fact that a mountain of the ore was said to exist, and in spite of the demand for a single large source of beryllium ore, no production has ever occurred. Since such extravagant claims are common in connection with beryllium, an element which seems to exercise a peculiarly invigorating effect on the human imagination, no special attention was paid to the claims.

Very recently, however, a release to the press and radio stated that the discovery of a large deposit of rich beryllium ore in Oregon would supply all of the country's requirement of beryllium for the next hundred years. Unfortunately, this release seemed to come from a semi-official source in another state, so the report gained wide credence, and there was evidence that a directly deterrent effect was exercised on some who had fair prospects of developing beryl in a reasonable, small way—a method of production which is being earnestly encouraged by those in our government whose province it is to increase our domestic supply of much-needed beryllium ore.

After this last release it seemed advisable, as an unattached scientist deeply interested in beryllium, to visit the Oregon field, and to learn whether the lately heralded discovery was the same as the source of the tuff which had been coming in since the year 1938. The owners granted the privilege of visiting the property and taking samples for analysis, and assured me that the new discovery was the same property. The only "new" part seems to be that this semi-official visitor from a neighboring state, accompanied by one who previously had had mining experience, had been at Grants Pass, Oregon, and had heard for the first time of the deposit from a local source. Without further investigation the story was released to press and radio.

THE difficulties in the exact analysis of beryllium ores are recognized by experienced chemists, and it is interesting to note that none of the high percentages of beryllium oxide in these Oregon samples had been reported by chemists whose training and experience would have specially fitted them for this type of analysis. It was stated locally that the beryllium in this ore would not yield to ordinary methods of analysis, but that a special method had been devised in a local assay office which would show it. In this special method I could discover nothing new.

*Research Chemist, Pasadena, California.

A careful investigation by analytical method of the most approved type has failed to show significant amounts of beryllium in the so-called beryllium ores of Jackson County, Oregon. The investigation is an authoritative answer to the controversy as to the beryllium deposits in that area.

It was the formerly used method of Parsons and Barnes, with not too strict adherence to certain refinements advocated by these authors.

A matter also worthy of note is the opinion locally held that the spectrographic test for beryllium is not effective. This was used to explain the fact that all samples of the Jackson County tuff submitted to experienced spectrographers had failed to show any beryllium content. It was learned in Grants Pass that the basis of this disbelief in the reliability of the spectrographic method was based upon an observation by Bunsen in the early days of the visual spectroscopy. He stated that the line of wave-length 4573, earlier noted by Kirchoff and Thalén as spark line, did not show if the beryllium chloride was excited by the arc instead of by the spark. It is common knowledge that a number of lines of each element show in the spark spectrum and not in the arc spectrum, and vice versa. So this reference was a simple statement that the line 4573 was a spark line and not an arc line. Such a statement could be interpreted as a criticism of the spectrographic detection of beryllium, in which we rely on lines in the ultra-violet such as 2348.61 and the doublet 3130.42—3131.07, only by those who do not differentiate between the early days of the visual spectroscopy and the technique of the modern spectrograph, with photographic reproduction of the lines in the ultra-violet region. However difficult may be the exact determination of the percentage of beryllium in an ore, it is a happy fact that beryllium is one of the easiest elements to identify qualitatively by means of the spectrograph.

In order to approach the question from another angle it was decided to offer as argument not what was not in the Jackson

FEDERAL FUNDS FOR FAST WORK

Our nation's capital has been known the world over for many things, both good and bad, but never for dispatch. But times are changing — and the change is seeping slowly into Washington, D. C. A new appropriation includes funds for the diamond drilling of the Running Wolf iron deposit in Montana by G. F. Goodspeed.

County ore, but rather what was in it. A composite sample of material was taken from five cuts on the property, representing the green and the blueish-green tuff in both its harder and its more clay-like consistencies. This sample included only material which resembled most closely samples which had been submitted to me by an authorized representative of the owners. If analysis could account for 100 per cent of the content of the ore, the question of whether in addition to this there was also from 6 per cent to 32 per cent of beryllium oxide would answer itself, and one would be freed from any prejudice against the spectrographic method.

THE analysis was carried out, with every attention to the accuracy of details, testing of reagents, etc., by the accepted methods for geological rock analysis, as given in Hillebrand and Lundell's "Applied Inorganic Analysis." Aluminum was determined directly in a separate portion, by precipitation as hydrated chloride in ethereal solution, being finally weighed as the oxyquinolate. All weighed precipitates were tested spectrographically for the presence of beryllium, to make certain that any beryllium present was not being counted as another element.

The analysis showed the following percentages:

| | |
|---|--------|
| Silica (SiO ₂) | 61.84 |
| Titanium oxide (TiO ₂) | 0.81 |
| Aluminum oxide (Al ₂ O ₃) .. | 13.52 |
| Ferric oxide (Fe ₂ O ₃)..... | 3.44 |
| Ferrous oxide (FeO) | 1.09 |
| Manganese oxide (MnO) .. | 0.11 |
| Calcium oxide (CaO) | 3.71 |
| Magnesium oxide (MgO).... | 1.23 |
| Strontium oxide (SrO) | 0.12 |
| Potassium oxide (K ₂ O) | 2.23 |
| Sodium oxide (Na ₂ O) | 1.82 |
| Water below 110°C. (H ₂ O—) | 3.65 |
| Water above 110°C. (H ₂ O+) | 6.32 |
| Phosphorus pentoxide (P ₂ O ₅) | 0.14 |
| Chlorine (Cl) | 0.03 |
| Sulphur (S) | 0.01 |
| Vanadium trioxide (V ₂ O ₅) | 0.002 |
| | 100.07 |

Clearly, there is no room for from 6 to 32 per cent of beryllium oxide in this ore.

The question of phenacite, the rich orthosilicate of beryllium, in the deposit had been raised by a statement, earlier made, that some very pure, transparent crystals carried a "high percentage of beryllium." Such a crystal, submitted earlier to me by an authorized representative of the owners, was analyzed for silica by treatment of the powdered sample with sulphuric and hydrofluoric acids, volatilizing the silica as silicon tetrafluoride, igniting and weighing any residue, which would contain any beryllium oxide.

This analysis showed:

Silica (SiO₂)

Manifestly the crystal was pure quartz.

In addition to the purely chemical analyses so far described, the spectrographic test for beryllium was used on six other types of material from the property. In none was beryllium found. It might be explained that routine spectrographic methods, which will show beryllium in percentages as low as a few hundredths of a per cent, were used, and special refinements, which would show a beryllium content of the order of 0.001 per cent, were purposely avoided, since such contents of beryllium are not uncommon in a number of ordinary igneous rocks, and these amounts are entirely outside the range of practical significance.

In summarizing, it may be said that careful investigation by analytical method of the most approved type has failed to show the presence of beryllium in practically significant amounts in the so-called beryllium ores of Jackson County, Oregon.

WORLD'S LARGEST PAN FEEDER BUILT FOR CASTLE DOME MILL

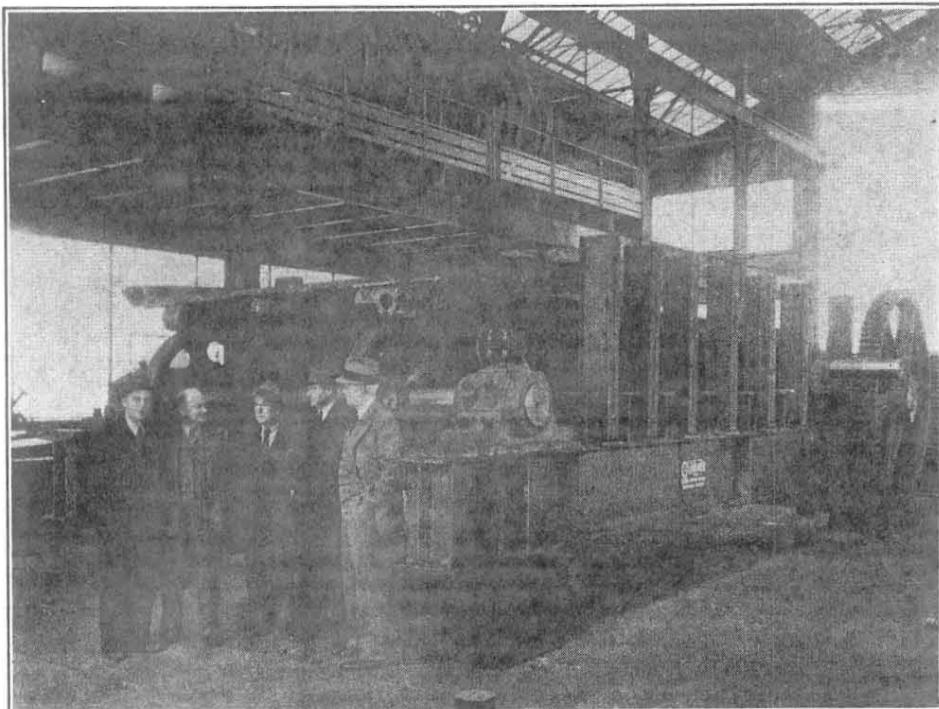
The largest pan feeder ever constructed has been built by the Stephens-Adamson Manufacturing Company for the Castle Dome Copper Company of Miami, Arizona. This feeder is 10 feet 6 inches wide inside the pan flanges by 25 feet from center to center of head and tail shafts. Heretofore, the widest pan ever constructed was eight feet six inches. An eight-foot feeder, of similar construction, feeds the primary crusher at the New Cornelia Branch, Phelps Dodge Corporation, Ajo, Arizona. It has handled 50,000,000 tons with practically no repairs and has given continuous production.

The feeder takes run-of-mine ore from the glory hole, which has a storage capacity of between 3,000 and 4,000 tons to provide flexibility between the mine and the primary crushing plant. The ore is trucked about one-half mile in 25-yard trucks. The height of the opening at the bottom of the glory hole is 12 feet. The width of the feeder was dictated by the need to eliminate arching of the big rock in the bottom of the glory hole.

The pans are 1½ inches thick excluding the spill ribs underneath and with the three chain links at an 18-inch pitch. The pans are supported by three sets of manganese chain and idlers with intermediate shock rails.

The feeder is geared to a 20-horsepower slip-ring motor so that the pan speed may be varied from four to eight feet per minute and feed the rock to the 66-inch by 88-inch primary jaw crusher at the rate of from 350 to 700 tons per hour. A heavy grizzly between the feeder and the crusher by-passes the minus 8-inch rock to the 48-inch wide primary belt conveyors on which the crushed ore from the crusher also is fed and carried across a canyon about 1,500 feet to the secondary crushing plant surge bin of about 2,000 tons' capacity.

This primary feeder is the S-A AMSCO manganese steel patented type feeder. The pans, chain, track rollers, sprockets, and tail idlers—in fact all wearing parts—are cast of manganese steel by the American Manganese Steel Company. The machine



Castle Dome Copper Company and Stephens-Adamson Manufacturing Company officials visit the manufacturing company's Los Angeles plant to look over the primary feeder built for the copper company's mill at Miami, Arizona. The officials from right to left are: F. W. MacLennan, consulting engineer, Castle Dome Copper Company; R. D. Pierce, vice-president and manager, Stephens-Adamson Manufacturing Company at Los Angeles; Harry F. Morrison, manager of American Manganese Steel Company's Los Angeles plant, who made the manganese castings; Edward C. Barkstrom, chief engineer of Stephens-Adamson; and R. A. Ulrich, Los Angeles plant superintendent, who built the feeder.

was assembled in the Los Angeles plant of Stephens-Adamson Manufacturing Company.

The manganese steel pans for S-A AMSCO are cast in one piece from 22 inches to 10 feet 6 inches in width and from ¾-inch to 1½-inches in thickness with integral side flanges which prevent leakage, spillage, and annoying dribble from the carrying run. Pans are carried upon cast manganese chains of patented design which allow chains and pans to bend freely in passing around sprockets, but prevent sagging on carrying run, even under heaviest loads. The chains travel on flanged manganese steel track rollers, thus eliminating all chain wear except for the slight rotation as the links pass around the head sprockets and tail idlers. Lubrication is confined to the bearings in which the head, tail, and roller track shafts rotate. No chain lubrication is necessary. The chain pitch can be made from 4 inches to 18 inches, to suit the service

requirements. Feeders can be built with centers up to 100 feet or more and to operate up inclines of 16 degrees, depending on conditions. The speed can be varied from 3 feet per minute up to 75 feet per minute, or higher, depending upon operating conditions.

This huge feeder is a part of the 10,000-ton milling plant constructed at the Castle Dome property by the W. A. Bechtel Company of San Francisco under contract from Defense Plant Corporation. E. A. Wipple served as resident engineer for DPC. The Castle Dome Copper Company, Inc., is a subsidiary of Miami Copper Company and development and equipment of the mine and mill were made possible by a \$9,000,000 Defense Plant Corporation loan.

ACTUAL REMODELING AWAITS COMPLETION OF BUILDING PLANS

CONSTRUCTION work on the Northwest Electrodevelopment Laboratory at Albany, Oregon, will be started as soon as the architectural designs for the changes are completed. The laboratory will occupy the buildings of the former Lewis and Clark College and remodeling plans are being made.

The laboratory is under the administrative direction of the Western Regional Office at Salt Lake City, Utah, but its technical activities will be directed by a resident staff at the laboratory now being selected. Metallurgical problems pertinent to the West and the utilization of electric power will comprise the principal investigation.

MARCUS DALY—NEW LIBERTY SHIP

Another liberty ship now bears the name of a famous mining man. The Marcus Daly went down the ways of the Permanente shipyards late in July, named in honor of the Montana copper magnate whose properties are being operated by the Anaconda Copper Mining Company. It was a twin launching, the other liberty ship bearing the name of Melville E. Stone, former manager of the Associated Press.



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corresponding period in 1942. E. G. Dentzer, Superior, is general manager of operations for Magma, and Charles F. Ayer, 14 Wall Street, New York, New York, is president.

The Guge mine, or old Castle Rock group, in the Tiger mining district about five miles southeast of the Oro Belle mine, has been acquired by Julius Messer of New York from Ammon Dibert, and M. G. Brassell, 6252 Primrose Avenue, Los Angeles, California. Although the mine has been essentially a gold producer in the past, the Guge claim has a small showing of lead, and two men recently were employed in doing some underhand stoping on this vein. Messer may be reached at Crown King, Arizona.

The Associated Copper Mining Company recently was awarded a Reconstruction Finance Corporation loan for the Mineral Hill mine in the Twin Buttes mining district 16 miles south of Tucson, Arizona. The loan will be used to make the copper property accessible for sampling. The application was made by Ralph W. Bilby, Box 569, Tucson, secretary-treasurer.

An access road to the White House group of claims about seven miles northwest of Oatman, Arizona, is reported to have been completed, thus alleviating transportation difficulties between the property and Highway 66. The White House is under lease to the Basic Refractories, Inc., H. P. Eells, Jr., president, 845 Hanna Building, Cleveland, Ohio. The company has two shifts engaged in diamond drilling, with satisfactory results having been obtained. The White House magnesium group comprises 10 claims and was discovered about six months ago by R. A. Martin, Box 168, Oatman, and H. F. Heather, 236 South Oak Knoll, Pasadena, California.

A \$5,000 loan has been granted to Otis McVaugh, Box 1466, Phoenix, Arizona, by the Reconstruction Finance Corporation. The RFC funds will be used to reopen and rehabilitate the 200-foot shaft to make possible sampling, developing, and mining of siliceous copper ore at the Crump mine in the Sunflower mining district of Maricopa County, Arizona. The property is owned by McVaugh.

Development operations are going ahead at the Gladstone copper mine in the Santa Rita Mountains near Patagonia, Santa Cruz County, Arizona, following the award of an RFC loan to W. W. Todd and C. C. Hoffman, Box 1812, Nogales, Arizona, owners. Workings at the Gladstone comprise a 600-foot crosscut tunnel 130 feet below the surface, a 90-foot winze, and a 100-foot drift. There are reported to be 50 tons of ore on the dumps which will average about 12 per cent copper and another 1,500 tons on the dumps which will run 3 per cent copper. There are three ore bodies in sight, from which it is estimated that 2,000 tons of ore can be mined. Machinery includes a compressor, Studebaker power plant, jackhammer, stoper, air hoist, and drill steel. The Gladstone was located in January of 1890 and was always worked by hand until the present operators took over three years ago.

Another Arizona mine which will be developed by RFC funds is the Mt. Union in the Hassayampa district of Yavapai Coun-

ty, Arizona, and 18 miles south of Prescott. The mine is an old zinc-lead producer and it is planned to drive a tunnel on the vein to make the old workings accessible, as well as to make possible development of new ground. A crew of four men has been employed at the Mt. Union cutting mine timber and doing road work. The property is owned by R. A. Airheart, Box 1623, Prescott. Frank Wilson, Prescott, former owner, is assisting in the development as mine foreman.

Unwatering to the lowest or 105-foot level and rehabilitation of the internal workings at the New Hope mine have been made possible through the recent approval of a \$5,000 RFC loan to James R. Cray, 4136 Washington Boulevard, Chicago, Illinois. The property is located about 18 miles northwest of Tucson, Pima County, Arizona, and is being operated by Cray under a bond and lease. Previous sampling is reported to have indicated an oreshoot 80 feet long and 2 feet wide, assaying 5.5 per cent copper on the 35-foot level. Some stoping has been done to the 75 level. The lowest level is believed to be in ore along its entire length, and, if this is so, it is estimated that some 1,300 tons of copper ore, less that already stoped, are available from the New Hope.



The contract for righting the Rand Gold Dredging Associates dredge at Randsburg, California, has been awarded to the Yuba Manufacturing Company of San Francisco, and the work will be undertaken immediately, according to Herbert Way, office manager for Rand Gold Dredging. The dredge tipped over June 10 and, although the main structure appears to be intact, the secondary structure was badly bent. Several changes are contemplated to facilitate operations after the dredge has been righted and it is hoped that the work can be completed in time to permit resumption of tungsten recovery operations by November 1. The water system supplying the pit has been maintained and every effort will be made to resume work as soon as possible. M. E. Howard, Box D, Randsburg, California, is superintendent of operations and Newton Cleaveland, 351 California Street, San Francisco, is consulting engineer.

The enlarged concentrating plant of U. S. Chromé Mines, Inc., is reported to be operating at full capacity. New equipment recently installed includes classifiers, finer screens, and a magnetic separator, and these installations are stated to have brought the plant capacity up to around 400 tons daily. The company operates the Pilliken mine in the Salmon Falls mining district of Eldorado County, California, and extensive ore reserves are said to be blocked out, including a deposit uncovered last fall north of Nigger Hill. The property is reported to have been extensively drilled and developed and is credit-



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Reno, and associates have taken a lease and option on the **McMillan-Williamson** manganese property located near Lake Almanor, Plumas County, California. Shipment of high-grade ore in sight will be made to the Quincy stockpile, 30 miles distant, and considerable development work is planned to open up indicated bodies of mill-grade ore.

Camp-ground property owned by the Big Pine Women's Club has been purchased by the **United States Tungsten Corporation** as a site for construction of a tungsten mill. Work is scheduled to begin soon on the 50-ton roll mill, which will cost approximately \$20,000. Equipment for the new plant is available and will be shipped from South Pasadena. It is planned to treat ore from the company's tungsten mine five miles west of Big Pine, California, and a crew of 8 to 10 men will be employed. N. J. Elliott, Randsburg, California, represents the company at the project.

The **Newmont Mining Corporation** has reported for the six months ended June 30, 1943, a net profit of \$820,517 before provision for federal income tax, or \$760,517 after all charges. This compares with a net income of \$879,169 after all deductions for the six-month period ended June 30, 1942. Charles F. Ayer, 14 Wall Street, New York, New York, is president.

Martin R. Guenzel, 1220 Maple Avenue, Los Angeles, California, and John A. Tinsley, Sr., have started operations at their property at Goldstone north of Barstow, San Bernardino County, California. A large quantity of high-grade scheelite ore is reported to have been blocked out and regular production is expected to begin immediately.

The **Idaho Maryland Mines Corporation**, which has been employing a crew of about 60 men for the maintenance of its gold property near Grass Valley, California, is reported to have released all but a skeleton crew to keep the pumps running. The company's Idaho Maryland and New Brunswick properties were closed down in October of 1942 as the result of the WPB gold mine closing order. Before the beginning of the war, Idaho Maryland had been employing in excess of 950 men and that number had dwindled to 245 at the time of the order. When the mining operations were stopped, the mines were reported to be in excellent condition underground and the company was allowed to hire sufficient men to maintain the properties for operation after the war. Albert Crase of Grass Valley, California, is general manager of Idaho Maryland.

The **Atolia Tung-Sun Mining Company** is reported to be completing installation of milling machinery near Randsburg, California, and to be planning regular operations by August 1. It is expected that the mill will handle gravel from the company's tungsten claims in the Stringer district near Randsburg, with an average of 300 cubic yards of material being handled every 16 hours. William Bickel, Box 254, Randsburg, is superintendent of operations for the company, which is a co-partnership headed by Ray Schweitzer, general partner, of Los Angeles. A. F. Muter, Box 304, Randsburg, is engineer and manager.

The **Hawk and Hawk No. 1** tungsten claims about six miles west of Randsburg, California, have been taken over again by the owners, M. J. Lovett and associates. The property had been under lease since last February to Al Sigler, who has left Randsburg to assume government construction duties at White Horse, Canada. While operating the Hawk claims, Sigler made two shipments to the Gold Basin mill near Randsburg.

The old **Gold Bluff** mine near Downieville, California, has been purchased by E. L. Best of the Best Tractor Company, San Leandro, California. The property is in Sierra County, California, and adjoins the Oxford mine, which is being operated under bond and lease by the Best interests. It is planned to hold the Gold Bluff mine for operation after the war.

COLORADO

The **Malachite** copper mine in the Bear Creek district southwest of Golden, Colorado, is being reopened by the **Ore Reduction Company** which recently acquired it under lease. The mine was productive about 40 years ago, when the ore was shipped to Swansea, Wales, for treatment. Values are in copper, with some nickel and tin. In recent years it has been more or less idle, although the American Smelting and Refining Company did some exploratory work for a few months early in 1942. The present operators, under the management of Otto B. Von Trotha, vice-president of Ore Reduction Company, plan to drive a new tunnel 150 to 200 feet below the old workings and the adit is expected to open the ore body at a point 650 or 700 feet from the portal. If development work justifies it, a 200-ton flotation plant will be installed. The Ore Reduction Company formerly operated in Summit County, but has been inactive in recent years.

Prospecting for lead and zinc on the **Fred Blackmer** ranch near Empire, Colorado, is being carried on under the auspices of Paul F. Clifford, 1200 Roanoke Building, Minneapolis, Minnesota. A compressor has been installed and a shaft put down. Further work is necessary before any conclusions can be reached.

For the June quarter of 1943, the **Climax Molybdenum Company**, 500 Fifth Avenue, New York 18, New York, reports net profit of \$2,458,684 or 97 cents a share, which compares with \$2,667,779 or \$1.06 a share for the like period of 1942. For the first six months of the current year the company reports net profit of \$5,172,956 or \$2.05 a share, against \$5,494,530 or \$2.18 a share in the first half of last year. Operations are at Climax, Colorado.

Surveys are being made for the proposed 200-ton mill at the Urad mine, operated by the **Molybdenum Corporation of America** under contract with the Defense Plant Corporation. The company has completed the 1,100-foot vertical three-com-

ed with sufficient commercial ore to supply the enlarged plant for some time. A. H. Wild, Russ Building, San Francisco, is president of U. S. Chrome. George H. Beers, Route 1, Box 127, Fair Oaks, California, is general superintendent.

The **Crescent Pacific Mining Company**, E. L. Oliver, president, 807 Newhall Building, San Francisco, California, is reported to have opened a 10-foot face of ore at its chrome property in northern California near Cave Junction, Oregon. The company has been shipping from three to five tons of chrome ore daily with values ranging from \$42 to \$45 per ton. It is understood that production will be stepped up materially as a result of the recent discovery. The chrome claims are being operated under lease from R. I. Hicks of Cave Junction.

Virgil Gray and Tom Eldridge, owners of a chrome mine on Crawford Creek near Cecilville, Siskiyou County, California, are installing a hydraulic pipe line from the mine to storage bins at the roadside for use as an ore chute.

The **Lava Cap Gold Mining Corporation**, Otto E. Schiffner, general manager, Nevada City, California, is reported to have abandoned plans for development of manganese property at Oro Fino in Siskiyou County. The property comprises 1,200 acres and had been acquired under lease from Dr. A. H. Newton of Yreka, and John Lewis and Robert Reynolds of Fort Jones, California. At the **Keystone** copper mine near Copperopolis, California, which the company is operating under agreement with the Keystone Copper Company, 100 men are employed and production has been stepped up to a 3,000,000-pound per year rate. At the **Scott** lead-copper mine near Nevada City, a crew of 10 men is engaged in diamond drilling and in sinking a single-compartment shaft. The company is producing forgings for the United States Navy at its machine shops and 14 mechanics and machinists are employed in that work.

A crew of 10 men is employed in mining and milling operations by the **Volo Mining Company**, F. V. Phillips, president, Placerville, California. The company is operating copper-gold properties in the Pilot Hill district of Eldorado County and a milling plant near Placerville. George B. Phillips is mine superintendent.

Ed Faris, Box 44, Pine Valley, California, and associates are installing a milling plant on a gold claim adjoining the Golden Chariot mine near Banner. A body of free-milling gold ore has been encountered at the bottom of the 185-foot shaft.

Preparations are being made to drive a tunnel for underground mining at the property of the **C and R Mining Company** in Trinity County, California, and a substantial increase in the production of manganese is expected to follow. Since the first of the year, when work was started, mining has been by open-cut methods, using bulldozers and trucks. High-grade manganese ore, averaging 54 per cent, is hauled 12 miles to Alderpoint, Humboldt County, California, for shipment via rail to the government stockpile at Sacramento.

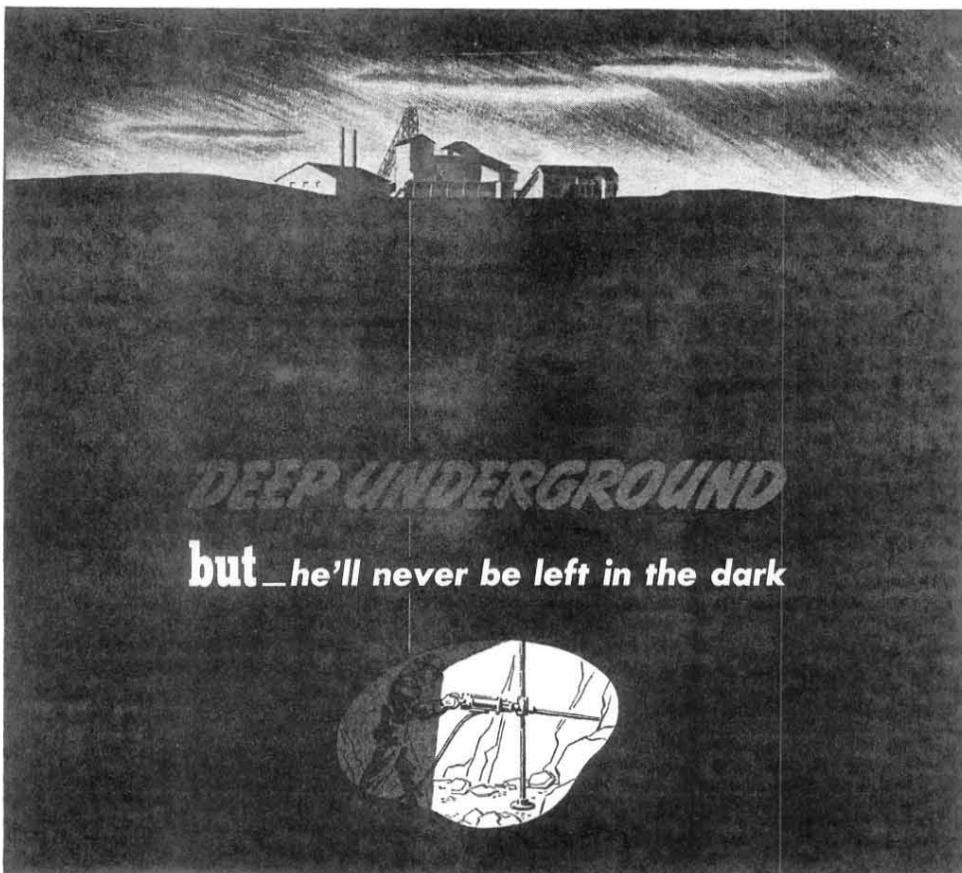
The ground being worked at present totals about 80 acres, but the company also holds under lease a substantially larger acreage of adjoining ground. The C and R Mining Company was organized early this year by a group of San Francisco men, including Anson S. Bilger, Russ Building; G. E. Reed, P. H. McCarthy, Jr., Joseph Marshall, and H. O'Neill. The company is a closed corporation and is financed entirely by private capital.

Two properties in Siskiyou County, the **Sterling King** and **Rock of Ages**, have been leased to San Francisco interests by Roy G. Patch, Hornbrook, California, owner. The holdings are composed of 21 claims.

With improved weather conditions and trails reopened, work is under way at the

Yosemite Tungsten Project near Dorothy Lake in Yosemite National Park, which is being developed by Metals Reserve Company. A camp will be established at Dorothy Lake and about 10 men will be employed. Mining will be by open-cut methods, and the ore will be hand-sorted under ultra-violet lights, transported by pack animals to Kennedy Meadows, and then by truck to the railroad at Sonora, California. John A. Burgess, who will be in charge of the project for Metals Reserve, has established offices in the Bank of America Building, Sonora. He was formerly general manager of the Carson Hill Gold Mining Corporation at Melones, California.

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WLB RULING GIVEN IN KENNECOTT LABOR DISPUTE

THE War Labor Board has ruled that the Chino Mines Division of the Kennecott Copper Corporation, which operates at Hurley and Santa Rita, New Mexico, must discharge employes who remain delinquent in their dues to the International Union of Mine, Mill and Smelter Workers. The ruling is said to involve about 160 of Kennecott's employes in New Mexico.

The War Labor Board's order affirmed a recent directive of the Nonferrous Metals Commission of the WLB in which the Peru Mining Company, Hanover, New Mexico, and the Chino Mines Division were ordered to enforce maintenance of membership clauses included in previous contracts.

Following the original order, Kennecott presented a petition asking for a review of the order and contending that its contract with the C.I.O. did not require union members to remain in good standing as an employment condition. The company believed that it had fulfilled its obligation by notifying employes when they were delinquent.

About 535 employes are covered by the Kennecott contract and the company has estimated that the dismissal of 160 men would reduce copper production 11 per cent. Horace Moses of Hurley is general manager of the Chino division.

CONGRESSIONAL INVESTIGATION OF GOLD CLOSING ORDER PREDICTED

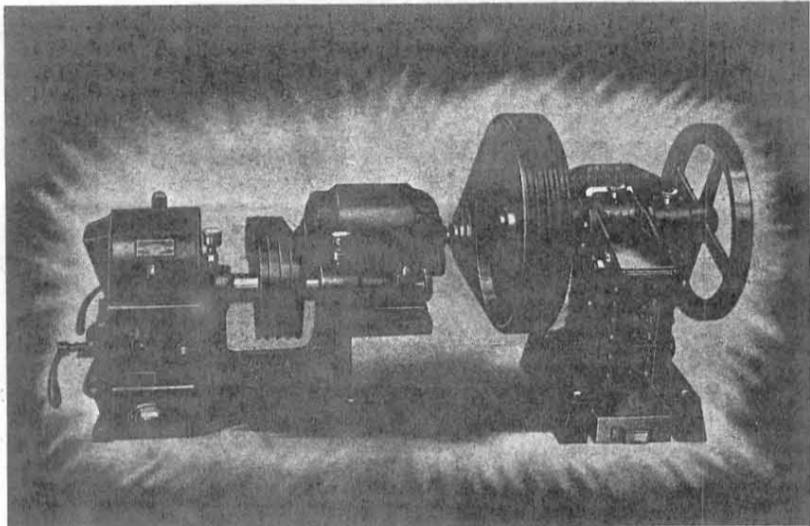
THAT Congress may investigate what is back of the gold mine closing order, L-208, is indicated by Errol MacBoyle, general manager of the Idaho-Maryland Mines Company, Grass Valley, California. MacBoyle has recently returned from several months in Washington and the East. The Idaho-Maryland at one time employed over 1,000 miners and milled over 1,200 tons daily and now it is working only a maintenance crew of 50 elderly men.

It is stated that, out of over 6,000 gold mine employes, less than 500 entered the employment of strategic metal producers, although that transfer was the announced objective of the closing order. It is also stated that gold mine operations other than in the United States have not been curtailed and that this country is furnishing much machinery for expansion of gold mining in foreign countries.

MacBoyle stated that "closing of gold mines disrupted homes of thousands of miners, resulted in collapse of numerous communities dependent upon gold mining, and enabled strong corporations, some controlled by foreign capital, to acquire valuable properties for a fraction of their worth."

MacBoyle declares he knows of several gold mines on the Mother Lode which have been acquired by an international gold mining corporation, and that depreciation of shares in leading companies afforded an unexampled opportunity for powerful groups of capitalists to acquire large holdings. Similar reports are coming from other gold mining areas.

MacBoyle added that there is a general conviction among western congressmen



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that the gold-closing order was engineered for the express purpose of giving international gold interests an opportunity to take over distressed American gold mining companies. He pointed out that the War Production Board recently declined to permit gold-mine owners to produce enough ore to pay maintenance charges.

OUTPUT OF MAGNESITE SHOWED MARKED INCREASE IN 1942

MINE output of domestic crude magnesite in 1942 reached the all-time high of 497,368 short tons in 1942, an increase of 33 per cent over the 1941 production of 374,799 short tons. Increased requirements of basic open-hearth steel furnaces for dead-burned magnesia refractories was the chief factor in the record magnesite output, but demand for caustic-calcined magnesia in plastic magnesia flooring and magnesium metal manufacture also stimulated production. Sales of dead-burned magnesite increased in 1942, exceeding the record 1941 shipments. The bulk of the output was consumed in the construction and repair of basic open-hearth steel furnaces, though some of the purer material was used in brickmaking.

Caustic-calcined magnesite displayed a wide versatility in its adaptability to the war program. The largest use was in oxychloride cements for industrial spark-proof flooring and interior marine decking. Magnesium metal was the next largest direct outlet for caustic-calcined magnesite. Substantial quantities were used as a fertilizer, and the synthetic rubber industry employed high-grade magnesia, derived from sea water, as a catalyst, and lower grades as fillers. Sea-water magnesia also was consumed in making rayon-coagulating solution.

The maximum price of \$22 a short ton for maintenance grade of domestic grain magnesite in bulk, f.o.b. Chewelah, Washington, established by Order No. 75 of the Office of Price Administration on January 28, 1942, continued in effect throughout the year. Owing to shortage of this grade of magnesite, however, the Westvaco Chlorine Products Corporation was permitted by OPA to sell dead-burned grain magnesite from its stocks at Patterson and Permanente, California, at \$32 a ton, f.o.b. Chewelah, Washington, to steel producers on the West Coast, an equivalent of \$40.50 a ton f.o.b. Patterson and Permanente.

Shipments of dead-burned dolomite in 1942, stimulated by requirements of the steel industry, were 15 per cent greater in quantity than the record levels attained in 1941. Dolomite has long been used as a basic refractory for open-hearth maintenance and repair, averaging five to eight times the quantity of magnesite used for refractory purposes. Only recently, however, has dolomite invaded the metal field, competing with and supplementing magnesite and brines as a source of magnesium metal and magnesium compounds.

Expansion in magnesium chloride production for reduction to magnesium metal was the chief feature of the magnesium salines industry in 1942. Two magne-

sium metal plants produced magnesium hydroxide from sea water, converted it to the chloride, and electrolyzed the salt to magnesium metal. One firm recovered magnesium chloride from well brines for use in making metal. Magnesium sulphate and magnesium carbonate also were recovered from well brines, and Epsom salt from a dry lake.

The production of precipitated magnesium carbonate, magnesium chloride, magnesium sulphate, and magnesium hydroxide from magnesite, dolomite, sea-water bitterns, raw sea water, well brines, and dry-lake brines in 1942 was reported to the Bureau of Mines as 362,892 short tons, valued at \$14,238,364, compared with 103,906 tons valued at \$3,288,687 in 1941.

AMENDED REGULATIONS ON USES OF SILVER ARE ISSUED

REVISED regulations have been issued by the War Production Board covering the distribution of silver in the light of curtailed imports and increased stocks made available by the unfreezing of about a billion ounces of Treasury "free" silver. Rising essential industrial demands, greatly curtailed imports, increased usage in domestic coinage, and substantial lend-lease requirements have made necessary additional control over distribution and use. There will be no increase in the amounts permitted to be used for nonessential purposes.

The new regulations are contained in Conservation Order M-199 as Amended, which sets up new categories of uses.

Among the most significant changes in the order are those dealing with the distribution and use of Treasury silver made available by the recently enacted Green bill. The use of Treasury silver is permitted only in the manufacture of engine bearings, official military insignia, brazing alloys, and solders. Authorization to purchase silver from the treasury for these uses will be given by WPB to suppliers or manufacturers upon written application.

The problem of distributing silver for essential uses at two price levels, 71.11 cents for Treasury silver and 45 cents for the limited supply of foreign silver, was difficult to solve. Under the amended order, foreign silver is permitted only in the manufacture of medicines and health supplies, in the photographic industry, in the manufacture of electrical contacts and other products or parts used for electric current-carrying purposes, in the manufacture of miscellaneous other products and on orders carrying a preference rating of AA-5 or higher, with some exceptions. Foreign silver may no longer be used for certain restricted uses defined in the amendment, regardless of preference ratings.

Domestically mined silver is channeled to nonessential industry for restricted uses as in the original order upon the basis of 50 per cent of 1941 or 1942 consumption, whichever is larger. The various uses of silver are outlined in List A (permitted uses of foreign silver), List B (restricted uses of silver), and List C (permitted uses of Treasury silver).

INSPIRATION CONSOLIDATED

MAKES SIX-MONTH REPORT

THE Inspiration Consolidated Copper Company, Inspiration, Arizona, has reported a preliminary income of \$1,074,841 for the six-month period ended June 30, 1943. This amounts to 91 cents per share on the 1,181,967 shares of capital stock outstanding, and compares with a net income of \$860,284 or 73 cents a share for the same period in 1942.

The 1943 report is a preliminary one, based in part upon estimates and does not take into account charges or credits to surplus, which might result from the audit of accounts at the close of the year. It is understood that from present indications the company will not be liable for any 1943 excess profits taxes.

The company also has declared a dividend of 25 cents payable September 27, 1943, to stockholders of record September 10, 1943. A similar amount was paid in previous quarters. The directors of the concern have authorized the call of \$1,000,000 principal amount of its first mortgage convertible 4 per cent bonds due April 1, 1952. The call date has been fixed for October 1, 1943.

T. H. O'Brien of Inspiration is vice-president and general manager of the company and P. D. I. Honeyman, also of Inspiration, is general superintendent.

CALIFORNIA MINERS DISCUSS WAGES AND LABOR PROBLEMS

A WELL-ATTENDED meeting of California mine operators was held in San Francisco, July 26, 1943, and continued for two days, for the purpose of considering questions of wages and manpower confronting the industry. The meeting was called at the request of the Nonferrous Metals Commission of the National War Labor Board in order to secure data on labor turnover, wages, and other pertinent facts which the commission might use at its August meeting to determine wage brackets for the industry.

Between 30 and 35 were present, some of them representing several companies. All properties represented were reported to be suffering from a labor shortage, but most of those present did not believe that increased wages would have much, if any, effect in remedying the situation. Release of miners now serving in the armed forces and in other industries was regarded as the only real answer to the problem.

The average labor turnover in California mines during the past year was reported to have been between 20 and 25 per cent, wages varying from 87½ cents to \$1 an hour, based on a 40-hour week, with time-and-a-half for overtime. Muckers are paid 80 to 90 cents an hour.

Some government officials present suggested that it might be a good idea to strive for a uniform wage, something like 94 cents for miners and 80 cents for muckers. The operators, however, did not seem to agree with this proposal, stating that under such a plan miners would naturally drift to properties most favorably located.

Some of the mines represented at the meeting are unionized, and some are not. Ninety per cent of the quicksilver mines

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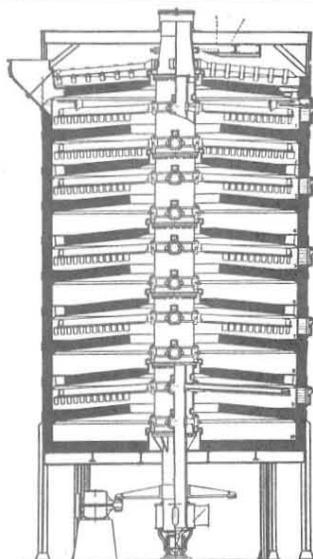
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in the state were represented. Spokesmen for chrome and magnesite properties and some copper mines also were present.

Robert C. McWilliams of the War Labor Board presided. The War Manpower Commission and the Office of Price Administration also were represented and actively interested.

ZINC MARKETING SURVEY BEING MADE IN ARIZONA

A COMPREHENSIVE survey of the zinc ore marketing situation in Arizona is being made by the Arizona Department of Mineral Resources, Phoenix, Arizona, at the request of the Zinc Division of the War Production Board. It is hoped that the state's zinc production can be increased materially if proper marketing facilities are made available.

Numerous state producers of high-grade zinc ores, both oxidized and sulphide, had been unable to find a market for their product and had appealed to the department for assistance. In two instances, Arizona producers of high-grade sulphide ores had been required to dilute their shipments with waste material in order to make their ores acceptable to custom mills, as the high-grade ore disturbed the mills' flotation balance. The main bottleneck in zinc marketing in the state is the fact that the zinc smelters will not take on any additional shippers and material which is sufficiently high for direct smelter treatment is too high for custom milling.

The new Eagle Picher custom mill, which is being erected by the Metals Re-

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Now a little is flown back from China, imports from Latin America (Argentina, Bolivia, Brazil, Chile, Cuba, Mexico, and Peru) have been stepped up, and our own production has been increased. Among western states which have tungsten deposits are Nevada, California, Colorado, Washington, Utah, Montana, Idaho, and Arizona.

serve Company near Sahuarita, Arizona, is expected to provide an outlet for additional milling ores in the southern part of the state. It is reported that the Eagle Picher sampling plant will be ready for operation about the first of September.

The survey also is including a study of the potential zinc and complex-ore production in the Cerbat Range, Mohave County, in order to substantiate the application for rehabilitation and expansion of the custom mill capacity of the Tennessee-Schuykill plant at Chloride. This project, if carried out, will serve many small producers in that area.

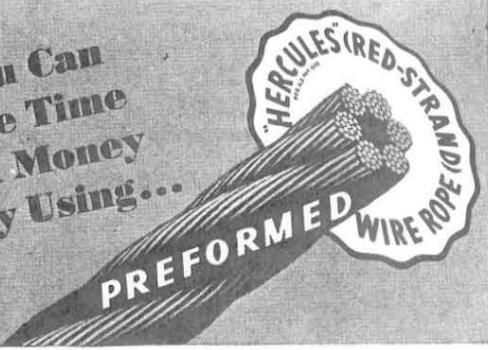
FEDERAL DECISION CLEARS WAY FOR UTAH LEASING OPERATIONS

NO APPEAL will be made by the federal government, it is announced, in the case of the Combined Metals Reduction Company versus the United States. The case was decided in favor of the mining company by District Court Judge Tillman D. Johnson on June 16, 1943, and it clearly gives mine lessees the status of independent contractors and absolves the mining company from paying social security, workmen's compensation, and other federal taxes on men engaged in leasing operations in company ground.

Suit was brought by the Combined Metals Reduction Company for the recovery of \$18,655, paid under protest as old-age security and unemployment compensation taxes. The court ruled that mine lessees are to be considered as independent contractors and not employees of the lessor company.

The case has hung fire for the past two months, pending decision of the federal government to appeal the ruling or abide by it. Despite efforts on the part of the Utah Publicity and Industrial Commission and others interested in western mining, no official federal decision was reached until late in July. Meanwhile, companies hesitated to grant leases and it is estimated that a monthly average of between 200,000 and 300,000 tons of copper, lead, and zinc ores was lost. Approximately 1,500 mine lessees are expected to go back to the mines now that the policy is clear.

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ore, containing in excess of 35 per cent chrome from one producer. This producer has received a loan from Reconstruction Finance Corporation to assist in the development of its mines.

"The manganese and chrome deposits of the State of Montana have greatly added to our country's supply of these materials and Metals Reserve Company, through its purchasing depots at Butte and Philipsburg, has provided a market for the small producers of the area."

This report, given originally in a letter to Senator James E. Murray, was read into the record of proceedings at the Helena, Montana, meeting of the Senate subcommittee on mining.

DOMESTIC PRODUCTION OF CORUNDUM IS REPORTED

THE first domestic production of corundum since the last world war is coming from the South Carolina mines of Withers, Inc. That firm has signed a contract with Metals Reserve Company for an appreciable initial supply. Two separate shafts are being sunk by the Withers company, which expresses the opinion that the South Carolina deposit is the largest known one of high-grade corundum in the country.

As practically all corundum being used by United States industry is being imported from Africa, whatever quantities can be mined here will contribute to the conservation of valuable shipping space. Samples of the South Carolina ore are said to show that the quality closely approximates the best African grades, and tests by the optical trade indicate that the product is acceptable. Corundum is used principally as an abrasive, being the chief constituent in grinding wheels for tools and lenses and as dust for polishing metal and glass surfaces.

Possibilities of other corundum operations have been investigated by WPB and samples of the highest grade crystals have been received recently from Montana. Previously worked deposits in Georgia are being considered as an additional source of supply.

METHODS OF DETERMINING TUNGSTEN GIVEN BY BUREAU

METHODS of analyzing tungsten ores, particularly those from low-grade deposits now being explored because of great wartime demand, are covered in a report issued by the Bureau of Mines at the request of government agencies and private enterprises. According to Dr. R. R. Sayers, director of the bureau, reports of analyses of the tungsten content often have varied widely and have led to confusion.

Dependable methods of analysis applicable to all types of these ores are essential to determine which are worth treating and to regulate the methods of treatment to assure the best recovery. To fill this need, the report describes in detail three methods tried and proved in the Bureau of Mines laboratory at Salt Lake City: the cinchonine method, the tannic acid-antipyrine method, and a third method combining the two.

The combination method was found most suitable for all types of low-grade tungsten ores and is used regularly at the Salt Lake City laboratory. Its advantages are that the time required for analysis is less, the



"Uncle Henry's started a walking pool."

amount of cinchonine needed is reduced, and the final precipitation of tungsten invariably is complete. A procedure for recovering the cinchonine, a reagent not readily available, also is outlined.

A copy of Report of Investigation 3709, "The Determination of Tungsten in Low-Grade Ores" by H. E. Peterson and W. L. Anderson, may be obtained by writing to the Bureau of Mines, Department of the Interior, Washington, D. C.

OPTICAL GRADE CALCITE IS EXAMINED IN OREGON

SAMPLES of the calcite deposits of optical grade from Malheur County, Oregon, were sent to the Miscellaneous Minerals Division of the WPB in Washington, D. C., and, as a result, the state has been asked to give every possible encouragement to the opening of these deposits. The calcite, discovered a few years ago, is located near the Owyhee Reservoir in Malheur County and was examined recently by Dr. Wallace D. Lowry, geologist for the Oregon Department of Geology and Mineral Industries. A report by Lowry has been made available to the public by the Oregon department. It gives the geology, location, and other details of interest to prospectors.

Dr. H. Gordon Taylor, optical calcite specialist of the WPB, stated to Earl Nixon, director of the department, "A prospector taking out 1,000 pounds of the right kind of calcite could retire for life with \$50,000 in the bank. Some of the material may be worth as much as \$100 per pound." Flawlessness and size of the crystals are the characteristics that determine the value.

In the United States only two localities are said to be producing significant amounts of optical calcite at the present. One is in Montana and the other is in southern California. In both areas the crystalline material occurs in relatively hard rocks. At the Malheur County deposit, some of the veins occur in old lake beds from which large crystals could be removed rather easily and without damage to the crystals.

SENATE COMMITTEE CRITICIZES PUBLIC LAND ADMINISTRATION

INVESTIGATIONS by the Senate public lands committee, which have been conducted during the past two years, have been responsible for a number of improvements in the administration of the approximately half-billion acres of public lands in the United States, according to Senator Pat McCarran of Nevada, chairman of the committee.

The committee's report, made just before Congress recessed, has been printed, and its 85 pages summarize observations of the committee following hearings which began in Ely, Nevada, two years ago and which are continuing this summer. A much more cooperative spirit is evident on the part of officials of the grazing and forest services, the chairman declared, and the work of the committee also is believed to have restrained, to some extent, the limits of national parks and monuments.

The general land office estimates that there were 412,200,000 acres of public lands in the 13 western states as of June 30, 1943, and that figure does not include lands acquired by purchase, gift, or condemnation. Land purchases in recent years have involved millions of dollars of public money and millions of acres taken from private ownership, the report states, and the repercussions upon the tax structure in the western states is of increasing concern to the taxpayers of that region.

The land tax base in many of these states always has been narrow because of the high percentage of public lands, ranging in the 11 western states (excluding North and South Dakota) from 36 per cent in Colorado, Montana, and Washington, to 86 per cent in Nevada. As a result of continued federal land purchases, the support of local governmental functions is becoming increasingly difficult.

The report condemns particularly the practice of government agencies in requesting withdrawals of areas much larger than the needs would justify. "The result is a maze of excessive withdrawals and unnecessary and undesirable restrictions upon the use and development of the public land resources." The park service was reported to be one of the principal offenders in this respect.

Some criticism also was made of locations for reclamation areas, of wild-life refuges, and of tracts taken over by the army and navy for gunnery target practice. Acknowledging that the job of laying out the practice areas "had to be done hurriedly by a large number of officers and employes, most of whom were new to undertakings of this kind," the committee urged that inconvenience to the lives and businesses of miners, stockmen, and business men be minimized as much as possible.

Far too often, the report said, residents of land taken for military needs have been kept in suspense and uncertainty by the indecision of government officials, and the delays in determining damages and in making compensation have worked unnecessary and serious hardships upon the people, needlessly interfering with their production efforts.

"This committee," the report concludes, "is of the opinion that the time must come—in fact is overdue—when there should be a careful and rigorous examination and overhauling of existing public land withdrawals, particularly those of long standing and of doubtful continued usefulness. After a careful study, the withdrawals no longer needed or justified should be rescinded. Others should be reduced in area to proper and needful limits. Thereafter, all proposed withdrawals should be subjected to close scrutiny to see that they are kept within reasonable and proper bounds."

FURLOUGHED SOLDIER-MINERS ASSIGNED TO WESTERN MINES

FORTY western metal mines producing copper, zinc, and molybdenum have been authorized to receive allotments of miners from the 4,500 men being released by the army. Representatives of the mines eligible to receive the additional manpower met recently with army officials at Fort Douglas, Utah, to discuss details of the hiring plan. The first contingent of the furloughed miners already is at work and the entire group is expected to be assigned by the first of September.

The men released were chosen for their underground experience in nonferrous metal mining operations, their ability to do the work, and their desire to become miners. No men were released against their will. The mines participating in the program are as follows:

Arizona: Bagdad Copper Corporation, Castle Dome Copper Company, Inspiration Consolidated Copper Company, Kennecott Copper Corporation, Magma Copper Company, Miami Copper Company, and Ajo, Bisbee, Jerome, and Morenci branches of Phelps Dodge Corporation.

California: Gray Eagle Copper Company, U. S. Vanadium Corporation.

Colorado: Climax Molybdenum Company, New Jersey Zinc Company, Resurrection Mining Company, and Wilfley Leasing Company.

Idaho: Daylight Leasing Company, Federal Mining and Smelting Company, South Mountain Mining Company, Sullivan Mining Company, Tamarack and Custer Consolidated Mining Company, and Monitor Mines Company.

Montana: Anaconda Copper Mining Company.

THE GOOD OLD DAYS

We ran across an item in the *Mo-have Miner*, Kingman, Arizona, dated *Thirty Years Ago*, August 9, 1913, which made us wonder what that forgotten man, the gold miner, thought when he read the item. We could guess. The item stated:

"George B. Ayers came in from Goldroad yesterday with a bar of bullion weighing \$15,000. These nice little bars keep up interest in that section of the country, especially when reinforced with the big monthly bars of the Tom Reed, which usually weigh \$100,000."

Those certainly were the good old days!

Nevada: Combined Metals Reduction Company, Consolidated Coppermines Corporation, Kennecott Copper Corporation, Mountain City Copper Company, and Prince Consolidated Mines Company.

New Mexico: American Smelting and Refining Company, Banner Mining Company, Kennecott Copper Corporation, New Jersey Zinc Company, and Peru Mining Company.

Utah: American Smelting and Refining Company, U. S. Smelting Refining and Mining Company, and Utah Copper Company.

Washington: American Zinc, Lead and Smelting Company, Howe Sound Company, Metaline Mining and Leasing Company, and Pend d'Orielle Mines and Metals Company.

STEADY PROGRESS REPORTED BY B AND B MINES IN NEVADA

THE B and B Mercury mines in Fisher Lake Valley near Dyer, Nevada, are in steady production, present output coming from an open-cut below the mill. The ground is stripped by bulldozer and a power shovel loads the material into trucks to be hauled to the ore bin above the mill.

A tunnel, being driven 250 feet, will give 100 feet of additional backs below the glory hole. Some of the samples run as high as 16 pounds of mercury to the ton, according to J. M. Kerns of Dyer, superintendent.

A new laboratory is nearing completion and will be equipped with the latest assay facilities. Frank R. Wicks of 318 West Ninth Street, Los Angeles, California, is supervising engineer. A crew of 26 men is employed.

CARLOTA COPPER COMPANY IS GIVEN PAY HIKE DIRECTIVE

INCREASED wages for employes of the Carlota Copper Company, Miami, Arizona, have been ordered in a recent directive of the Nonferrous Metals Commission of the War Labor Board. Under the new order, miners will receive \$7.00 per shift and muckers, \$6.36 per shift. This compares with the old scale of \$6.50 for miners and \$5.50 for muckers. Blacksmith-laborers, who formerly received \$5.50, now will be given \$6.75.

The ruling, which was the first affecting a small Arizona mining concern, resulted from a dispute between the company and the International Union of Mine, Mill and Smelter Workers. Also included in the terms of the new schedule is a vacation plan providing one week's vacation with six days' pay for workers with one year of service with the company.

MONTANA QUARTZ CRYSTAL DEPOSITS NOT COMMERCIAL

SO FAR, the search for commercial quartz crystals in Montana by the U. S. Bureau of Mines is reported to have been unsuccessful. However, the work is being continued. Crystals were found in the Hamilton area and near Paradise, but no commercial values have been proved to date. E. W. Newman of Helena is in general charge as district engineer of the Bureau of Mines.

Mill Heads from the Western States

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



Although some preliminary work is being done, the **Little Minook Mining Company** does not plan to operate until after the war. Operations will be carried on with shovel, bulldozer, and pumping unit, but at present no mining is being done. The property is on Minook Creek south of Rampart, Alaska. Otto Arndt and Alvin Martin, both of Rampart, are the operators.

About 20 men are employed by the **Red Devil Mining Company** at its quicksilver property on the Kuskokwim River at Sleetmute, Alaska. Mellick and Halverson of Sleetmute are the operators of the company which treats cinnabar in its own retort on the ground.



Three shifts are working daily at the **Silver Hill** mine located near Chloride, Arizona. Operations at the Silver Hill are being conducted by the Liberty Hill Gold Mines, Ltd., under a \$20,000 Reconstruction Finance Corporation loan. The workings consist principally of a 500-foot cross-cut, a 100-foot drift on the vein, and a 35-foot winze. The vein is said to be seven feet wide in the winze and values are in zinc and lead. Liberty Hill is operating the property under lease and option from the owner, William S. Segar, Box 243, Chloride, Arizona. R. P. M. Davis, 2356 Hollywood Drive, Hollywood, California, is president of Liberty Hill Gold Mines, Ltd.

The access road to the **Rosemont Lease** in the Helvetia mining district of Pima County, Arizona, is reported to be nearing completion. Previously all ore from the property has been hauled over a rough, very steep road for a distance of about four miles to the top of the mountain, and then trucked to Vail, Arizona, the shipping point, a total distance of 22 miles. The new road will give an outlet to the railroad at Sahuarita, Arizona, and will cut off about seven miles from the total haulage distance. The Rosemont is a part of the Adolph Lewisohn estate, six claims of which are under lease to James S. Maffeo, Box 39, Bisbee, Arizona, and Alma Greenhalgh, Bisbee. An average of 300 tons of 6 per cent copper ore is being produced at the Rosemont monthly. Newton Wolcott, Box 1999, Warren, Arizona, is in charge of operations.

H. W. Patterson, 1828 Liberty Bank Building, Buffalo, New York, recently took a lease on the **Kaibab** mine at Jacob Lake

in the Kaibab Forest in Coconino County, Arizona. The siliceous copper property is owned by the United States Metals Corporation, Philip J. Barnes, president, 510 West Sixth Street, Los Angeles, California, and formerly was operated by James F. Collins, Box 901, Long Beach, California. Patterson has been engaged in mining operations in Utah for some time.

Dye and Bathrick, Box 1069, Kingman, Arizona, are reported to be filing an application with the Reconstruction Finance Corporation, for a \$4,500 accessibility loan for the **Copper World** mine. The Copper World is located about 16 miles east of Yucca in the Cedar Valley mining district of Mohave County, Arizona, and is owned by the Phelps Dodge Corporation. Values are in zinc and copper. It is understood that the Dye and Bathrick lease on the **Copper Giant** mine has been cancelled and the owner, Henry Galbraith of Hackberry, Arizona, intends to start operating the property on his own account immediately. The Copper Giant is situated three miles east of Hackberry in Mohave County, Arizona.

Mica production is expected to be started as soon as the access road now being built to the **Mica Giant** property has been completed. The mine is in Cottonwood Canyon of the Wallapai Mountains and is said to be one of the few deposits in the United States which has been examined by government engineers and considered sufficiently high-grade to be used for industrial purposes. The Mica Giant was located about 15 years ago by T. Mac Smith, Box 147, Kingman, Arizona, the present owner. Associated with Smith in the venture is E. P. Crawford, lessee, Box 461, Saratoga, California.

A. W. Tacke, Box 906, Mesa, Arizona, is engaged in operation of a beryllium property located about eight miles northwest of Superior in the Superstition mining district of Arizona.

Pete Vukoye, Box 482, Kingman, Arizona, is carrying on development operations at the **Antler** copper-zinc mine by means of a recently granted \$5,000 Reconstruction Finance Corporation loan. A crew of five men is being employed at the property, which is located in the Cedar Valley mining district about 12 miles east of Yucca, Mohave County, Arizona. The ore is copper sulphide on the hanging wall and zinc sulphide on the footwall, and it is expected that the copper will be shipped to the Clarkdale smelter and the zinc to Midvale, Utah. Vukoye has a lease and option on the Antler from the owner, 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.

Phelps Dodge Corporation. The Antler claims were located and first worked about 64 years ago, but have been idle for about 40 years.

The **Tombstone Development Company** is said to be closing down operations near Tombstone in Cochise County, Arizona, and Brooks Davis, general superintendent, is reported to be leaving the property in the near future. The Tombstone Development concern is headed by Jack B. Martin, Box 2110, Tucson, Arizona.

The **Mary Jo** group of 12 mining claims near Charleston, southwest of Tombstone, Arizona, has been purchased by B. X. Dawson of Tombstone from Leo O., George A., and Gloria M. Woolery, Bisbee, Arizona. The new owners are engaged in installing machinery necessary to treat the lead-zinc ore.

The **Westerner** gold-lead mine in the Hassayampa mining district of Yavapai County, Arizona, is reported to be closed down at present. The property, owned by Mrs. Roma Tomlinson, Office of Post Engineer, Yuma Army Air Field, Yuma, Arizona, formerly had been worked under a Reconstruction Finance Corporation loan.

Gilbert Mock of Mayer, Arizona, has a crew of two men working at the **Binghampton** group of claims engaged in preparing the property for production. At present there is a car of oxidized copper ore in the bin. Waste material is being used to fill in a large stope in order to bring the floor of the stope to the tunnel level. When this work is completed it is planned to build an ore bin and chute on the stope floor, and begin mining on the 15 feet of copper ore showing in the present stope back. The Binghampton is situated about six miles east of Mayer in the Agua Fria mining district of Yavapai County, Arizona. Mark Gemmill, Crown King, Arizona, and W. J. Henson and V. A. Hale, Box 110, Prescott, Arizona, who recently purchased the property at tax sale, were granted an RFC loan for the property last spring.



Further development work will be undertaken soon at the **Tungstar Corporation's** Pine Creek mine near Bishop, Inyo County, California, with the recent addition of new equipment and machinery. A new 500-cubic foot compressor has been installed and a new separator added to the mill, substantially increasing milling capacity of the 75-ton unit. Housing facilities are being improved to accommodate more than the 40 men now being employed at the mine and mill. The 2½-mile tram from the mine to the mill has been completed and put into operation. P. N. Stevens, 6233 Hollywood Boulevard, Hollywood, California, is general manager for the Tungstar Corporation, which is controlled by Reginald Owen and others connected with the film industry. A. H. Heller, 1800 North Hill Avenue, Pasadena, California, is vice-president.

Announcement has been made of the sale of the J. and M. tungsten mill south

of Bishop, California, to the **California Tungsten Mining and Milling Company**, which operates at Round Valley, California. It is understood that the operators will employ six men at the milling plant, with two trucks being used to haul ore. The California Tungsten concern is operating a similar mill unit at Round Valley, where tungsten tailings are being treated. Arrangements are being made by the company to treat ore from the Big Shot mine, owned by Owen, Stevens and associates. California Tungsten also plans to reopen the Chipmunk mines, located seven miles southwest of Bishop in Chipmunk Canyon. A new three-mile access road will be built to the property in the near future in order that ore may be trucked to the J. and M. plant. When operations are started it is expected that a crew of six men will be employed at the Chipmunk. N. C. Aldo, 1523 North McCadden Place, Hollywood, California, is in charge of operations for California Tungsten.

The Sheridan Brothers are continuing regular production at the **Garnet Dike** mine situated about 13 miles from the Kings River State Fish Hatchery, Fresno, California. During the past year and half an average of 200 short-ton units of tungsten trioxide has been shipped from the Garnet Dike monthly. The Garnet Dike operations have been severely slowed down because of the property's remote location, which has made it necessary to pack in machinery and supplies over a 7½-mile pack trail. Heavier pieces of machinery were dismantled for delivery and then re-assembled on the site. Machinery includes a Pacific jaw crusher, Straub table, a 25-ton Wheeler ball mill, and a small Caterpillar tractor and bulldozer. Hall Sheridan is mine foreman, M. Sheridan, business manager and supply chief, and Bill Sheridan, mill foreman. All may be addressed in care of the Kings River State Fish Hatchery, Fresno, California. Andrew Thickstun, Box 1472, Fresno, is consulting engineer for the project.

The Socrates mine, located in the Pine Flat district about 12 miles from Middletown, California, is reported to be yielding a substantial amount of mercury, with promising ore deposits having been discovered recently in previously unworked ground. The property is being operated by the **Contact Quicksilver Mining Company**, 1924 Broadway, Oakland, California. Jack Coleman, Healdsburg, California, is mine superintendent, and P. C. Swarts, Box 307, Healdsburg, is master mechanic. Bert C. Austin, 816 Mills Building, San Francisco, California, is consulting engineer. Contact is controlled by Thurman and Wright, 960 Russ Building, San Francisco, formerly gold dredging operators.

Arrangements have been completed by the United States Bureau of Mines for core drilling operations at the historic **Oat Hill** mine near Middletown in Napa County, California. The mine is a quicksilver producer and is operated by H. W. Gould and R. A. Hanan. B. A. Gould is general manager. All may be addressed at Mills Building, San Francisco. M. J. O'Boyle, Middletown, is superintendent.

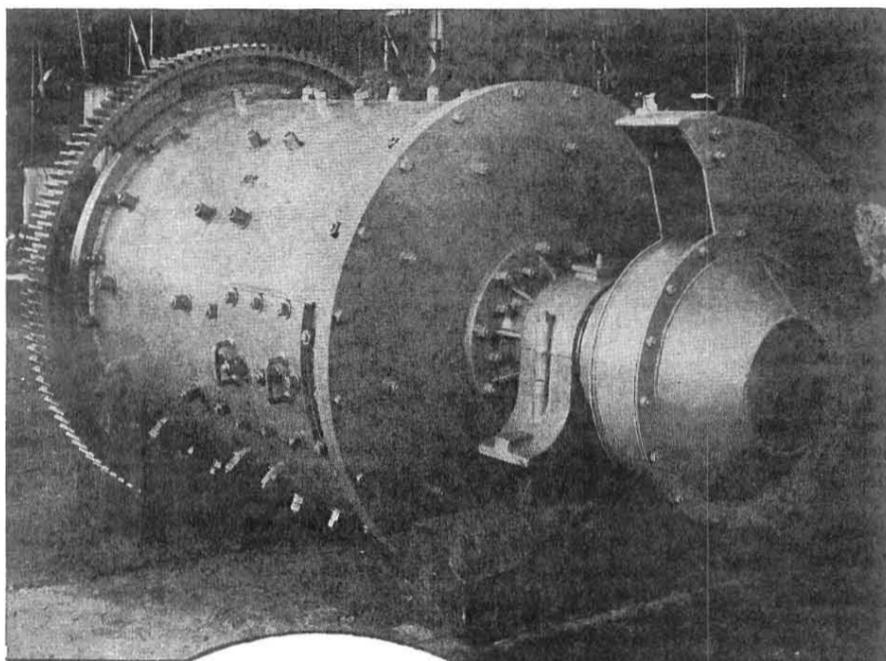
The **Folsom Gold, Silver and Copper Mining Company** is planning to start operations in the near future at the Bull Run mine, situated near Spring Valley, San Diego County, California. Values are in copper. The concern was organized recently with a capitalization of \$190,000. Incorporators are Nathaniel Beal, W. T. Mudgett, A. H. Powers, and Andrew R. Young.

It is expected that regular shipments of chrome ore will be started from the **Cyclone Gap** property in Del Norte County, California, as soon as road conditions will permit. James K. Remsen, Box 347, Grants Pass, Oregon, is operating the Cyclone Gap. He also is interested in the Snowy Ridge mine, a chrome property on

the Oregon-California boundary, southwest of Ashland, Oregon.

Recent operations at the **High Plateau** mine situated in Del Norte County, California, have included driving a lower adit to cut ore deposits. Shipments of ore for smelting are made by way of Grants Pass, Oregon. Eugene Brown of O'Brien, Oregon, is the operator.

Horace G. Miller, 4800 Santa Fe Avenue, Los Angeles, California, and George W. Clemson, 311 Spring Street, Los Angeles, who have been operating the **Eagle Shawmut** mine, Tuolumne County, California, recently leased the old **Penn** copper property. Present operations consist of dewatering preparatory to mining blocked out copper-zinc ore, which will be trucked



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to the Eagle Shawmut mill for treatment. The Penn property is located about two miles from Campo Seco in Calaveras County, California, and at one time was operated by the Penn Chemical Company. In the former operation of the mine, only copper values were recovered, the zinc being slagged off in the smelter. Fairly large bodies of high-grade zinc ore were left in the mine and so the new operators have much ore already blocked out for them. It is planned to produce about 150 tons daily of copper-zinc ore. All work is under the direction of D. C. Peacock, general superintendent, Chinese Camp, California, who has recently returned from Burnet, Texas. He is manager of the Southwestern Graphite Company at Burnet, which also is held by the Miller-Clemson interests.

Regular mining operations are being carried on by the Calaveras Crystal Company at the Calaveras crystal mine in the Chili Gulch area of Calaveras County, California. It is reported that a crystal weighing 87 pounds was found at the property. The mine recently was leased by the owner, R. P. M. Davis, 2356 Hollywood Drive, Hollywood, California, to the company and machinery was installed and development work started. Work is under the direction of Mervin Porteous, Mokelumne Hill, California.

Continued operation of its two dredges was made possible for the Natomas Company with the extension of its original permit by the War Production Board. The gold company formerly had been allowed to continue work until August 8, 1943, and the new authorization is for an indefinite period. A 60-day termination clause has been included in the new permit, under which the WPB may order operations closed down in the event that it is considered an interference with essential war industries. At the time of the original gold closing order by the WPB, Natomas had five dredges in full-time operation in the Folsom district of California. Thomas McCormack, Forum Building, Sacramento, California, is president of the Natomas Company.

The Sundown Mining Company is reported to be making regular shipments of chrome ore from its property in the Bucks Lake district near Quincy in Plumas County, California. A two-mile access road to the deposits recently was completed and

HOW ABOUT MORE OF THIS SPIRIT?

Twenty-six Navajo Indians have sent a note of appreciation to General Dwight D. Eisenhower for recent praise of their work in producing vanadium, an essential war mineral. Thumbprints of each Navajo employed by the Vanadium Corporation of America on the Northern Navajo Indian Reservation in Arizona were attached to the message, which read:

"To the General Commander-in-Chief of the Allied Forces in Africa, General Eisenhower: We, the undersigned Navajo Indians of Monument Valley on the Northern Navajo Indian Reservation, have heard the telegram from our general.

"We thank you for what you have said to us in your telegram. We will work harder to get more vanadium from under the rocks on our reservation so the guns, airplanes, and munitions you need over there where you are fighting will be strong.

"We are proud that our reservation has the vanadium to help win this war."

Among the names signed to the message were Sheep White, Adaskie Bondoni, Shini Cly Began, Hosteen Sour Court, Hite Chee, Limle John, Kelete Black, Discherise Asan, and Luke Yozzie.

machinery for stripping and mining operations was installed. A substantial tonnage of commercial-grade chromite has been uncovered. James Melone of Quincy is interested in the Sundown operations.

Steady chrome production is reported by Ellis R. Patterson and E. V. Spivey, both of Quincy, California, who are operating the Patterson-Spivey mine on Rock Creek in Plumas County, California. It is expected that production will be increased materially in the near future. Ore is mined by bulldozers and tractors and trucked to the government stockpile at Quincy.

The Mount Jackson quicksilver mine, comprising 30 acres near Guerneville, Sonoma County, California, has been sold for \$100,000 to the Sonoma Quicksilver Mines, Inc. The transaction was made in compliance with provisions of the lease, where-

by the property would be sold to the Sonoma concern when the sum of \$100,000 had been paid in royalties to the owning company, the Mount Jackson Quicksilver Mining Company. Sonoma Quicksilver employs 75 men and produces an average of 130 to 140 tons of ore daily. H. D. Tudor, 58 Sutter Street, San Francisco, California, is president of the Sonoma company and S. F. Wickham is superintendent in charge of operations at the property.

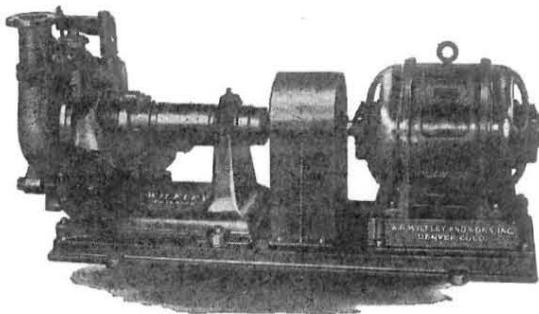
The Belmont Osborn Gold Mining Company recently took a lease on the Hastings quicksilver mine, located on the east side of Sulphur Springs Mountain in the Sulphur Springs mining district of Solano County, California. The lease covers the mineral rights on 400 acres. The Hastings was discovered and first operated during the 1870's and was a producer of high-grade quicksilver ore during the first World War. The Belmont Osborn concern is headed by W. A. Hayes, 1900 Leimert Boulevard, Oakland, California.

From 10 to 15 tons of dynamite exploded recently at the Mountain Copper Company's Hornet mine near Redding, California, causing little serious damage. The explosion occurred at noon July 29 and the mill was in operation on the morning of July 31. The damage was estimated to have totaled about \$12,000. Fire of undetermined origin, which broke out in a brick powder magazine about 350 yards from the mine entrance, set off the explosion. Charles Elrod and R. K. McCullum, who were in the assay room, were the only ones injured. The damage to the mill building and its machinery was almost negligible and the mine was quite undamaged. William F. Kett, 216 Pine Street, San Francisco, California, is general manager of operations for Mountain Copper.

COLORADO

According to reports, production from the Pelican level of the Dives-Pelican property at Silver Plume, Colorado, has been started by the Wilson Lead and Zinc Company. While the Golden Cycle Corporation now controls most of the Dives-Pelican property, a portion of it is leased to the

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INTRODUCTION* to

Basic Magnesium—the Plant and the Job

MMAGNESIUM is the miracle metal of World War II. It is the metal which enables men to fly higher and faster, to shoot with more deadly accuracy, and to sow flame and desolation on the enemy. It is the metal which brought about the miracle of Basic Magnesium, Incorporated.

Not so many years ago, men considered magnesium only as a base for various medicines. Later they learned that its ores made excellent brick and tile. Still later this versatile element was used in flares and flashlight powders. Today, magnesium, the eighth most abundant metal of the earth, is one of the essential elements for modern warfare.

This silvery, lustrous element is only three-fifths the weight of aluminum but its alloys are as strong as aluminum; it can withstand much greater vibration than aluminum without failing. Consequently, it is most valuable in construction of airplanes, landing gears, and even artillery wheels, in addition to fire bombs and tracer bullets. Transportation on land, sea, and in the air has been revolutionized.

Although nearly a century and a half have passed since magnesium was identified as one of the metallic elements of the earth's crust, comparatively little was either known or done with the metal until recent years. At the conclusion of World War I, the moderate impetus which had been given to production of magnesium practically stopped except in Germany. The Germans continued experimentation with the metal and by 1937 had become the world's leading producer of magnesium. In the United States, the metal was being produced, but chiefly as a by-product from certain brine wells in Michigan and other parts of the country.

In 1937, the Germans constructed an electrolytic plant for the British near Manchester, England, and the British began to be a significant factor in magnesium production. Thus, the British were supplied by their arch enemies with the technique which may prove to be a deciding factor in World War II.

Before the war began it was known that Nevada had immense deposits of magnesium ores—enough, it was estimated, to supply the world for 150 years. Nevada also had other advantages—the power and water necessary to wrest the magnesium from its ores, made available through the harnessing of the Colorado River by Boulder Dam.

THE project was conceived early in 1941 through the efforts of Basic Refractories Company, Cleveland, Ohio. That company owned a number of mining claims

*Abstracted from "Welcome to BMI" published by Basic Magnesium, Inc., Las Vegas, Nevada.

So that its employes may have a better understanding of the magnitude and importance of their plant and their jobs, Basic Magnesium, Inc., has published a booklet giving the basic facts about the project, the largest magnesium plant in the world.

in Gabbs Valley, near Luning, Nevada, approximately 330 miles north of the Basic Magnesium Townsite. Deposits were large bodies of dolomite, magnesite, and brucite, and their use prior to the war was almost entirely for the manufacture of refractory brick and tile.

It was decided that the electrolytic method of reducing anhydrous magnesium chloride offered the best possibilities, and to that end an agreement was made with a British company, Magnesium Elektron, Limited, near Manchester, England, for the American rights to the process being used by the British.

In October 1942, Basic Refractories sold its interest to the Anaconda Copper Mining Company which thus made its first entry into the light metal field. Under the direction of Anaconda the tempo of construction was speeded and production was

geared to the war effort. Improvements were made, the organization was streamlined, and metal unit after unit was brought rapidly into production.

On May 14, 1943, the last brick was laid in the tenth and final unit, completing a job begun in September 1941.

Estimated production at Basic Magnesium is 112 million pounds, or 56,000 tons of magnesium a year. Significance of this figure is seen when one considers that this company alone will produce nearly twice the amount of magnesium produced in the entire world in 1939 when the Germans first marched their legions into Poland. In that year, world production of magnesium was 68,355,000 pounds.

BMI, as the plant is known throughout the country, probably is one of the most phenomenal projects the world has seen; where bricks are laid with a precision which would make a watchmaker proud; where pipe lines are made of silver, lead, zinc, rubber, copper, glass; where enough water and electricity are used each day to supply a city of 1,800,000 inhabitants; where the magnitude of the great desert basin itself dwarfs the plant into relative insignificance; where practically every craftsman has been required to call back into use every trick and skill he ever knew.

To supply the plant with water, a pipe line was constructed from Lake Mead, 15 miles away, lifting the water approximately 800 feet from the surface of the lake to two 15,000,000-gallon reservoirs above and behind the plant. The pump house was constructed on the end of a cantilever bridge which required more than 1,000 tons of steel. The bridge anchor arm is more than 150 feet long and the cantilever arm is 230 feet long. In order to provide for the high and low water levels of the lake, pump shafts were extended down 190 feet from the end of the bridge. Approximately 700,000 pounds of dynamite were used in excavating the trench for the water line. The trench averages 10 feet in depth, 6 feet in width at the top, and 5 feet in width at the bottom.

Two transmission lines bring 200,000 kilowatts of electric power from Boulder Dam to the plant. The electric equipment cost \$12,500,000, and required more than 6,000,000 pounds of copper—including the largest bus-bar installations in the world.

Anderson's Camp, where most of the construction crew and the single men operating the plant are housed in dormitories and tents, has a mess hall capable of seating 2,500 men at one time. Construction engineers all over the world considered Boulder Dam one of the most amazing feats of engineering and construction in the world, and yet at its peak the Boulder Dam job employed only 5,250 men as compared with 13,618 men on the Basic job at its peak.



During the construction period every conceivable type of shelter was used, from shacks built of cardboard and scrap lumber, to modern stone houses electrically heated and cooled. Tents, trailers, barracks, dotted the desert reaches near the plant. And when the construction and operating crews swung into Las Vegas on payday nights, mingling with the soldiers from McCarran Field Gunnery School and from the Boulder Dam guard details, there was a sight the like of which may never again be seen. The average weekly payroll in this western desert camp regularly exceeds a half-million dollars.

Basic Magnesium is not what is known as a brick, sheet metal, electrical, or plumbing "job," yet it has established a world record in all four of those categories.

THE process used by BMI is not new, except for certain American refinements. Essentially the process involves changing magnesium oxide into magnesium chloride and then breaking down the magnesium chloride compound into metallic magnesium and chlorine gas.

Magnesite is magnesium carbonate and the process as applied by BMI consists of mining the ore at Gabbs Valley, heating it to drive off the carbon dioxide gas, mixing the resultant magnesium oxide with peat moss, coal dust, common salt, potassium chloride and calcium chloride. The various dry components are cemented with a solution of magnesium chloride to form pellets or briquettes.

After the pellets or briquettes have been through kilns in which they are burned to produce porosity, they are placed in an electric furnace called a chlorinator. In this chlorinator they are melted and simultaneously subjected to a stream of pure chlorine gas which changes the magnesium oxide to magnesium chloride.

The molten magnesium chloride is tapped off at the bottom of the chlorinator and transferred into electrolytic cells where a direct current is passed through the mixture breaking down the magnesium chloride compound into metallic magnesium and pure chlorine gas. The cells are so designed that the metallic magnesium can be ladled off and sent to a refinery where remaining impurities are removed. Under ordinary operating conditions the magnesium ladled from the surface of the melt is more than 98 per cent pure. In the refinery it is purified to 99.7 per cent or better.

The refinery also is the place where different alloys are made. At the present time Basic Magnesium production is going chiefly into the type of magnesium metal used in incendiary bombs.

Chlorine gas, which is sent through the chlorinators, is manufactured in a separate plant, construction of which was supervised by the Hooker Electro-Chemical Company of Niagara Falls. Electrolysis of common salt brine is the method used. The by-product of this operation is caustic soda chemically known as sodium hydroxide which in itself is one of the most widely used chemicals in the world.

Caustic soda and sulphuric acid are cornerstones of the chemical industry and go



into a wide variety of products ranging from explosives to glass. The chlorine plant at BMI is one of the three largest in the world, producing 225 tons of chlorine each day and 250 tons of caustic soda. Approximately 370 tons of salt a day are dissolved into 300,000 gallons of brine to make the raw material from which the chlorine and the caustic soda result.

When December 7, 1941, plunged the United States into war, an immediate and acute shortage of copper resulted. As far as industry is concerned, copper's chief use is conducting electric energy. To the munitions people, copper is vital in the production of shell casings, etc. It is understandable that overnight the allocation of copper became one of our major war problems. There was not enough copper to equip Basic Magnesium. However, silver is even a better conductor of electricity than copper, and at West Point, New York, the United States Treasury was holding 47,000 tons of silver, much of it mined in Nevada, against which no coinage certificate had been issued.

Nearly half of this silver was loaned to Basic Magnesium, Inc., by the treasury. It was fashioned into bus bars and other electrical fittings and shipped to the Nevada desert. It arrived in great silvery planks, some of them 12 feet long—\$23,313,300 worth—under the direction of armed treasury guards.

BASIC Townsite, where company employes are housed, is the third largest city in Nevada. It is a complete modern village of 1,000 homes, a market, grade and high school, recreation center, and hospital. In the townsite are 44 double apartments for either single women or couples. Twenty-six additional apartments are located at Boulder City. North of the Townsite on the opposite side of the Las Vegas-Boulder City highway, are 500 additional homes and 212 dormitory rooms. These rooms will house 320 single men. In addition accommodations are available for single men at Anderson's camp. Northeast of Anderson's Camp is a modern village for Negro workers. This village includes 324 family units and 175 dormitory rooms for single men.

It is difficult to convey the actual size of this desert giant. If it were set down

in a great metropolitan center, it would cover an area approximately 8 blocks wide and 17 blocks long. Each of the 10 metal plants is equivalent in length to a city block reaching to the height of seven floors. Storage silos stand nearly 100 feet above the floor of the desert and exhaust stacks from the refineries extend 125 feet above the ground. The entire plant, housing and service facilities cover an area of more than four square miles. It staggers the imagination that all this work was begun on September 15, 1941, and that 11½ months later the first silvery magnesium was poured.

Prior to September 15, 1941, the present plantsite was a gently sloping prairie dotted with sagebrush and cactus, and inhabited only by rattlesnakes, tarantulas, and vinagaroons. A thousand modern dwellings were built in the space of weeks. Lawns were seeded and landscaped, and a modern sewerage system and disposal plant, worthy of the finest city, was installed.

Before the war, the British plant near Manchester, England, was said to be one of the largest in the world. Basic Magnesium is two and one-half times larger. It consists of 10 metal reduction plants, two chlorine plants, three refineries, and a large preparation plant where the raw materials are made into pellets. Total cost of the plant is approximately \$140,000,000.

ABANDONED MINES CHECKED FOR SCRAP IRON AND STEEL

AN examination of all abandoned mines in the western states is being urged in an effort to obtain additional scrap iron and steel. The drive in California is being conducted by the Special Projects Section of the War Production Board under the direction of Don S. Neher.

California has been called upon to turn in one-third more scrap metal in the second half of 1943 than it did during the first six-month period. The quota for the last half of 1943 has been set at 517,000 tons. Southern California's scrap metal supply has been depleted greatly by the Kaiser Company's new steel plant at Fontana, and it is estimated that the plant will need approximately 25,000 tons of scrap monthly.

ANACONDA MAKES PRELIMINARY REPORT ON FIRST SIX MONTHS

IN a preliminary report for the six months ended June 30, 1943, the Anaconda Copper Mining Company, 25 Broadway, New York, and subsidiaries show a net income of \$17,854,952, or \$2.06 a common share, compared with \$18,204,033, or \$2.10 a share in the corresponding 1942 period. Total income for the six months was \$40,456,310, compared with \$55,546,070 in the same period last year.

The company has set aside for U. S. and foreign income and profits taxes, including \$2,200,000 for excess profits levies, the sum of \$16,250,000 after a \$220,000 provision for postwar refund of excess profits taxes. This compares with a provision of \$27,057,552 for all U. S. and foreign income taxes and excess profits taxes for the first half of 1942.

D. C. McLAREN* relates history of

Tungsten—a Vital Metal for Victory

ONLY a few years ago if you had asked the man on the street, "What is tungsten?", he probably would have replied, "That's the stuff they use in light bulbs." And he would have been right. What the average citizen didn't know was that the research which was going on quietly behind the scenes was destined to change the face of industry and usher in the era of mass production.

Tungsten was a key metal in this industrial revolution. Tungsten today is a most vitally needed metal in the mass production of war matériel.

Reference books on science define tungsten as "A metal discovered about 1781. It has a greyish white color and considerable luster. It is brittle, nearly as hard as steel. When heated to redness in the open it takes fire and is converted into acid." The military authorities, however, would give a different definition. They think of it in terms of a vitally needed war material; one-half pound of tungsten, costing a few cents, can put out of commission an enemy tank costing possibly \$100,000; for anti-tank ammunition uses a tungsten-alloy core, of which 50 tons will serve for 200,000 rounds. This is a measure of tungsten's importance to the war effort; but it is merely one of the many uses for this strategic metal.

IT IS not only on the battle front that tungsten is a vital war need. Without it on the home front, mass production of war matériel would be greatly hampered, if not jeopardized, for machine tools made of tungsten high-speed steel retain their cutting edges even though used at such a speed that their points become red hot. Tungsten machine tools not only speed up production amazingly, they cut costs sharply.

Tungsten finds extensive employment in peace time in such products as valves and valve seats for internal combustion engines, drawing dies, hacksaw blades, files, cold chisels, razor and knife blades, surgical knives, etc. The addition of 0.3 per cent tungsten prolongs the life of railway rails by 5 years. It also has been used to line cannon, as its resistance to erosion and heat increases the life and permits more rapid firing.

Tungsten in steel imparts creep resistance—the ability to hold its strength and shape at elevated temperatures—as well as toughness and impact strength. In addition, tungsten has the peculiar property of increasing the magnetic power of the steel with which it is alloyed. A horseshoe magnet of ordinary steel, weighing two pounds, for instance, is generally considered of very good quality if it bears seven times its own weight, but a similar magnet made of tungsten steel is able to bear nearly 20 times its own weight.

*Metallurgist, Toronto, Canada

The discovery of new sources of tungsten, or the expansion of existing sources, may be considered as a major contribution to our war effort, so important is the metal in the mass production of war matériel. Tungsten, even in minute quantities, imparts many useful characteristics to steel and to non-ferrous alloys.

The use of tungsten, however, is not confined to steel making. There are several alloys of this metal with the non-ferrous metals. The most widely known is one of the stellite alloys and consists of 75 per cent cobalt, 20 per cent chromium, and 5 per cent tungsten. This alloy

is one of the chief competitors of high-speed tool steel. An alloy of tungsten with aluminum is both light and strong, and is used in airplane propeller blades. Tungsten-nickel alloys are used for electric lamp filaments. Elkonite, a copper-tungsten alloy, is used as an electrode for welding as it does not anneal at red heat and is used for applications where copper alone will fail. In dentistry an alloy of tungsten with nickel is used as a substitute for platinum. Other nonferrous alloys containing tungsten have been invented for surgical instruments, jewelry, pen points, high-speed bearing metals, safe and vault walls, and various uses where resistance to acid liquids or vapors is desired.

The invention of cemented tungsten carbide created a new metallurgy and opened



Scheelite, the chief ore of tungsten, fluoresces brilliantly when exposed to ultra-violet rays. This photograph shows an engineer examining a tungsten mine. Note how the scheelite stands out in the ultra-violet light.

a new field of alloys. In the past, some materials which have desirable properties have not found a wide application due to the difficulties encountered in machining with the steels available. The discovery of cemented tungsten carbide made possible the machining of these materials on a commercial basis.

In addition to being used as an alloy with various metals, tungsten also is used in the dyeing industries, for rendering cloth noninflammable, for weighting fabrics such as silk, as a substitute for white lead in paints, as a pigment. Tungsten oxide is used in ceramics to produce various shades of yellow in glass and porcelain.

PRIOR to the war, American tungsten requirements were met to a great extent by importations from China, Malaya, and the Argentine. Today, these sources are no longer available, due to enemy action and the lack of shipping space. Now, we are faced by a shortage of this needed material and the country is being combed far and wide for minable deposits of tungsten.

In North America, the ores of tungsten, known as scheelite, wolframite, and ferberite, are found generally in or in contact with the granites. Practically all the American production of tungsten comes from mines which were developed for their content of other metals before the need of home-produced tungsten became such a vital necessity. It will be readily understood that wartime requirements have been a powerful stimulus to tungsten production; but it should be pointed out that the metal will be greatly needed when the reconstruction period of the post-war era makes strong demands on the metal-working industries.

THE history and development of the tungsten industry is of interest. Agricola, in the sixteenth century, mentioned a mineral called *lupi spuma*, a name that he derived from the German *wolfram*, i.e., "wolf-froth." In 1747 Wallerius discovered tungsten, and selected the name *tenn-spat* (heavy mineral) for a new mineral species from Bohemia, which was believed to contain tin. Later, in 1781, Scheele, the celebrated Swedish chemist, examined a specimen of *tenn-spat* (Swedish, *Tung-Sten*) and proved that the mineral contained a peculiar acid united to lime as a base. This acid he called *tungstic acid*. In the same year Bergman stated that this acid was an oxide of a new element, *tungsten*.

During the period 1783 to 1786 the Spanish brothers d'Elhuyar showed that the mineral wolfram (wolframite) contained the same metallic acid as the mineral scheelite, but in association with iron and manganese instead of with lime. They were successful in isolating the oxide of the new metal, and on reduction with charcoal this yielded the metal tungsten.

The term "wolframite" was applied to nearly all tungsten minerals long before their nature was understood, hence the use of the symbol "W" for the element tungsten.

The first record of tungsten being used as an alloy was in 1801 when Guyton

BACK THE ATTACK WITH WAR BONDS

melted tungsten. He reports that it was brittle and could be used only in the form of an alloy; for making fixed colors, or for fixing vegetable colors. Later, patents were granted in England for the production of a steel-tungsten alloy and from that time on the use of tungsten as an alloy began to spread with great rapidity.

However, it was not until 1898 that an alloy of any commercial importance was developed. In that year a steel manufactured by the Bethlehem Steel Company created considerable interest among metallurgists at the Paris Exposition. Records of the exposition say that a man in the Bethlehem shop lighted a cigarette with a chip newly cut with tungsten steel, a statement almost unbelievable at that time.

During the next few years much research work was done on the properties of tungsten steels. This work led to the ultimate demand for tungsten tool steels. However, the use of these steels created problems in the industry. Machines had to be redesigned as the tungsten tools were found to be capable of taking much heavier cuts, thus increasing stresses on the machines. This, together with higher speeds, rendered older machines obsolete.

Early in the 1900's it was suggested that because of its high melting point and low vapor pressure, tungsten could be used as a filament in electric lamps, and in 1907 drawn tungsten wire for lamp filaments was developed. The filaments are very tough, though they are only about one-fortieth of the diameter of a human hair. The increased efficiency of tungsten lamps soon resulted in its almost universal adoption.

ENOUGH for the history and development of tungsten, let us now study the principal tungsten mineral—scheelite. Scheelite is found in almost all types of rocks and nearly always close to the granite, it is principally associated, however, with quartz veins, through which it is distributed irregularly as angular nodules, patches, or thin streaks, often being the only ore mineral present. Scheelite is a buff, heavy mineral and can be readily detected by its weight and relative softness (it can be scratched with a knife). It powders fairly easily when struck with a hammer and the fractured particles have smooth, flat, glassy surfaces. Iron-stained white rocks, particularly quartz, might,

under some circumstances, be mistaken for scheelite, but quartz will scratch glass while scheelite will not. Scheelite has the peculiar property of fluorescing a vivid blue-white under the ultra-violet lamp, and this affords a ready means of identifying the mineral.

The extraction of scheelite from its ores is complicated, as is the extraction of tungsten from scheelite, and will not be discussed in this paper.

In conclusion, the discovery of new sources of the essential strategic metals in the United States, or the expansion of existing sources may be considered in the light of a major contribution to the war effort. Adequate supplies of tungsten, for example, are so vital to nations engaged in modern warfare that the outcome may be influenced by one side having greater resources of tungsten.

SOLDIERS ARE BEING RELEASED RAPIDLY FOR RETURN TO MINES

THE War Manpower Commission has announced that, as of September 8, a total of 4,550 soldiers had been released from the army for employment in copper, zinc, and molybdenum mines of the Southwest and Northwest. As of September 1, less than 300 applicants had been rejected. WMC revealed that 98 per cent of those rejected for employment did not pass the physical examination. An effort is being made to have these men released for other employment, but at present they are returned to the army.

An additional 150 were rejected because they refused to accept work in mines west of the Mississippi River. They were willing to work in nonferrous mines in other sections of the country, but were not released to do so because WPB restrictions call for release of the men for work in the critical areas of the Southwest and Northwest.

LABOR-MARKET AREAS ARE CLASSIFIED BY THE WMC

THE War Manpower Commission has worked out a new labor-market area classification which serves as a basis for the development of manpower programs. The classifications are revised monthly to make allowance for changes in the available labor supply. The list includes all labor-market areas in which there is a city of 25,000 or more, or in which at least 5,000 additional workers will be needed before peak production is reached.

The labor areas have been divided into four groups and a total of 340 areas has been classified, of which 59 are in Group I, the acute shortage group. Among those classified and added to the list for the first time is the Wallace-Kellogg, Idaho, district, which is in Group I. Group II now includes 112 areas, and these are defined as areas of labor stringency or those in which a labor shortage may be anticipated within six months. A number of the strategic metal mining districts are classified in these two groups.

MORE ABSENTEES AT MIAMI

Absenteeism at the Miami Copper Company's mine and mill at Miami, Arizona, is reported to have increased one third between April and July of this year, and is approaching the 10 per cent mark, according to B. G. Messner, secretary of the labor-management committee. It was announced that during April there was a loss of 13,080 man hours, comparing with 17,232 man hours lost in July. Approximately 72 miners are reported to be absent daily at the mine and mill.

SEVERAL MINING CONFERENCES SCHEDULED FOR DENVER

A governors' conference will be held in Denver, Colorado, on Friday and Saturday, September 17 and 18. All western governors and some southern governors have been invited. Another important meeting will be held in Denver earlier in the same week when on September 13 and 14, Monday and Tuesday, there will be a senate hearing on the public land question.

The reclamation group and others plan to meet on September 15 and 16 and have invited representatives from about 17 of the western states to attend. Although there was insufficient time for careful planning of a coordinated program, it is hoped that the mining and other natural resources interests will send representatives to be present at an informal meeting to be held on the afternoon of September 15. At this meeting, which may be continued through the next day, a resolution pertaining to western mining will be drawn up and offered to the governors' conference for their consideration.

While plans have been made hastily and at the last moment, Robert S. Palmer, secretary of the Colorado Mining Association, feels that these impromptu meetings can be of great value to those interested in the natural resources of the west.

U. S. TREASURY HAS RELEASED IMPORTANT AMOUNT OF SILVER

UP TO July 17 the U. S. treasury had released for war essential industrial purposes about 700,000,000 ounces of its 3,000,000,000-ounce silver store. This silver will be used for war and essential industry purposes which it is estimated may require more than 200,000,000 ounces this year, exceeding the Western Hemisphere's output of newly mined metal.

Meanwhile, imports of silver from the other Americas have declined to a marked degree. This is indicated by the import figures on gold and silver released by the Department of Commerce for the first three months of 1943. During that period, precious metal imports from Mexico, leading producer of silver, dropped to \$5,915,000 from \$34,269,000 in the corresponding period of 1942. Gold and silver imports from Peru, second largest silver producer in Latin America, dropped to \$2,800,000 from \$4,567,000 in the first quarter of last year. In recent years, Mexico has been producing an average of about 80,000,000 ounces a year, about 40 per cent of the hemisphere's output.

In 1940, consumption of silver in industry and in the arts of the United States totaled about 40,000,000 ounces. This year, according to estimates by Richard J. Lund, director of the miscellaneous minerals division of WPB, consumption of silver by the arts and industry will be about 170,000,000 ounces, with the possibility that monetary and other needs may bring total requirements to 260,000,000 ounces.

Thus the U. S. government's storehouse of silver gains added importance, and the release of silver for war by the U. S. treasury represents a unique example among metals of conversion from peace to war tasks.



U. S. TO AID IN DEVELOPMENT OF ADDITIONAL STRATEGIC METALS

HAROLD L. ICKES, secretary of the interior, has announced plans for the expenditure of \$3,900,000 during the coming year in a program for development of additional mines carrying metals and minerals essential to the war effort. The projects chosen for exploration were selected from the record of more than 5,000 properties which have been examined by Bureau of Mines engineers, and are spread over 30 states and Alaska.

The western states in which exploration programs are planned and the number for each state include: Arizona, five; California, seven; Colorado, four; Idaho, two; Montana, four; Nevada, seven; New Mexico, eight; Oklahoma, two; Oregon, three; Texas, three; Utah, four; Washington, five; and Wyoming, two. These are in addition to a widespread hunt for new sources of iron- and aluminum-bearing ore, which has been under way for some time.

The search for zinc and copper is considered of the most importance in the new program and 26 zinc and 21 copper explorations are scheduled. The search for other metals will include: asbestos, one; industrial diamonds, one; mercury, three; tungsten, seven; vanadium, two; beryllium and other pegmatites, seven; corundum, two; molybdenum, three; manganese, two; tin, one; coal, two; quartz crystals, four; iron, four; chromium, one; bismuth, one; and nickel, two.

In Alaska, the exploration projects now planned include: chromium, one; coal, one; mercury, three; oil shale, one; tin, six; tungsten, one; and zinc-lead, one.

PHELPS DODGE TO ERECT ALUMINUM-MAGNESIUM PLANT

THE Phelps Dodge Copper Products Corporation is making plans to equip and operate for the Defense Plant Corporation a large extrusion plant for the production of aluminum and magnesium tubes, shapes, and rods, according to an announcement by Wylie Brown, president.

In order to get the plant into production at the earliest possible date, the Pullman Standard Car Manufacturing Company has agreed to sell to the DPC one of its largest buildings and a large tract of land at its Hammond, Indiana, plant. The Phelps Dodge Copper Products Corporation, a Phelps Dodge Corporation subsidiary, is one of the world's largest fabricators of copper and copper products and the Hammond plant will mark the first large-scale extension of the company's fabricating activities with metals other than copper and copper alloy.

W. W. BRADLEY OPTIMISTIC ON STRATEGIC MINES' FUTURE

IN discussing the mining situation in California, State Mineralogist Walter W. Bradley declared that he believes the strategic metal properties now operating may not be forced to close down at the termination of the war. While many strategic operations in California were suspended at the end of the last war, because of foreign competition, Bradley claims that the growth of the iron and steel industry in the Pacific Coast area will create a market for ferro-alloys. The establishment of the new steel plant of the Kaiser Company, Inc., at Fontana, California, is regarded as one of the most notable developments along that line.

Bradley also has called attention to the fact that the vast new supplies of inexpensive electric power now available will have an important bearing on the market for California strategic metals. Two ferro-alloys plants already are in operation at Tacoma, Washington, producing ferro-chrome from California chrome ore, and low-cost power is, or soon will be, available from the Shasta, Boulder, Grand Coulee, and Bonneville developments.

On the whole, taking into consideration California's ample iron, chrome, manganese, and tungsten resources, the availability of cheap power, the development of the iron and steel industry in California, and the establishment of stockpiles and purchasing depots throughout the state, Bradley is hopeful for strategic metal operations following the war.

RARE METALS ACQUIRES MORE TUNGSTEN GROUND

JOHN M. HEIZER of Mill City, Nevada, has assigned his lease on the National and Summit tungsten mines to the Rare Metals Corporation. The property, which is located in the Nightingale district of Pershing County, was located and partially developed by E. W. Dingee of Lovelock and an associate. Later, Leopold P. Meyer, 1814 North Bronson Avenue, Hollywood 28, California, purchased the claims outright and recently leased them to Heizer.

The property is opened by about 500 feet of tunnels, drifts, and crosscuts. Fred Johnson of the Rare Metals staff will be in charge of mining. For the present ore will be hauled to the Rare Metals' Toulon plant by way of Hot Springs, a distance of 50 miles. Plans for the construction of a new road have been made and are awaiting approval from the WPB.

AUTHORITIES ON METALLURGY WILL VISIT BRAZILIAN MINES

DR. ROBERT MEHL, head of the department of metallurgy at the Carnegie Institute of Technology, Dr. Allan Bates, manager of the chemical and metallurgical division of the Westinghouse Research Laboratories, and Arthur Phillips, professor of metallurgy at Yale University, have been named by the United States government to spend three months each in lecturing and making field tours through mining areas in Brazil. The men were named at the request of the Brazilian government.

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cents a share was paid on September 15, 1942. E. G. Dentzer, Superior, is general manager for Magma, and Charles Ayer, 14 Wall Street, New York, is president.

A Reconstruction Finance Corporation loan recently was granted for the New Strike mine, which is being operated by C. L. Baker, 234 Park Avenue, Prescott, Arizona. The property, formerly known as the Berberich, is located in the Walker mining district of Yavapai County, Arizona, and is being leased to Baker by the owner, M. B. Hazeltine, Box 871, Prescott. Baker has been employing three men at the mine, and work has included cleaning out the 40-foot shaft for prospecting purposes. The property is opened by a 250-foot tunnel and is equipped with pipe line and mine track. Values are in zinc principally, with some lead, silver, and gold.

Charles M. Turner, Cleator, Arizona, is reported to be applying for a loan from the Reconstruction Finance Corporation on the Christmas mine in the Peck mining district of Yavapai County near Goodwin, Arizona. United States Bureau of Mines engineers who recently examined the property are said to be hopeful that tests and assays will show a promising beryllium content. Plans also are being made to obtain access road funds. The property consists of three claims having values in silver, zinc, lead, and copper. Turner reopened the mine late last fall and in December 1942 installed a small pilot mill.

Carl B. Lancaster, Box 427, Willcox, Arizona, is managing operations at the Scenica mine, which is owned by Le Roi Mines, Inc. Five men are being employed. Present work consists of driving a tunnel on the property and stoping operations will follow. The property formerly was held by Dan Lewis, Jack Campbell, Adrion Skinner, and the late Charles H. Grunow, all of Willcox. Le Roi Mines, Inc., has headquarters at Jackson, California, where for many years the concern conducted gold mining operations. George F. Reed is superintendent.

A. C. Van Hook, Box 53, Prescott, Arizona, operating as the Van Hook Mining Company, has been granted a Reconstruction Finance Corporation loan of \$2,500 for use at the Poverty mine in the Hassayampa mining district, Yavapai County, Arizona. The mine has been partially opened and stoping operations have been started on pillars left by previous operators. Three men are being employed at the property, which has values in copper, silver, and some gold.

A. T. Russell, Box 192, Nogales, Arizona, is planning to start a new development program at the Bland mine situated in the Tyndall mining district of Santa Cruz County, Arizona. Work will consist mainly of reopening, draining, and timbering the upper and lower tunnel levels, preparatory to active mining operations. The work will be done by means of an RFC loan of \$3,875, which has been granted for the work. Russell holds a three-year lease on the Bland dating from May 10, 1943, with

a 15 per cent royalty on smelter returns and 10 per cent on mill returns being included in the lease agreement.

The Fluorine mine is another property which is being developed by means of a recently granted Reconstruction Finance Corporation loan. The operator, William C. Yell, Box 1946, Tucson, Arizona, has been allowed \$5,000 for minor rehabilitation of shallow workings and for mining blocked-out ore. The property is located in the Sierrita mining district of Pima County about 30 miles southwest of Tucson, Arizona. Little development work had been done previously, all work having been performed on the vein at shallow depth and the greater portion being immediately stoped. It has been estimated that there are available from 8 to 10 tons of dump ore and two or three cars of ore already broken in the tunnel stope. Yell holds a 10-year lease on the property from the owner, E. J. Freilinger, 414 South Fourth Avenue, Tucson, Arizona.

The Reconstruction Finance Corporation has awarded a \$15,000 loan for the Abril mine which is being operated by Walter Sim and Mrs. Henriette Miller. The property, located in Cochise County, Arizona, comprises five claims known as the Herrera, Dos Hermanos, El Rico, San Pablo, and La Hermosa. Values are in copper, zinc, gold, and silver. The Abril is being leased by the operators from the owners, the Abril Brothers and Hal W. Smith, all of Tombstone, Arizona. Sim and Mrs. Miller may be reached at 428 East Eighth Street, Tucson, Arizona.



The Army-Navy "E" award recently was made by the War Production Board to the New Idria Quicksilver Mining Company for excellence in war production. The company operates quicksilver property at Idria in San Benito County, California, and has had four Gould furnaces running at peak capacity, turning out about 12,000 tons monthly. E. L. Elliott, 52 Broadway, New York, New York, is president of the New Idria Quicksilver Mining Company, and C. Hyde Lewis of Idria is general superintendent of operations. Wesley Shaduck is general foreman and W. O. Wagstaff is plant foreman. E. A. Green is purchasing agent.

The Natomas Company, which is operating two dredges in the Folsom district of California, has reported a net profit of \$8,499 for the quarter ended June 30, 1943. This amount compares with a net loss of \$54,315 for the first quarter of 1943, during which time Natomas was not allowed to continue dredging operations. Last March the company was granted permission by the War Production Board to operate two of its seven dredges, and the original order was extended for an indefinite period in August. Thomas Mc-

Cormack, Forum Building, Sacramento, California, is president of the Natomas Company.

Early production is expected by Quicksilver, Inc., a subsidiary of Nevada Scheelite, Inc., at its quicksilver property in the Bodie district of Mono County, California. The claims are a part of the holdings of the Paramount Mining Company and have been under development for some time. Quicksilver, Inc., recently purchased the reduction plant of the Castle Peak quicksilver mine near Virginia City, Nevada. The equipment is being installed at the new location, which is about 11 miles from Bridgeport, California. Oscar L. Mills, 11320 South Alameda Street, Los Angeles, California, heads the scheelite concern and Donald B. MacAfee, Bridgeport, is vice-president and general manager.

McLaughlin and Applegarth, San Francisco mine operators, are said to be applying for Reconstruction Finance Corporation funds with which to construct a chrome concentrator near Red Bluff, California. During the year, the operators have shipped a substantial amount of chrome ore from the Kleinsurge chrome mine about 32 miles southwest of Red Bluff, Tehama County, California, and are reported to have blocked out large reserves of concentrating ore. The Kleinsurge, a good chrome producer during the last war, is held under lease by McLaughlin and Applegarth. They also are engaged in building and improving access roads to several potential producers in the district, preparatory to starting active development



work. Head offices for McLaughlin and Applegarth are at 3001 Russ Building, San Francisco, California.

A general wage increase of 50 cents a day for employes of the United States Vanadium Corporation at Bishop, California, has been ordered by the nonferrous metals commission of the National War Labor Board. The order was issued following two disputes involving the Metal Mine Workers Industrial Union, I. W. W., and the International Union of Operating Engineers, A. F. of L. All increases are retroactive to April 10, 1943. A maintenance of membership provision, with a 15-day escape clause, was ordered into the contract between the company and the A. F. of L. The order became final on September 1, 1943. J. R. Van Fleet, 30 East Forty-second Street, New York 50, New York, is vice-president of U. S. Vanadium.

Hoefling Brothers, J. W. Hoefling, managing partner, Box 786, Sacramento, Cali-

fornia, have reported that between May 1 and July 31 of this year the company produced 194,000 pounds of zinc. The ore was mined at the Big Bend mine northeast of Oroville in Butte County, California. Besides the zinc, the company produced 36,000 pounds of copper, and 3,900 pounds of lead. Present development operations at the Big Bend include drifting on the 200-foot level. Eighteen men are employed, working in two eight-hour shifts. The company's output is being treated at its Surcease mill about five miles from the mine. W. E. Messner is superintendent of Big Bend operations.

Mining of cinnabar ore has been started at the Wide Awake mine in the Wilbur Springs district of Colusa County, California. The operating company, said to have been in debt \$13,000 in 1942, is reported to have liquidated its obligations and recently improved its plant. Extensive ore reserves are said to be exposed at the Wide Awake.

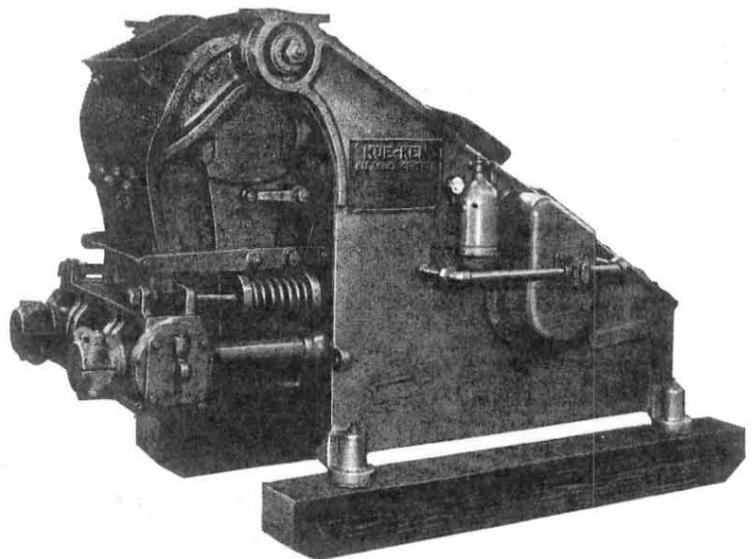
The 60-ton rotary furnace at the Harrison quicksilver mine in Morgan Valley near Reiff, Lake County, California, is said to be operating at capacity at present. Newly discovered cinnabar deposits are reported opened up and necessary machinery and equipment have been installed. The property was leased last winter by H. C. Scott, Oakland, California. Mining is carried on by shovel methods.

Development work is being started at the Hastings quicksilver mine by the Belmont Osborn Gold Mining Company. The property is located on the east side of the

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Sulphur Springs Mountain in the Sulphur Springs mining district of Solano County, California, and recently was taken over under lease by the Belmont Osborn company. The mine was operated first during the 1870's and was a good producer during World War I. It had not been worked since 1929. Principal workings include a 1,100-foot tunnel, and there is reported to be a total of 2,200 feet of tunneling on the property. Belmont Osborn plans to install modern retorting equipment while development work is under way. The company is headed by W. A. Hayes, 1900 Leimert Boulevard, Oakland, California.

Preparations are being made to start sinking another shaft at the Copper Basin-Zuna property, under development by the Pacific-Atlantic Metals Corporation. The claims, situated in Mesquite Canyon about 12 miles northwest of Randsburg, Kern County, California, are owned by Della G. Gerbracht. The ore will be shipped to a Salt Lake City smelter. James Barrett is vice-president of the Pacific-Atlantic Metals Corporation and is addressed at the Bank of America Building, Beverly Hills, California.

It is expected that gypsum production will be started by the San Joaquin Gypsum Company in the near future. The newly organized concern has been conducting extensive development operations on properties in Kern County, California, for some time. The deposits are said to be located near the surface and mining is conducted with carryalls and scrapers. The material is stockpiled and loaded into trucks from a ramp. The San Joaquin Gypsum Company is controlled by Oakland, California, interests.

Announcement has been made that the mining equipment of the Star Springs Mercury, Inc., was offered for sale on August 27, 1943, at the mine at Skaggs Springs, Sonoma County, California. The highest bid was submitted to the court for approval on August 30, 1943. The machinery, which has an estimated total value of about \$14,000, consists of compressors, hoists, kiln, condenser, pulverizer, jackhammers, motors, pumps, and a 1935 Chevrolet 1½-ton truck. The Star Springs Mercury company, which was organized by a group of Hollywood actors, among them Reginald Owen, Cary Grant, Randolph Scott, and Frank Morgan, filed articles of bankruptcy late in 1942.

W. Charles Donaldson is starting development work at his Ford copper-gold property situated in Eldorado County, near Georgetown, California. For some time, Donaldson had been residing in Oakland, California.

The new operators of the Collins chrome mine and the Nigger Hill and Beal Lake manganese properties in Trinity County, California, are making arrangements for the installation of mining machinery and equipment in order that active production may be started immediately. It has been estimated that 500,000 tons of 40 per cent manganese ore and about 1,000 tons of chrome ore will be produced from the three

properties. Shipments will be made to the government stockpile at Anderson, California. The three mines recently were leased by M. H. Collins, Platina, California, to the Western Empire Mines, A. L. Mecham, Box 262, Santa Barbara, California, president. N. H. Rice is vice-president and general superintendent.

The Newmont Mining Corporation has declared a dividend of 37½ cents a share payable September 15, 1943, to stockholders of record August 27, 1943. A similar dividend was paid by the corporation on June 15, 1943. Charles F. Ayer, 14 Wall Street, New York, New York, heads the Newmont concern.

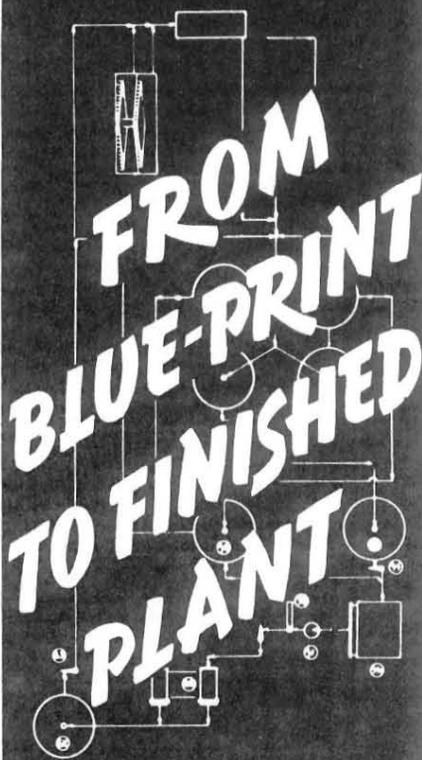
Regular operations are under way by the Bender Corporation at its iron property at Cristo, about 10 miles south of Santa Cruz on Monterey Bay, California. Although work had been scheduled to start about the first of June, some difficulty in obtaining and installing heavy equipment necessary in removal and processing of the ore delayed the beginning of operations. It is hoped that the corporation can maintain a production record of about 2,000 tons of iron ore a month, and shipments will be made to San Francisco, California. The ore will be used in defense production by the Bender concern, which represents the Coast Reduction Company of New York in the venture.

According to reports, the Arroyo Seco Gold Dredging Company, Ione, California, recently sold 30 acres of mining ground to the Wallace Dredging Company. The property is located on the Sacramento-Ione highway in Amador County, California. The Wallace concern formerly worked property at Wallace, Calaveras County, California, but the dredging operations were suspended when the ground was worked out. E. B. DeGolia, 311 California Street, San Francisco, California, heads the Wallace Dredging Company, and the Arroyo Seco company has Walter W. Johnson, 351 California Street, San Francisco, California, as its general manager.

The Winston Copper Company recently was awarded a Reconstruction Finance Corporation loan to be used in the development of mining property adjoining the company's Oak Hill smelter near Ione in the Ione Mountain Springs district of Amador County, California.

Spectrographic analysis of ores at the Antelope copper mine in San Benito County, California, is said to have revealed a titanium content of about 1 per cent. This is reported to be the first showing of titanium discovered in San Benito County. Other values include 10 per cent copper, and small percentages of iron, aluminum, chromium, magnesium, strontium, sodium, potassium, and silicon. The property is owned by H. V. Underwood and E. A. Mathews, both of Hollister, California, and A. S. Pearce of San Juan Bautista, and has been under lease to R. R. Stevenson, Box 1684, Richmond, California.

Carrico and Gautier, contractors, 365 Ocean Avenue, San Francisco, California, are maintaining regular shipments of high-



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grade iron ore from property on the McCloud River northeast of Redding, Shasta County, California. Mining is conducted in open pits with power shovels and ore is trucked to the nearest railroad point for shipment to smelters and shipyards. The operating company has the iron mines under lease from the Shasta Iron Company, Robert Finn, San Francisco, president.

COLORADO

The shaft at the Old Town mine near Idaho Springs, Colorado, has been cleaned out to the 900-foot level and the seventh level to the east is being repaired in order to reach large known bodies of stope-fill material left by a former operator working through the Wautauga shaft. The Wautauga claim is a portion of the Old Town holdings, which are owned and operated by George K. Kimball, Jr., of Idaho Springs. The Becky Sharp claim, also a part of the Old Town group, is stated to have produced over \$400,000 from a depth of only 440 feet, with copper values averaging about 4 per cent and ranging as high as 15 per cent. Stope-fill material is being hoisted from the Old Town and it is understood that it will be concentrated at the Silver Spruce mill.

Lawrence M. Drake, civil engineer of 1744 Eighth Avenue, Greeley, Colorado, and his father, W. Ray Drake, have secured leases with options on 1,280 acres of land 2½ miles south of Keota in Weld County, Colorado. Exploration for galena is under way. A shaft is being sunk and, if possible, core drilling will be started before winter. The Drakes expect to encounter two veins, one at a depth of 68 feet and the other at around 330 feet. The property has been named the Puka.

The Mendota mill is reported to be treating mill-grade ore from stopes on the Frostberg vein of the Mendota-Frostberg group of mines at Silver Plume, Colorado. The property was leased last fall by Wallace K. Howard, Victor, Colorado, and associates from the Consolidated Smelting and Metals Company. F. G. Watrous, 290 South Humboldt Street, Denver, is president and general manager of the Consolidated company.

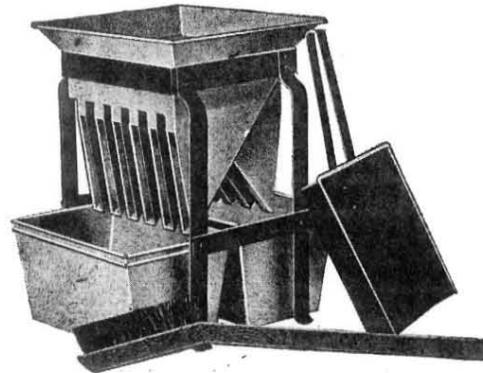
The Ruth custom mill at Idaho Springs, Colorado, operated by J. P. Ruth, Jr., Continental Oil Building, Denver, is treating ores from the Freighter's Friend and the Idaho Bride mines, making a separation of the lead and zinc values. The Freighter's Friend is being operated by Arthur Portenier of Idaho Springs.

The Nonferrous Metals Commission of the War Labor Board has denied wage increases in three disputes involving Colorado vanadium mining operations. The commission simultaneously established minimum wage brackets for the Colorado non-ferrous mining industry and announced it was reserving the right to reconsider maintenance of membership and union check-off clauses in a contract in view of litiga-

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VANADIUM INVESTIGATION IN MERCUR DOME GOLD PROPERTY

ON SEPTEMBER 13 of this year the Bureau of Mines resumed its investigation of the vanadium deposit in the property of the Mercur Dome Gold Mining Company at Mercur, Utah. Last spring when the company was completing its 1,000-foot shaft, vanadium values were disclosed in the lower levels. A crosscut from the bottom of the shaft north to the footwall, a distance of about 360 feet, was driven and is in vanadium its entire distance. The last 100 feet are stated to show ore running 1.10 and 1.18 per cent V_2O_5 .

The company is headed by S. H. Buckley of Provo, Utah. C. N. Sweet, Continental Bank Building, Salt Lake City, is vice-president and general manager. Sweet and T. G. Mays, one of the directors, financed the project. The company was organized in 1937 and was interested in gold at that time. Later, with the improvement in the lead-zinc market, the company revamped its program to include prospecting for those metals. When the inclined shaft struck vanadium ore, plans were changed again in order to develop this deep-lying vanadium ore body.

The Bureau of Mines carried on some investigation and the company worked on its own account. Now the bureau has returned and is engaged in determining the thickness of the vanadium deposit.

INTERNATIONAL NICKEL EARNS \$1.04 IN FIRST HALF YEAR

FOR the six months ended June 30, 1943, the International Nickel Company of Canada and subsidiaries reported a net profit of \$16,155,457 after all charges, depreciation, amortization, taxes, etc., equivalent after preferred dividend requirements to \$1.04 a share on the 14,584,025 shares of common stock outstanding. This compares with a net profit of \$1.03 a common share in the corresponding period a year ago, and \$1.12 in the first six months of 1941.

In the quarter ended June 30, 1943, net profit was \$8,080,219, comparable with \$8,075,238 in the preceding quarter, and \$7,936,648 for the quarter ended June 30, 1942. Net working capital on June 30, 1943, amounted to \$93,788,320, compared with \$82,722,113 on June 30, 1942.

NEW MEXICO POTASH FIRMS PLAN WAGE STABILIZATION

THE Potash Company of America, the International Minerals and Chemical Company, and the United States Potash Company, all operating in New Mexico, are cooperating with their respective unions in an effort to establish a uniform wage schedule, job classification, and other labor conditions.

The action followed voluntary applications to the Nonferrous Metals Commission by the companies requesting satisfactory wage adjustments. Upon recommendation of the commission, representatives of the three companies and union delegates met with John Pfau, U. S. labor conciliator, September 1 at Carlsbad, New Mexico, as the first step in adopting an equitable labor structure.

RESTRICTIONS ARE RELAXED BY WPB ON SOME METAL USES

RESTRICTIONS on the use of aluminum, magnesium, copper, nickel silver, and nickel plating in the manufacture of industrial safety equipment have been eased by a recent ruling of the War Production Board. The changes are said to be the result of improvement in the metal supply situation.

The materials may be used in specified parts of respirators, gas masks, oxygen breathing apparatus, goggles, and protective devices. The order specifies that magnesium must be used in place of aluminum wherever possible. Restrictions on the use of magnesium were removed.

COLORADO FUEL AND IRON REPORTS FOR FISCAL YEAR

COLORADO FUEL AND IRON CORPORATION reports a consolidated net income for the year ended June 30, 1943, of \$1,351,528, equal to \$2.40 a share. This is after \$1,960,343 provision for depreciation, depletion, and amortization of property, plant, and equipment, and after \$1,236,000 provision for federal income and excess profits taxes. The company paid \$563,620 in dividends during the period at the rate of 25 cents a share in August, November, February and May. A further dividend of 25 cents a share was declared during the year and paid on August 28, 1943.

The company's interests are varied and include the California Wire Cloth Corporation, the Colorado and Wyoming Railway Company, and the Colorado and Wyoming Telegraph Company. Its operating properties consist of the Minnequa steel works at Pueblo, Colorado; Sunrise iron mine at Sunrise, Wyoming; Duncan iron mine at Cedar City, Utah; Wagon Wheel Gap fluorspar mine in Colorado; Monarch limestone and dolomite quarry at Garfield, Colorado; Dolomite quarry at Canon City, Colorado; and coal mines at Morley, Valdez, Farr, Tioga, Canon City, and Crested Butte, all in Colorado.

W. A. Maxwell, Jr., Continental Oil Building, Denver, is president of the company.

BOULDER TUNGSTEN MINERS STRIVING FOR REPRIEVE

TUNGSTEN mining in Boulder County, Colorado, received a blow when the order came through from the Metals Reserve Company refusing further shipments of tungsten ores of certain specifications. As most of the tungsten-bearing ore in the county is of the type rejected, the danger to Boulder County miners is obvious. Efforts are being made by local mining men to have this order rescinded.

The order was modified to a certain extent by the Metals Reserve Company consenting to purchase ores containing 0.8 per cent or more tungsten trioxide. One of the original limitations consisted of a refusal to purchase tungsten ores below 1 per cent. There are, however, other clauses in the original order which still stand and which are objectionable to Boulder County tungsten producers.

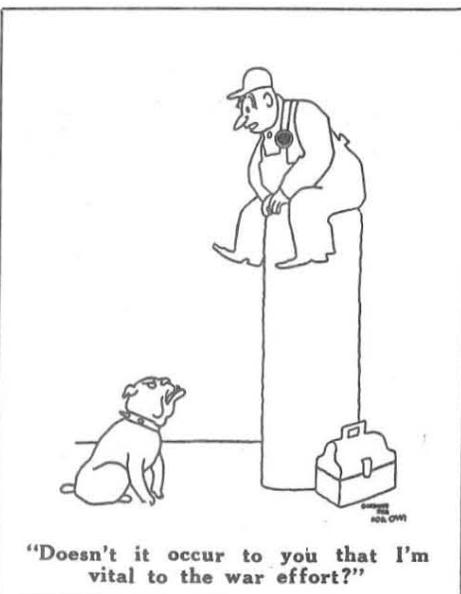
The other side of the picture is that tungsten is one of the strategic materials which is no longer in the tight position it once occupied. Increased production throughout the country, the previous allocation order directing all tungsten to government channels, and completion of certain commitments to Russia have eased the tungsten situation considerably. Inevitably, this will cast a shadow over the producers of lower grade or less desirable tungsten ores. The government will refuse extra encouragement in the production of a material no longer scarce.

U. S. GOLD AND SILVER OUTPUT SHOWS FURTHER DECREASE

GOLD production from domestic mines during the month of June 1943 dropped to 113,154 fine ounces from the May 1943 figure of 123,952 fine ounces, a decrease of nearly 9 per cent. However, in comparison to the production of June 1942 the decrease amounts to 60 per cent. In silver production the decrease from May 1943 to June 1943 was 10 per cent—3,786,225 ounces in May and 3,405,025 ounces in June.

The gold production of the combined western states decreased by 6 per cent. Utah reported a 7 per cent increase due to the shipment of two carloads of ore, containing 3,000 ounces of gold, from the Tintic Bullion mine. The 6 per cent decrease in Arizona's gold production was due to the reduction in output from the large copper mines, and Washington's 18 per cent decrease was caused by a decrease in the output from siliceous ores and the smaller output of Howe Sound Company. The 9 per cent decrease in California and the 35 per cent decrease in Nevada were the result of the early closing date of the San Francisco Mint accounting office. Montana showed a decrease of 25 per cent, caused by three factors—less siliceous ore, less zinc-lead mill ore, and lower grade material treated at Anaconda Copper Mining Company's copper concentrator. A 59 per cent increase in Idaho came principally from gold-tungsten ores, and from gold bullion sent to the San Francisco Mint by Talache Mines, Inc.

In most instances the reduced production of silver in the western states may be attributed to similar reasons.



ture plans include shipping dump ore and rehabilitating the old workings, which consist of two shafts, 200 and 400 feet deep. The siliceous copper ore will go to Hayden, Arizona. Phillips is working the property under lease from the owner, Phil Redondo, Kelvin, Arizona.

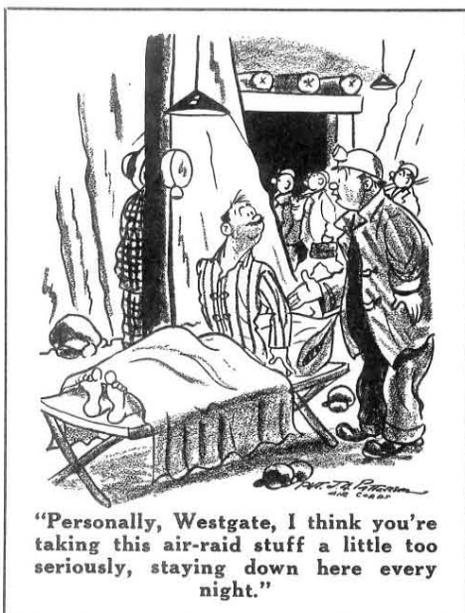
Charles M. Taylor, County Assessor's Office, Tucson, Arizona, has taken an option on the **Coronado** mine situated in the Old Hat district in the Catalina Mountains of Arizona. Taylor recently applied for a \$25,000 loan from the Reconstruction Finance Corporation to start working the property and RFC engineers have examined the Coronado. The mine has not been worked previously.

It is expected that the United States Bureau of Mines will conduct a diamond drilling program at the **Johnny Bull** mine in the near future as part of its investigation of ore reserves in the Chloride, Arizona, district. The Johnny Bull property is situated south of the Tennessee-Schuyllkill mine and the diamond drilling work is expected to prove the extension of ore shoots in the direction of the Johnny Bull. Joseph B. Cummings is project engineer.

The **Shattuck Denn Mining Corporation**, Bisbee, Arizona, has reported for the six months ended June 30, 1943, a profit of \$191,228, after taxes and depreciation, but before depletion, and federal income and excess profits taxes. This figure is subject to audit and year-end adjustments, and compares with an income of \$127,147 for the same period of 1942. Current assets as of June 30, 1943, including \$1,107,371 cash and U. S. government securities, and with copper on hand carried at market, amounted to \$1,731,290. Current liabilities, before provision for income and excess profits taxes, totaled \$143,926. These compare with \$1,577,391 in assets and \$109,660 in liabilities on June 30, 1942. Thomas Bardon, 120 Broadway, New York 5, New York, heads the Shattuck Denn Mining Corporation and J. A. Wilcox of Bisbee is general manager.

The **Emerald Isle Copper Company** has reported satisfactory progress at its property 15 miles north of Kingman, Arizona, and actual production is expected in the near future. Ore will be shipped to the Clarkdale smelter of the Phelps Dodge Corporation, although some ore may go to the American Smelting and Refining Company's plant at Hayden, Arizona. The company has received a zero quota for the regular bonus of 5 cents a pound on copper and also an additional bonus of 7.1 cents a pound, making a total of 12.1 cents a pound bonus over the 12-cent regular copper price. The company also has been granted necessary priorities for purchase of machinery and equipment needed in the operation. Mining is by power shovel at the open pit, and ore will be hauled 15 miles to the railroad at Kingman. A possible production of 200 to 300 tons a day is hoped for when regular operation is under way. Plans are being made to complete the company's leaching plant. Ogden C. Chase, Valley National Bank Building, Tucson, Arizona, is president of Emerald Isle.

G. T. Humphries and associates recently acquired leases on the **Little Gem** and



"Personally, Westgate, I think you're taking this air-raid stuff a little too seriously, staying down here every night."

Lookout claims located near Mayer in the McCabe mining district of Arizona. The **Little Gem** is owned by C. I. Peake of Mayer, Arizona, and the **Lookout** is being leased from Sherman Hazeltine, Bank of Arizona, Prescott, Arizona. Humphries, who is vice-president of the Patagonia Metal Mills, Inc., Patagonia, Arizona, may be reached at Humboldt, Arizona.

Shipments are going regularly from the **Binghampton** mine to the Clarkdale smelter at the rate of about 200 tons of oxidized copper ore per week. The property is located in the Agua Fria mining district east of Mayer in Yavapai County, Arizona, and is being leased by Gilbert Mock of Mayer. The **Binghampton** is owned by Mark Gemmill, Crown King, Arizona, and W. J. Henson and V. A. Hale, Box 110, Prescott, Arizona.

The **Apex Mining Company**, headed by H. W. Patterson, 1828 Liberty Bank Building, Buffalo, New York, is operating the **Kaibab** mine at Jacob Lake in the Kaibab

ARIZONA'S SOLDIER-MINERS AND THE MANPOWER PROBLEM

An Arizona mine which received 60 of the released soldiers reports that about one-half of those soldiers had never before been in a mine and that most of the rest were coal miners. Also, several of the soldier releases failed to qualify physically. One particularly bad case was asked as to how he had passed the army physical examination. He replied that there was a room with about 250 in it when the officer asked if there were any who had anything wrong with them physically; that he had raised his hand, but apparently the officer did not see it.

Incidentally, at this same mine the exodus of former employes during the period that the soldier-miners were coming in totaled 16 more than the civilian replacements. This indicates that, if the quitting rate continues, the mine will be back to the employment situation that prevailed prior to the soldier release in less than three months.

Forest of Coconino County, Arizona. The company is shipping about 100 tons of siliceous copper ore daily to Garfield, Utah, and is planning on shipping to the Clarkdale smelter, due to the need for this type of ore at that point. Operations are carried on by power-shovel methods and about 20 men are employed. Vincent M. Ryan, Jacob Lake, Arizona, is in charge of work.



The operators of the **Lakeview** mine have established offices at 901 Shreve Building, San Francisco, California. The mining property is situated about six miles east of Auburn, California, and Lewis F. Johnson of Auburn is superintendent in charge of operations. The **Lakeview** carries values in copper, gold, and silver.

The **Strategic Minerals Company, Ltd.**, which formerly maintained headquarters at 238 Market Street, San Francisco, California, is establishing larger offices and laboratory at a new location in San Francisco. In the meantime, the concern is working out of its Minden, Nevada, office. **Strategic Minerals** is operating a promising tungsten property 12 miles east of Minden and plans are being made to erect a milling plant at the property sometime this fall. Work is in charge of William J. Loring of San Francisco. **Strategic Minerals** also has tungsten holdings in Tulare County near Badger, California.

The **Tulare County Tungsten Mines** operations are progressing satisfactorily, with the milling plant running 24 hours per day. The output is shipped to Los Angeles, California, from the mining property 14 miles east of Exeter in Tulare County, California. Howard G. Teale, Visalia, California, is general manager and Kenneth Dunham, Lindsay, is superintendent of operations at the mine. Dominick F. Lauricella, 311 South Spring Street, Los Angeles, is in charge of the company's finance and sales.

The **Red Star Mining Company, Inc.**, is reported to have made application for permission to conduct hydraulic mining operations at the **Red Star** gold mine near Michigan Bluff in Placer County, California, and has been granted a hearing before the California Debris Commission. The company formerly operated mining property, including the **Champion**, **Lucky George**, and **Hercules** claims, near French Meadows. David M. Ray of Georgetown, California, heads the **Red Star** concern. John A. Shields of Auburn is vice-president and A. F. Erickson, 2510 Chanote Road, Santa Rosa, is secretary and purchasing agent for the company. Head offices are maintained at 210 Post Street, Room 911, San Francisco.

John Coleman, Sam Bekoff, and Elton O. Carvin, Forest, California, are engaged in operating the **Bald Mountain** mine near Forest in Sierra County, California. Work has consisted principally of retimbering the old **Bald Mountain** tunnel.

Early production of zinc-copper ore is expected at the Penn mine which is located about two miles from Campo Seco in Calaveras County, California. The old workings have been dewatered and mining machinery installed. The ore will be trucked to the Eagle Shawmut mine for milling. D. C. Peacock, Chinese Camp, California, is in charge of operations.

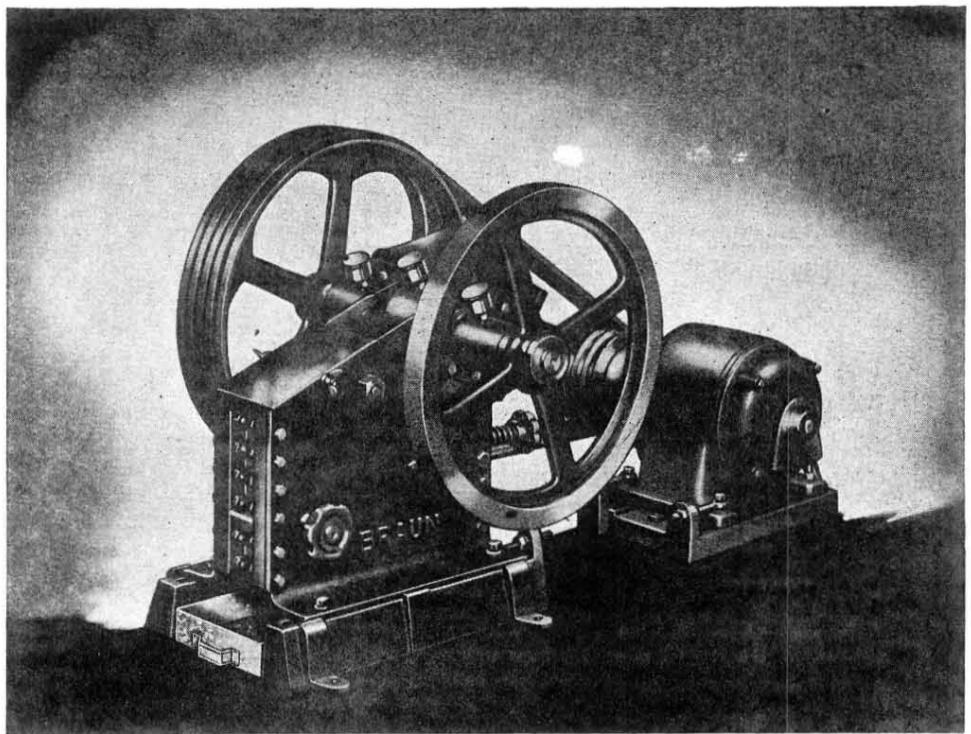
The new 50-ton gravity concentration plant recently installed at the Strawberry tungsten mine has been put into operation. The mine is located on Granite Creek in eastern Madera County, California. James C. Perkins, well-known Tonopah, Nevada, mine operator, is manager of the Strawberry property and is addressed at 3122 Washington Avenue, Fresno, California. Walter B. Lenhart is mill superintendent.

Milling operations at the new plant at the Polar Star mine were scheduled to start the latter part of September. The property is near San Simeon in San Luis Obispo County, California, and the six quicksilver claims were acquired late in 1942 by Lawrence K. Requa, 619 Roosevelt Avenue, Salt Lake City, Utah. Robert Durk, San Simeon, California, is engineer and plant superintendent at the project. James E. Collord is general superintendent of operations.

Recent tests conducted at the tungsten property of Harold Case and Walter F. Lineberger, 85 El Bosque Road, Santa Barbara, California, have been reported successful and an access road has been approved by the United States Bureau of Mines, the Public Roads Administration, and the War Production Board. It is expected that machinery and necessary equipment will be moved in to the mine when the road has been completed. The property is near Lemoncove in Tulare County, California.

The Denver, Colorado, office of the War Labor Board recently approved a management-union solicited wage increase for miners at the Mount Diablo quicksilver mine, Contra Costa County, California. The WLB decision calls for a 9 to 15-cent per hour increase for each of the 10 employees, resulting in an average wage of \$6.48 to \$7.44 per day. The ruling permits a 48-hour week and work every other Sunday on a double-pay basis. The pay increases are retroactive to June 10, and of the \$75 to \$125 individual back-pay sums a portion must be accepted in war bonds. The Mount Diablo is operated by the Bradley Mining Company and production has been proceeding at the rate of one to three flasks of quicksilver daily. The company is headed by Worthen Bradley, 425 Crocker Building, San Francisco, California. F. A. Hammersmith, 920 Crocker Building, San Francisco, is purchasing agent.

A camp has been established and mining of scheelite started by the Metals Reserve Company at the Yosemite Tungsten Project near Dorothy Lake in Yosemite National Park, California. Mining is to be conducted by open-cut methods, ore will be sorted under fluorescent lamps, and shipments will be made by pack animals and trucks. The roads in the region are now free of snow and the MRC plans to move in compressors, power drills, and



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other mining machinery as soon as trail conditions permit. John A. Burgess, formerly general manager of the Carson Hill Gold Mining Corporation, Melones, California, is in charge of the Dorothy Lake project for the Metals Reserve.

A third carload of copper-gold ore has been shipped from the **Yellow Treasure** mine to the American Smelting and Refining Company at Selby, California. The **Yellow Treasure**, located near Ridgecrest in Kern County, California, is owned and operated by Anthony De Mayo, Box 14, Ridgecrest.

The **Winston Copper Company**, Wayne Loel, Subway Terminal Building, Los Angeles, California, is shipping five 50-ton carloads of copper ore per week from the **Newton** copper mine seven miles from Jackson, California. The company is operating under an RFC loan and is employing 25 men on two shifts. Winston Copper is said to be planning to expand the program in the near future. The **Newton** mine is owned by Fred Dufrane and was taken over from J. H. Lester of Jackson by the Winston concern this summer.

According to reports, a D-4 Caterpillar High-Lift loader and bulldozer have been purchased for use in loading trucks and constructing a road at the old **Bagdad Chase** or **Pacific** mine near Ludlow, San Bernardino County, California. The mine was closed down last May because of the labor shortage, but open-pit mining is well under way at present. The **Bagdad Chase** produces a copper fluxing ore, which is being shipped to the Hayden, Arizona, smelter. Over 250,000 tons of ore are blocked out and a monthly output of 2,000 tons is planned. A similar monthly production from underground operations was reported for 1942. The hauling contract has been awarded to Thayer Harp, Box 931, Ludlow, and Donald F. Love of Ludlow is superintendent in charge of operations.

Rehabilitation of the **Valley View** mine recently was completed by means of a \$5,000 loan from the Reconstruction Finance Corporation, but it is reported that the RFC has refused to grant a second loan for further development of the property. The mine is located near Sheridan in Placer County, California. Opened by a 179-foot shaft and 400 feet of adits, the **Valley View** is said to contain ore bodies sampling 10 per cent copper and carrying important amounts of gold and zinc. Some

FROG LEGS

Frog legs! Now there's a solution for the miners' meat problem. Perhaps OPA wizards could introduce a project for the raising of bullfrogs in the mine sump. The sump could be stocked with small fish and the banks lined with trees and other growth to provide shade and protection for "Jumbo." Of course, it would be necessary to provide facilities for artificial sunlight too.

And, since under crowded conditions the frogs sometimes develop a leg infection which destroys their food value, perhaps it would be wise to keep an accredited veterinarian in attendance.

Far fetched, did you say? No more so than some of the other schemes being thought up by OPA experts to solve the meat problem for miners.

copper ore has been shipped from the **Valley View**, which formerly was worked for its gold values. The present operator is G. M. Trent, Auburn, California, who holds the mine under lease from the owner, J. B. Landis, Auburn.

The United States Geological Survey recently examined the **Little Castle Creek** and the **Coggins** chrome properties, as part of its investigation of domestic deposits of strategic minerals. The **Little Castle Creek** and the **Coggins** both are located in the **Little Castle Creek** district near Dunsuir in Siskiyou County, California. The **Coggins** property is owned by James K. Remsen of Grants Pass, Oregon, who has several chrome prospects in Del Norte County, California, as well as holdings in Oregon. The property has been under development for over a year and recent explorations disclosed substantial deposits in previously unexplored ground. The **Little Castle Creek** is owned by the **Little Castle Creek Company** and a crew of about 20 men has been employed in development work.

The **Tyson Chrome Mines, Ltd.**, has been shipping chrome ore to the Metals Reserve Company at the rate of over 1,000 tons per month from its **French Hill** property about 22 miles northeast of Crescent City, Del Norte County, California. It is expected that this output will be stepped up to approximately 1,500 tons per month with increased production from its **Mountain View** mine in Del Norte County, California. The properties are opened by 80-foot shafts. John A. Noce, formerly of

Sutter Creek, California, is superintendent in charge of production, and Roger Beals of **Crescent City, California**, is engineer for the company. Benjamin C. Mickle, 406 Montgomery Street, San Francisco, California, is operator and manager of the **Tyson** project.

COLORADO

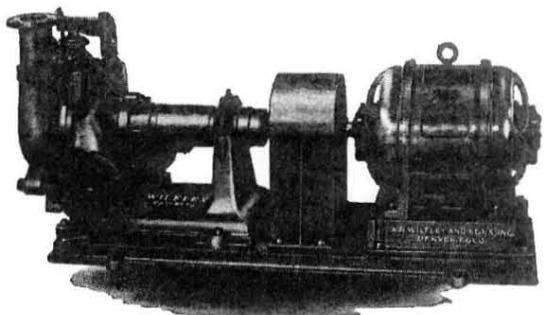
Five trucks were purchased to augment those already being used to haul ore from the **Monte Cristo** lead-zinc mine of the **Golden Cycle Corporation**. The trucks, each carrying about seven tons of ore, make two trips daily from the mine to the railroad at Buena Vista, a distance of 52 miles, where the ore is loaded for shipment to the **Golden Cycle** plant. Jess Vetter of **Cripple Creek** is doing the loading and hauling under contract. Seven men are employed in the mine where production is being increased steadily until the goal of 100 tons of ore daily is reached.

High-grade lead ore is reported to have been opened for a distance of 30 feet in the **Micky Breen** mine near Ouray, Colorado. E. W. Creel of Ouray has been working the mine for several years. He has completed construction of a tramway from the mine to the highway to facilitate the removal of ore.

The **Kramer Mines, Inc.**, is reported to have taken over three of the **Fred Baker** fluorspar claims in the North Park area of Jackson County near Steamboat Springs, Colorado. The company's other fluorspar operations, consisting of three mines and a mill, are located near Salida in Chaffee County, Colorado. A road is being built to the **Baker** claims and plans for a mill at North Park are being considered by the company. R. E. Kramer, 675 South Downing Street, Denver, is president and G. L. Frayser of Salida is chief metallurgist.

A new concern is being organized to work the **Lucky Boy** zinc mine in Gunnison County near Marble, Colorado. William Jessen, formerly of Aspen, Colorado, is president of the company; George Gaskell of Long Beach, California, is vice-president; Herbert Wagner is engineer; and John Swiglow of Monrovia, California, is secretary-treasurer. At Marble, Louis

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Coffeyville, Kansas, the pre-war outlet for Arizona oxidized zinc ores, has hiked the specifications from 20 to 35 per cent for combined zinc and lead content and now will not accept ores with more than a trace of copper or more than 5 per cent lime. This effectually shuts off Arizona ores, according to the report.

The report states that Arizona is definitely out as to increased zinc production unless some facilities are provided for marketing the ores and that such markets as may be provided must be in the form of custom milling plants strategically located so that, with relatively short trucking hauls, they can serve several mines. The immediate opportunities are shown by the report to be for plants in Mohave County and Gila County.

MEXICAN MINES SEEK RELIEF FROM SHORTAGE OF TIMBER

MEXICAN mines in the State of Hidalgo are reported to be facing a shortage of timber, with the situation in the Pachuca mining zone being the most acute. Some of the Hidalgo mine operators are said to have appealed to the federal government for help in overcoming the shortage. Some have attributed the condition to the enforcement of the recent presidential decree demanding that all lumber mills in Mexico furnish the railroads with 50 per cent of their wood to provide sleepers. The decree held that the action had been necessary due to a shortage of railroad ties.

PRODUCTION OF VANADIUM IN COLORADO PUBLICATION

THE Colorado School of Mines in its Quarterly, Volume 38, Number 4, has published an article entitled "The Occurrence and Production of Vanadium" by George O. Argall, Jr. The history of vanadium, its distribution, mining, milling, marketing, and uses is treated in a clear and concise manner and the beneficiation of and recovery from various vanadium-bearing ores are discussed. An enclosed map shows the occurrences on the Colorado Plateau in Colorado, Utah, and Arizona. Tables showing costs, flowsheets of several of the larger plants, and suggested flowsheets are a valuable part of the publication.

Argall, a graduate mining engineer of the Colorado School of Mines with the class of 1935, has worked for some of the largest vanadium companies in the country and is familiar with the many mine and mill plants which he discusses. The publication may be obtained from the school of mines at Golden, Colorado, for the price of \$1 postpaid.

MAGNESIUM PRODUCTION IMPROVEMENT REPORTED

PERMANENTE METALS CORPORATION has made known what its engineers regard as an important improvement in the magnesium metal production process used at its original Los Altos, California, plant.

The step has to do with production of dry pellets as charging stock for bottle retorts. Basic work is attributed to Walter Adams, former chemist with Homestake

Mining Company and with Permanente since November 1941, although others have helped.

Wet process charging, heretofore used, had been the method adopted after earlier pelleting failures. Slurry and "dough mixing" slowed the process, necessitated draining of melted solvent from retort bottoms.

Adams attacked the problem of dry-pellet production with hand tools, proved their possibility and usefulness in pilot apparatus. Larger equipment was sought for a full scale test. A press used in squeezing walnut shells into fuel briquets was imported from a San Jose walnut operation and became known as the "dog-biscuit maker" but proved disappointing.

The technicians turned to adaptation of a pilot press used to make feed for reduction furnaces, and obtained the results wanted.

The system is now in one full-scale operation, will probably be applied to the whole plant. It is claimed that bottle retorts can be loaded faster, that "pagodas" will not stick in dry-pellet charged bottles because small pellets retain their shape throughout the cooking process as magnesium is drawn from them, that dry-pellet crystals produced have shown a distinct tendency to be exceptionally thick and solid without finery crystals characteristic of the wet process, and that loose residue from the cooking is easier to remove from the bottles.—Wall Street Journal.

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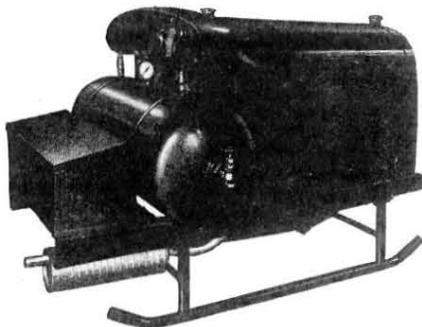


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new operator intends to thoroughly recondition the mill and install selective flotation units in order to make the best possible recovery from the zinc, lead, and copper ores that occur in the Chloride and Cerbat mining districts.



With preliminary arrangements having been completed, it is announced that concentration of dump material has been started at the Tungstore mine south of the Jack Ranch near Porterville, Tulare County, California. A power shovel and several trucks have been moved in by the Los Angeles firm handling the contract. Mining at the Tungstore was suspended several years ago and the owners have been engaged in developing tungsten property north of the Tungstore. Some attempt to develop new ore is being started and several truckloads of the best ore found in several small ledges are being hauled to Porterville for shipment to milling plants. If this operation proves profitable, mining may be resumed on a small scale.

The B. C. Mines recently made a shipment of ore from its property which brought a gross return of \$1,070. The ore ran 62.24 per cent WO_3 and was taken from the drift. The company's mine is located about four miles south of Tehachapi in Kern County, California. R. D. Carse, Box 214, Tehachapi, is understood to be spending several weeks prospecting other parts of the property, using a dry washer of his own design, and it is expected that this work will be continued until rainy weather sets in. A reorganization of the company was effected this spring, Carse having bought out the E. P. McMillen interests. Carse is general partner and Vernon Bettin continues as limited partner.

The Marble Tungsten Company is reported to be producing an average of 35 tons of ore daily from its Stolle magnetic separation mill. Three shifts a day are working at present. The tungsten property is near Bishop in Inyo County, California, and is being worked by Robert W. Kelso, Box 728, Bishop, who recently purchased the interests of A. H. Peterson and John Utter, both of Bishop.

According to reports, a ledge, carrying rich values in copper, silver, and gold has been discovered at the Lakeview mine six miles east of Auburn, California. The new development tunnel at the property is being extended toward the main vein, which is said to sample \$17 per ton in gold, 10 per cent copper, and some silver. Work is directed by Lewis F. Johnson, Auburn, owner, and the operation is being carried on under the name of Lakeview Copper Mine, with main offices at 901 Shreve Building, San Francisco, California.

Guy Matson and Fred Wickstrom, both of Quincy, California, are making shipments of asbestos from deposits in the Nelson Point district in Plumas County, California. The ore is said to bring \$400

per ton and is transported by pack animals about a mile to the nearest road, and then trucked to the railroad siding. The deposit was discovered while development work was proceeding on the adjoining ground.

The Seiad Graphite Company is expected to start production as soon as the new plant has been completed. The company is opening an extensive graphite prospect near Yreka in the Seiad Valley district of California. It is reported that preliminary examination work has uncovered high-grade ore and a development program is planned. The company's property comprises nine claims, covering about 180 acres of ground.

J. G. Long of Callahan, California, has reported the discovery of a promising graphite deposit near Callahan in Siskiyou County, California. The claims are said to contain a graphite dike 65 feet wide and tests have indicated a substantial tonnage of high-grade material. Long expects to start development in the near future. He also has asbestos and talc holdings in California.

James W. Riley, Bass Lake, California, has reported sale of his Chuckawalla mine in Riverside County, California, near Desert Center, to Indio, California, interests. The new operators are reported to have opened a high-grade scheelite deposit near the surface in the main shaft. It is expected that they will ship scheelite spuds to Parker, Arizona.

Eric Enlund of Forest, California, is engaged in reopening the old Mugwump mine situated near Forest in Sierra County, California. Main operations consist of rehabilitating the Mugwump tunnel. The Mugwump was a gravel property when it first was mined in 1852. At 1,700 feet from the portal of the tunnel, a well-defined quartz ledge was encountered and followed for a distance of 600 feet. Later, a shaft was sunk on the ledge to a depth of 235 feet. At present, it is reported that Enlund has the tunnel opened to within 200 feet of the shaft, which he plans to unwater. Operations have been slowed down so far because of the difficulty in obtaining power.

The Newmont Mining Corporation is reported to be making regular shipments of copper-gold concentrates from the Gray Eagle mine to the smelter. The property, which is near Happy Camp, California, recently underwent a \$1,000,000 rehabilitation, development, and equipment program, started by Newmont early in 1942 when the property was reopened after a long period of idleness. Improvements include a four-mile tramway to Thompson Creek, north of Happy Camp, for the transportation of concentrates. Charles F. Ayer, 14 Wall Street, New York, New York, heads the Newmont Mining Corporation. Robert J. Hendricks, Happy Camp, is general manager of the Gray Eagle.

Gold-silver ore, assaying \$41 per ton, has been uncovered by Paul Taylor, Placerville, California, at the Buzzard mine, nine miles east of Folsom. The strike was made in the footwall south of the shaft. The Buzzard has produced considerable copper and zinc and a stringer of high-grade four inches wide is reported showing. The prop-

erty is developed by a 300-foot shaft and drifts extended from four levels. Prospects for development of shipping-grade ore, containing values in copper, gold, silver, and zinc, are said to be favorable. The mine, which formerly was worked by G. M. Trent, Auburn, California, is being operated under lease by Taylor.

The Powhatan Mining Company of Baltimore, Maryland, has been engaged recently in sampling promising asbestos deposits in the Happy Camp and other mining districts of California. The company is said to be aiding claim holders in mining samples and testing prospects, and several commercial deposits have been located in the vicinity. The Oro Fino Consolidated Mines, J. C. KempvanEe, 381 Bush Street, San Francisco, general manager, is the purchasing agent for the Powhatan concern in California. Work is under the direction of D. T. Tracy, Pasadena, California.

The Atolia Tung-Sun Mining Company is reported to have started milling operations September 3, at its new plant near Randsburg, California. A defective bearing in the pump had necessitated a delay of a few days and minor adjustments of the deck riffing on the large concentrating table are to be made. The plant will handle gravel from the company's tungsten claims near Randsburg in the Stringer mining district of California. During normal operations a crew of about eight men will be employed under the direction of William Bickel, Box 254, Randsburg, superintendent. The company is a co-partnership headed by Ray Schweitzer, general partner of Los Angeles. A. F. Muter, Box 304, Randsburg, is engineer and general manager.

The Laco Mining Company has reported a high-grade vein of ore at its Guadalupe mine near Los Gatos, California, and is said to be mining a better grade of quicksilver ore. Production has nearly doubled during the past four months. A drilling program was conducted at the Guadalupe recently by the United States Bureau of Mines and it is hoped that future improvements will include the installation of a new furnace plant at the site. Work is directed by Howard E. Meade, general superintendent. H. N. Mason, Route 3, Box 412, Los Gatos, is president of the operating company.

A lack of sufficient employees is said to be slowing up output at the quicksilver property of the New Almaden Corporation about 13 miles southwest of San Jose, California. The company has reported that at least twenty muckers could be used at the mine. F. Eugene Newbold, 1515 Locust Street, Philadelphia, Pennsylvania, is president of the New Almaden company and C. N. Schuette is general manager.

Herbert J. Kelm, Snelling, California, is shipping three truck loads of manganese ore weekly from the Caldwell mine in the Granite Springs district of California, seven miles west of Coulterville, Mariposa County. It is understood that assays have shown the ore to contain 51.81 per cent manganese oxide, 6.7 per cent silica, 2.34 per cent aluminum, and 1.79 per cent iron. Kelm operates the mine under lease agreement.

Thomas Reynolds, Davis, California, recently shipped the first car of ore from his manganese mine about 25 miles from Platina, California. Reynolds has been interested in the mine's development for the past four years and during that time two miles of access road have been completed and a camp and cook house built. Ore is hauled by truck 69 miles to Anderson, the Southern Pacific shipping point. Four men are being employed.

It has been announced that the mining equipment of the Carson Hill Gold Mining Corporation is being liquidated by the Clinch Mercantile Company of Grass Valley, California. The Carson Hill concern formerly operated gold property near Melones, California, but was forced to close down after the WPB gold order last year.

However, a skeleton crew had been maintained to keep the mine unwatered. Lawrence MonteVerde, Melones, is vice-president of Carson Hill.

A crew of 25 men is being employed by the Lava Cap Gold Mining Corporation in salvaging materials from the Banner and Central shafts of their gold property near Grass Valley, California, for use in their strategic metal mining operations. Ten mechanics and machinists are reported to be working in the machine shops at the Central mine under government contract. The Lava Cap concern is centering most of its work at the Keystone copper mine near Copperopolis, California, and has been moving in new equipment in order to step up production. The company also has installed machinery at the Scott lead-copper



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property near Nevada City and has a diamond drilling program under way. Otto E. Schiffner, Nevada City, is general manager.

Francis J. Sing, Auburn, California, is reported to be starting mining operations at chrome property in Trinity County near Hayfork, California. The mine, which is held under lease by Sing, is reported to have been a good producer during the first World War.

COLORADO

The Strategic Metals, Inc., has been organized by a group of Pueblo, Colorado, men headed by Jack R. White of Pueblo. The company has filed on placer rights to 571 acres in Gunnison County. Most of the property is in the Domingo mining district, the remainder being in the White Earth district. Values are in vermiculite. White has been interested in the Powderhorn area, which embraces the Domingo and White Earth districts, for a number of years.

Plans are being made for the early installation of a small smelter to handle ores from the Lucky Boy zinc mine in Gunnison County near Marble, Colorado. William Jessen is president of the operating group and Louis Jessen is superintendent of operations at Marble.

High zinc values are reported from the Ben Harrison-Croesus property in the Trail Creek district near Georgetown, Colorado, which is being operated by George Calloway, R. M. Calvert, and John and Jack Mollard, all of Idaho Springs. The two properties are adjoining and are worked through a 280-foot shaft. Ore is sent to the Clear Creek-Gilpin custom plant at Idaho Springs.

Milling operations are being put on a 24-hour basis by the Wilfley Leasing Company, Kokomo, Colorado. The company has been shipping 300 tons of zinc concentrates, 300 tons of iron concentrates, and 50 tons of lead concentrates each month and with the new schedule production will be doubled. Jack J. Walsh, 633 U. S. National Bank Building, Denver, is president and Charles G. Blaha, Kokomo, is general manager and engineer. Besides newly mined ore, the company has an estimated 70,000 tons of zinc ore on three dumps, left by former operators. About 40 men are employed, including 14 soldier-miners released by the government.

Walter Byron of 768 Ogden Street, Denver, Colorado, is operating the Queen of the West and Wintergreen-Jones groups of claims in Summit County near Kokomo, Colorado. Values are in zinc and lead. In the same area J. B. Ross and associates have started work on the old Kimberly mine.

The Mile High Mining Company is continuing production from all five levels of its Smuggler mine, treating the ore in the Silver Leaf mill which it holds under lease. Located near Silver Plume in Clear Creek County, Colorado, the mine and mill afford



employment to about 20 men. George Rowe of Silver Plume is mill superintendent and Jack Nelson, Silver Plume, is manager.

J. B. Ross, E. and C. Building, Denver, Colorado, and associates are reported to have purchased the Lackawanna mine and 100-ton mill in San Juan County near Silverton, Colorado, from George G. Wagner of Telluride. The property is on Kendall Mountain and has not been very active in recent years. Old workings will be cleaned out and retimbered and development will be carried into untouched areas in the property. The mill, installed in 1928, will be rehabilitated and some new equipment will be added.

A regular quarterly dividend of 30 cents a share and an extra dividend of 20 cents a share has been declared by the Climax Molybdenum Company, 500 Fifth Avenue, New York 18, New York. This will total \$1,260,000 and is payable September 30 to stockholders of record September 21, 1943. Operations at Climax, Colorado, are being pushed beyond rated capacity.

Production is being continued from the Little Corporal mine on Gibson Hill in Summit County near Breckenridge, Colorado. B. F. Howell of Breckenridge is the operator of the property and he also leases the 20-ton Jumbo mill, which he recently revamped. Principal values are in gold. The mill treats some of the production from the Jumbo mine in the same area, which is being worked under lease by A. J. Button of Breckenridge. Jumbo ore is said to carry chief values in gold, with some lead and silver, and shows a trace of scheelite. Every two weeks Button ships to the Leadville smelter. The Jumbo mine and mill are controlled by Jumbo Properties, Inc., which is backed by Edward L. Knight and William G. Krape, 708 Colorado Building, Denver.

IDAHO

The Glacier Silver-Lead Mining Company is continuing tunnel operations in its silver mine in Owyhee County, Idaho, near Jordan Valley, Oregon. The tunnel is in 200 feet and is expected to reach the ore body within another 100 feet. This will open the ore at a depth of about 300 feet. Charles J. Weller of Coulee City, Washington, is president of the company and F. W. Kiesling, 607 Washington Trust Building, Spokane, is secretary-treasurer and manager.

A crew of 80 men is employed by the Callahan Zinc-Lead Company at its Deadwood Unit at Cascade, Idaho. Capacity

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HOW FAR DOES A FIRE ENGINE GO?

E. R. Cavender, head of the Fairbanks, Alaska, fire department provides this inside story of the troubles of a fireman. We don't mean trouble in putting out fires—he's trained to do that and it's routine. No, we mean troubles in complying with federal rules, operating efficiently, and still keeping sane. It's a foregone conclusion that that program is an impossibility, but any one with a drop of sporting blood in his veins will try. Anyhow, Washington hasn't learned that there is no gasoline rationing in Alaska. (Heaven help the Alaskans when this fact penetrates the Washington fog!) So a questionnaire was sent to the Fairbanks Fire Department and, even in the light of present federal questionnaires, it is a pip:

"How many runs do you expect to make?"

"How much gasoline do you anticipate using?"

"How many miles do you expect to travel?"

The fire department in Fairbanks, and elsewhere, will answer those questionnaires, keeping a straight face, of course, as soon as the Wonderful Wizards can tell them how many splinters there are in a piece of wood.

REPORT ON NEED OF CUSTOM MILL IN CHLORIDE DISTRICT

ELGIN B. HOLT, field engineer for the Department of Mineral Resources, has made a comprehensive report on the potential tonnage available for a custom mill in the Chloride district of Mohave County, Arizona. The report indicates that there is a need and justification for such a plant in the district and that there is a substantial potential tonnage of ore available to furnish mill feed.

Holt has made a survey of 12 mines located in the area whose owners are desirous of arranging custom milling facilities. These mines, according to the survey, would be capable of providing a daily mill feed of 345 tons and have a probable total tonnage of 143,535.

The Chloride district has an area of approximating 250 square miles of highly mineralized ground, within which are located over 100 mines that have produced paying ore in varying tonnages. In recent years the district has not been extensively developed, due to the fact that private financing has not been available and that there was no market for ores. The RFC will make mining loans for exploiting known ore bodies, the report states, but refuses to advance money for purely exploratory purposes.

Holt expressed the belief that if a custom mill were available, owners of many other mines in the area could be induced to begin operation of their properties.

LEAD-ZINC-COPPER SURVEY MADE OF NEW MEXICO DISTRICT

A DESCRIPTION, with maps, of the Organ district in Dona Ana County, New Mexico, recently prepared by C. C. Albritton, Jr., and V. E. Nelson of the United States Geological Survey, discloses that the area, which has been active nearly a century, has produced about 15,000,000 pounds of lead, 4,000,000 pounds of copper, and almost 1,000,000 pounds of zinc.

Indicated reserves for the district have been placed at approximately 23,000 tons of ore containing 1 to 3 per cent copper and 3,800 tons of ore containing from 10 to 15 per cent zinc. It is announced that neither the report nor the maps will be published at present, but they have been placed in the open files of the office of the Geological Survey at Salt Lake City, Utah; Rolla, Missouri; and Washington, D. C., where they may be consulted by anyone interested in the district.

NEW PURCHASING DEPOT IN SOUTHERN ALASKA

A METALS sampling and purchasing depot has been established by the government in the lower Cook Inlet country in Alaska. Leo Saarella, assayer of the Territorial Department of Mines and in charge of the Anchorage office, supervised the new installation.

B. D. Stewart of Juneau, commissioner of mines for the territory, is purchasing agent for the Metals Reserve Company and as such has been buying tin, tungsten, and antimony. The purpose of the new depot at Cook Inlet is to handle chrome ores from the region. Other purchasing depots were established earlier at Nome, Fairbanks, Ketchikan, and Anchorage.

COLUMBIA STEEL OPENS NEW CALIFORNIA FOUNDRY

THE Columbia Steel Company has completed and put into operation its new foundry at Pittsburg, California, according to company officials. The new plant, located on property adjacent to the company's Pittsburg works, was constructed at a cost of more than \$6,000,000 by the Defense Plant Corporation. The government has contracted with Columbia Steel to operate the new unit for the duration of the war.

Under full capacity it is expected that the plant will produce approximately 30,000 tons of steel castings annually. At the present time, however, it is believed that the shortage of skilled employes and the delayed delivery of equipment will hold up regular production for several weeks.

Columbia Steel's output at the Pittsburg foundry will be used principally by the United States Navy and Maritime Commission. Facilities of the new plant include two 25-ton basic open-hearth furnaces. A six-ton electric furnace has not as yet been delivered. Finished products at the plant are moved by cranes and it is understood that 18 electric cranes service the foundry.

Columbia Steel Company, a subsidiary of the U. S. Steel Company, is headed by W. A. Ross, Russ Building, San Francisco, California.



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STATE AND STOCKHOLDERS LOSE WITH HOMESTAKE

WARTIME economy, which has increased the prosperity of many groups and businesses in America, has cost the stockholders of the Homestake Mining Company of Lead, South Dakota, nearly \$7,000,000 in reduced dividend payments, estimated net profits of the company for 1943 reveal.

Net profits of the company for 1943 are expected to be only \$304,000, or 15 cents a share, compared to \$5,682,999 or \$2.83 a share during 1941, the last full year in which the company's gold mine at Lead was operated at normal capacity. Added to the 1943 loss of \$5,378,999 in dividend payments is a loss of \$1,266,677 in 1942 when net profits totaled \$4,416,322 or \$2.20 per share.

Closing of the gold mines by the War Production Board in an attempt to provide workers for the mining of more essential minerals is responsible for the sharp slump in the company's earnings. All gold mining operations at Lead were terminated in June of this year. Only partial operation to complete milling of broken ore had been permitted following the WPB order in October 1942.

Net profit for the first half of this year, during which the broken ore was milled, was \$1,504,043, equal to 75 cents a share, but because the mine is not in operation during the last half of the year, a total of \$1,200,000 for depreciation, property taxes, and maintenance costs for the entire year must be allowed against the first half profit, cutting the net profit for the year to about \$304,000.

Higher grade ore than usual was processed by the company this year, ore tax reports to the state treasurer revealed. The average value per ton of ore processed during the second quarter of 1943 was \$22.43, compared to \$13.24 a ton for the last quarter of 1942.

Eight hundred of the company's employees, which totaled more than 2,000 before mining was curtailed, are still employed by the mining firm in maintenance work at the mine and in essential work in the foundry at Lead and the lumber mill at Spearfish. The company hopes to be able to keep these 800 as a nucleus with which to build a new gold mining crew, when gold mining can be resumed.

Closing of the mine has deprived the South Dakota state treasury of about \$1,000,000 in revenue from the 6 per cent ore tax. Payments by the company in ore taxes to the state this year have totaled \$98,929, compared to \$1,200,000 in 1941. This source of revenue will disappear entirely next year unless the mine is permitted to resume operations.

As a contribution to the war effort, Homestake is making an effort to produce essential minerals. A small quantity of tungsten ore has been sold to the Metals Reserve purchasing depot in the Black Hills and work has been started on a vanadium property in western Wyoming and a manganese deposit in Lower California by the Wyodak Coal and Manufacturing Company, a Homestake subsidiary. The tung-

sten ore was taken from the old Hidden Fortune mine which has been closed for many years. A large part of the output of the company's saw mill and coal mine is also being diverted to defense uses.

IMPROVEMENT IN METAL SUPPLY IS INDICATED BY WPB ACTION

SEVERAL changes in metal classifications, made this month by the War Production Board, indicate an improved supply situation for some of the basic metals. Zinc and aluminum were moved from the strategic metals Group 1 (supplies insufficient for war demand) to Group 2 (supplies sufficient for war.) Mercury was dropped down to Group 3, which indicated that the supply was in excess of essential needs. Lead has been in Group 3 for some time.

Copper remained in Group 1, although a report of the United Nations combined committee asserted that war needs for the red metal were about in balance with supply.

It was pointed out, however, that none of these changes meant lifting restrictions on use of these metals or that any of them soon would be available for general manufacturing.

BUREAU RESUMES DRILLING OF TUNGSTEN METALS GROUND

THE Bureau of Mines recently resumed diamond drilling on the property of the Tungsten Metals Corporation in the Minerva mining district of White Pine County, Nevada. The property has been one of the established tungsten producers, having a record of continuous production since 1936. The bureau drilled a number of holes in a pilot drilling campaign in 1940 and 1941. The present program is a continuation of the previous campaign.

The pilot holes now being drilled are partly for the purpose of testing for deeper extensions of certain ore shoots and some of them will be drilled at considerable distances from the known or indicated ore shoots for the purpose of exploring undeveloped areas on some portions of the vein system. A number of the holes are intended to intersect the

FLUE DUST ON OIL-BURNERS YIELDS VANADIUM VALUES

Ever go mining in a fire box or boiler of a large ship? It's being done nowadays. Flue dust is being scraped from oil-burning American merchant vessels, packed in bags, and sold to the highest bidder. The bidder is permitted to make an analysis of the dust before bidding. And the net result of the whole procedure is more vanadium for the war effort.

Oddly enough, vanadium values are found only in flue dust from oil-burning engines, never from coal-burners. Also, the vanadium is present in greater quantities if the vessel uses oil originating in California or Venezuela. Oil from the eastern or southern wells in this country contains very little vanadium.

vein as deep as 700 or 800 feet below the surface outcrops.

Ores from the property are treated in the Tungsten Metals Corporation's 100-ton gravity-flotation plant. Paul J. Sirkegian of Kimberly, Nevada, is president and manager of the property. At Shoshone, where the mine and mill are located, Harold Dunham is in charge of all mining operations and William B. Trent is mill superintendent.

SAN FRANCISCO CHAMBER GOES ON RECORD IN SUPPORT OF GOLD

THE San Francisco Chamber of Commerce has initiated a campaign advocating the use of gold and its free exchange as a monetary standard in any international currency stabilization plan to be supported by the United States, and a resolution to that effect has been adopted. The current action in behalf of gold was taken by the chamber because of its concern over various aspects of the international situation and with a view to the postwar period when a sound world economy will be essential to peace and progress.

According to the Chamber of Commerce, "Some agencies, national and otherwise, are seeking to minimize the importance of gold in the world economy, but the efforts of the victors in World War II will have been futile unless they result in a healthy world economy and means to facilitate world trade. The stabilization of the currencies of the world will be essential to a wholesome world economy and international trade, and the soundness of a world monetary standard will measure the success or failure of any stabilization plan."

While the organization at the moment is concerned primarily with prospective international problems, it is cognizant of the fact that California will probably produce less gold in 1943 than in any year since 1848 as a result of the gold mine closing order issued by the War Production Board. So far this year, gold production in California has averaged about \$446,000 a month, whereas production in 1942 was over \$29,000,000; in 1941 over \$49,000,000, and in 1940 nearly \$51,000,000. Before the war effort was intensified, there were approximately 1,559 placer operations and lode mines in the state.

In addition to the resolution relating to monetary uses of gold, the chamber has presented a resolution to the War Production Board, requesting amendment of the gold limitation order (L-208) to allow gold mining companies to operate sufficiently to derive enough income to meet carrying charges. If this request for amendment of the order is not granted, legislation to permit operation of the companies to a degree sufficient to meet carrying charges may be requested. Inasmuch as it will not be practical for some companies to meet carrying charges out of limited operations, the chamber hopes that the Reconstruction Finance Corporation may make loans available to companies which can give security in order that they may meet their carrying charges and be in a position to operate after the war,

again contributing to the general economy and affording postwar employment.

According to Ernest Ingold, president of the San Francisco Chamber of Commerce, no other industry, as such, has been so adversely affected in cooperating in the war effort, but he is hopeful that gold mining may make a strong comeback in the peaceful future.

RECORDS TO JUSTIFY WAGE DEDUCTIONS TO BE REQUIRED

EMLOYERS who make deductions from wages of their employes for "board, lodging, or other facilities," as these terms are used in Section 3(m) of the Fair Labor Standards Act, will be required to keep records substantiating the cost of furnishing such facilities under a proposed amendment to the record-keeping regulations, according to an announcement by the administrator of the Wage and Hour and Public Contracts Divisions of the U. S. Department of Labor. Such an amendment is necessary, the administrator stated, in order to clarify any confusion that may exist as to the employers' responsibility for keeping records to justify the reasonableness of such deductions from pay.

Under the proposed regulation, the employer is required to maintain and preserve accounts showing the nature and amount of all expenditures or other cost items entering into the computation of the reasonable cost of facilities furnished by him or by any affiliated person. Variations in accounting systems and methods of keeping records are to be permissible and no particular form of records are to be prescribed.

Determination of the cost of facilities furnished to employes is of importance under the Wage and Hour Act because where board, lodging, etc., constitute a part of the wages paid, the cost of these facilities must be included in determining the "regular rate of pay," which then is multiplied by 1½ to determine rate of pay for overtime.

"As an administrative measure," the administrator stated, "the division will continue to use certain practical tests as rough guides in determining whether the charges made by the employer exceed 'reasonable cost' within the meaning of the act and the regulations. A detailed cost analysis will be made in those instances in which it appears that the charges are excessive."

CONTROLLED REFERRALS TO FEATURE NEW WMC PROGRAM

PLACEMENT as well as departure of workers in essential occupations, will be controlled under the War Manpower Commission's broadened employment stabilization program which has just gone into effect throughout the western United States. The new program, through a plan of "controlled referrals," is designed to give to critical war industries the necessary man power to boost production to army-navy goals. The United States Employment Service, responsible for issuing statements of availability or referral cards to workers seeking new employment, will



work directly with all area labor-management committees of WMC.

While the national production urgency table will provide the basis for determining in which industry a man will be placed, local industries and their particular manpower needs will receive prime consideration. A priority list of firms will be set up, and workers having critically needed skills will be referred to the highest priority firm, or given their choice of firms needing these skills.

Workers who may be hired only upon referral of the USES include the following:

- (1) Those hired for work or from work in occupations designated as "critical" or "shortage" occupations by WMC.
- (2) Those hired for or from work in the nonferrous or lumbering industries. This includes mining, milling, smelting and refining.
- (3) Those who have not resided or worked in the locality of the new employment during the preceding 30 days.
- (4) Those transferring from agricultural to non-agricultural work for more than six weeks, subject to the approval of the War Food Administration.

Increased attention will be given to the worker who claims his highest skill is not being utilized. If he is upheld in his opinion by the USES, he may be referred to other employment utilizing greater war-production skill.

Backbone of the new localized plan will continue to be the issuance of availability statements. These will be issued only to a worker who has been discharged; laid off for seven days or more, who can prove he is working for substandard wages or under substandard conditions, or who can show his present employment entails personal hardships.

The program, however, also will tighten restrictions on availability statements, including a more thorough investigation of any reason, including health, under-utilization of skill and various others, for leaving a job or seeking a change of employment.

The representative rights of labor and management are unchanged, collective bargaining rights are unaffected, and the program empowers the U. S. Employment Service to release a worker hired contrary to the provisions of the plan.



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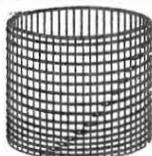
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ployment in the preceding year was set forth in a second directive to the company. James L. Fozard, Tiger, Arizona, is general manager of Mammoth-St. Anthony operations.



Substantial amounts of copper ore are being recovered from the large tailings dumps at the Union mining property near Copperopolis, California. Work is being conducted by the Pacific Mining Company and it is estimated that sufficient commercial ore is available to keep the company plant in steady operation for at least two years. The Union is an old property, having been operated first in 1861, and was at one time an important copper producer. The Pacific Mining Company is headed by P. R. Bradley, Jr., Jamestown, California.

The Oroville Gold Dredging Company is said to be working profitable gold placer property near Gridley, Butte County, California, operations being subject to government restrictions. W. H. W. Wandersford, 2052 Bird Street, Oroville, California, is general manager of the Oroville Gold Dredging Company's operations.

According to reports, mining of quartz crystals is proceeding satisfactorily at the Calaveras crystal mine of the Calaveras Crystal Company. The mine is located in the Chili Gulch district of Calaveras County, California, and was leased recently by the owner, R. P. M. Davis, 2356 Hollyridge Drive, Hollywood, California, to the Calaveras concern. Work is under the direction of Mervin Porteus of Mokelumne Hill, California.

Mining machinery and equipment have been installed at the Golconda chrome mine and development is well under way. Work is being done by means of a recently granted Reconstruction Finance Corporation loan and so far it is reported that exposed ore bodies run better than average in chrome values. The mine is located in the St. Charles district a few miles from Downieville, California, and is operated by Carroll Winrod, Hotel Golden, Reno, Nevada, and associates.

The Barker Corporation is continuing regular operations at its manganese properties in the Red Mountain mining district of California and to date, it is reported, the company has shipped 3,000 tons of manganese. The concern is leasing about 10,000 acres of land in both Santa Clara and Stanislaus counties in California, with main production coming from the Dead Oak mine. Barker Corporation formerly was a gold dredging company operating at Hornitos, California, but switched to strategic metal mining in January of 1942 when it took over the Salinas group. Glenn B. Bump, Box 696, Patterson, California, is president of the Barker company and Sumner Bump is vice-president and treasurer.

The Shoshone Mines, Inc., recently installed a 160-horsepower Chicago Pneu-

matic Diesel, direct-connected to a 125 kva. General Electric generator at its Death Valley lead mine in Inyo County, California. The company, which works several lead-zinc-silver properties in California, is headed by W. Buford Davis, 10600 Lindbrook Drive, Los Angeles, California, vice-president and general manager.

The Laco Mining Company is engaged in installing a \$60,000 furnace and reduction plant at its Guadalupe property near Los Gatos, California. Following a development program over a period of eight years, the company recently reported the discovery of a rich vein of ore on the 465-foot level of the old mine, justifying erection of the new plant. It is expected that the plant will be in operation sometime in November. Mine operations at the Guadalupe will be under the direction of P. D. Burt, Mills Building, San Francisco, California. Officials of the Laco company include H. N. Mason, Route 3, Box 412, Los Gatos, president; George Kirk, vice-president; and Howard Meade, secretary.

Reconditioning of the 250-foot shaft at the Amador scheelite property about four miles south of Grass Valley, California, is nearing completion. Exposed ore is reported to carry high values in tungsten and gold. The Amador property was leased last spring by E. S. Armstrong from the owners, D. W. Johnson, 715 Eleventh Street, Sacramento, California, and Etta S. James, Tonopah, Nevada. Frank Roberts is in charge of work for Armstrong, who may be addressed at 1200 Rives-Strong Building, Los Angeles 15, California.

Bruce E. Carroll of Randsburg, California, is reported to have sold a half interest in the Garlock mine near Randsburg to Walter T. Cunningham, who has interests in Atlanta, Georgia, and Wichita, Kansas. It is expected that Cunningham will start an extensive development program at the Garlock as soon as priorities can be obtained for necessary machinery and equipment.

The Lava Cap Gold Mining Corporation reports that it has increased its crew at the Keystone copper mine near Copperopolis, California, bringing the total number to 140 men. The company is said to be producing 500,000 pounds of copper monthly from the Keystone and it is hoped that that figure may be doubled by next year. The company also is operating the Scott lead-copper property near Nevada City, California, and has a diamond drilling program under way. Otto E. Schiffner, Nevada City, is general manager.

The Bradley Mining Company is lending equipment to Lake County for improving the road to the Great Western mine southwest of Middletown, California. The Great Western is a cinnabar property owned and operated by Bradley Mining. Worthen Bradley, 425 Crocker Building, San Francisco, California, heads the company, and F. A. Hammersmith, 920 Crocker Building, San Francisco, is purchasing agent.

The Idaho Maryland Mines Corporation is continuing regular maintenance work at its gold property near Grass Valley, California, and is reported to be employing only a skeleton crew. Pumping operations

are conducted continuously and all shafts are reported in good condition. Albert Crase, Grass Valley, is general manager of Idaho Maryland.

Another large gold mining concern, the **Empire Star Mines Company, Ltd.**, is undertaking production of strategic metal by-products at its Grass Valley, California, properties, along with regular maintenance operations. Empire Star has recalled a number of its former employees, but it is understood that the company is facing a labor shortage problem. John R. C. Mann, Grass Valley, is general manager.

COLORADO

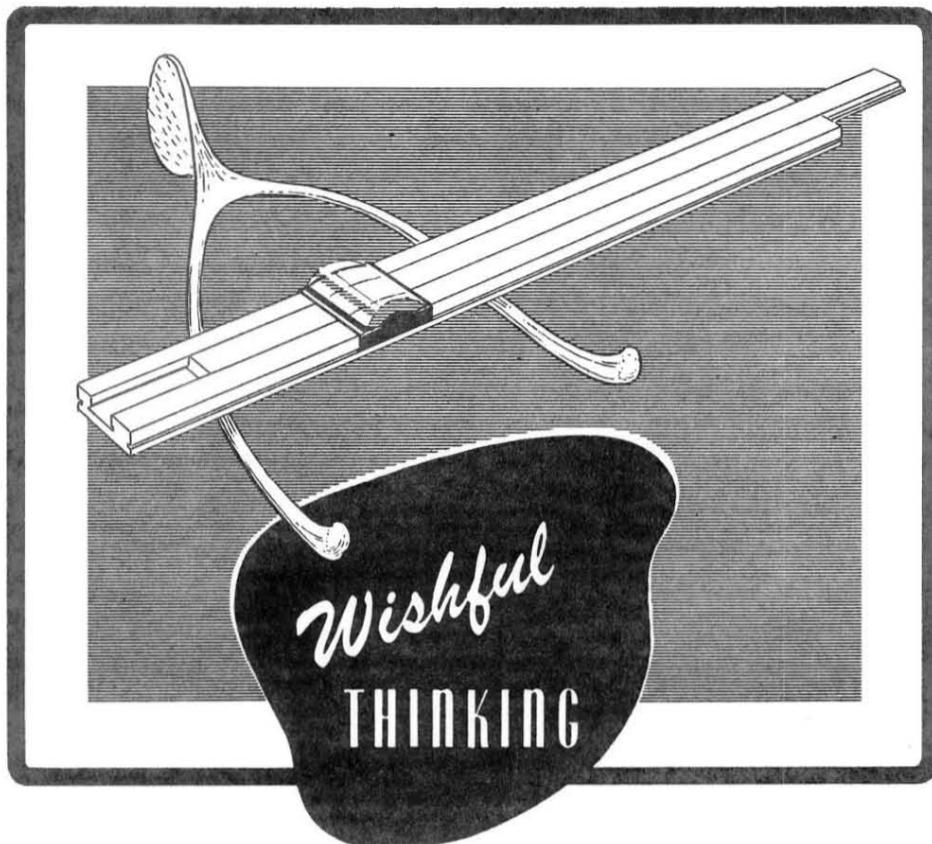
Employees of the **Vanadium Corporation of America** at Naturita, Colorado, are reported to have voted 54 to 19 in favor of joining the **United Mine Workers of America**. The group includes both mine and mill employees. The company operates a 75-ton mill at Naturita and mines near Placerville about 45 miles away. Robert Sterling, Box 299, Boulder, is western mine manager and Ralph S. Blitz of Naturita is general superintendent of operations in San Miguel and Montrose counties.

New equipment has been installed at the **Valley Forge** lead-zinc property north of Silverton, Colorado, and production will be started soon. J. E. Dresback of Silverton is manager of operations. The property is an old one that has been reopened on several levels.

According to reports, as of October 3 the **U. S. Vanadium Corporation** reduced production to half of the previous output at its vanadium mine and 200-ton mill at Rifle, Colorado. The curtailment released about 75 men who will be placed in more critical mines. Surplus stocks of vanadium are said to make the reduced program desirable. It is understood that no changes were undertaken at the company's operations at Uravan, Durango, or Grand Junction, Colorado. Clarence C. Sterns is superintendent at Rifle and Blair Burwell, 30 East Forty-second Street, New York, is general superintendent of all company operations.

Lead, silver, and zinc values in commercial quantities are stated to have been opened in a drift from a 35-foot shaft at the **Mineral Park** placer claim on Mount Bross near Alma, Colorado. Previously operated for placer gold, the property is being developed as rapidly as possible for its lead, silver, and zinc, and shipments have been started to the Leadville smelter. Equipment includes a compressor and hoist. A. E. Moynahan, 938 U. S. National Bank Building, Denver, is the engineer in charge.

Shipments are to be resumed shortly from a portion of the **Crow** mine of the **Wolf Tongue Mining Company**, being operated by Ed Yates and Ed Jones, both of Boulder, Colorado. The property is located in Boulder County. On the **Crow No. 18** Jack McKenzie of Nederland, Colo-



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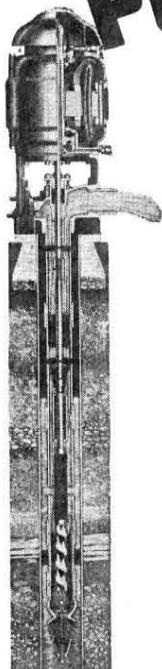
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The Marsman Company of America, which recently took over the operation of the Altoona mine, is said to be maintaining production at the rate of 30 flasks of quicksilver per month. As soon as the necessary development and rehabilitation work has been completed, it is expected that Marsman will double present capacity. A crew of 25 men is being employed at the Altoona, which is located about 24 miles west of Castella, Shasta County, California. Jesse Cuddyback is superintendent of operations and is addressed at the mine office in Castella. Head offices for Marsman Company of America are at 2504 Russ Building, San Francisco 4, California.

The United States Bureau of Mines is conducting an exploration program at the McCormick mine for the purpose of bringing the property into production. The McCormick is a chrome prospect located about 10 miles from Sonora in Tuolumne County, California. The Trebor Corporation has been developing it for some time, but has not made any shipments. Robert D. Mueller, Mariposa, California, is president of the Trebor firm. The Bureau of Mines work has been under the direction of District Engineer Spangler Ricker, 2530 Hilgard Avenue, Berkeley, California.

The Castella Chrome Milling Company, which has been operating since July 29 of this year, announced that during the first six weeks 10 carloads of 45 per cent chrome were shipped to the government stockpile at Sacramento, California. About 20 men are employed at the plant. Properties supplying the Castella mill include the Little Castle Creek mine, which is located near Dunsmuir, California, and is owned by the Little Castle Creek Company. Castella Chrome Milling Company is an affiliate of the Montrose Mining and Milling Company, which recently leased a number of chrome claims in the Dunsmuir area. J. M. Hoff is manager of operations for both the Castella and the Montrose firms. Ed Berger is in charge of the 100-ton Castella mill. Max Schmidt of San Mateo, California, is president of the Montrose Mining and Milling Company.

The Winston Copper Company is reported to have increased its crew to 33 men at its Newton copper operation about seven miles from Jackson in Amador County, California. The company has been operating in the mine workings above the 400-foot level. A recent examination revealed that the ore body extends downward from the 400-foot level and the company is starting to deepen the shaft from that level. Winston Copper has been maintaining production at the rate of five cars of ore every six days. Shipments are going to a Salt Lake City smelter. Wayne Loel, Subway Terminal Building, Los Angeles, California, is president of the operating company and work is under the direction of Hal M. Lewers, Auburn, California.

Dorothea Reddy Moroney, Yreka Inn, Yreka, California, is reported to have sold her Orleans mine to Dwight Pettigrew. The Orleans is a chrome property and is located near Orleans in Humboldt County, California. It is understood that the need for two miles of road to the McGuffey Creek chrome mine, another Moroney property, is holding up production. The road would cost about \$20,000. The McGuffey is in Siskiyou County, California.

The Tyson Chrome Mines, Ltd., is reported to have substantially increased output at its French Hill mine about 22 miles northeast of Crescent City in Del Norte County, California. The property has been in operation continuously since April 1941, with winter operations being restricted to development work. Improvement of the main road to the mine, which was completed this spring, is said to have made possible shipping of ore even in inclement weather. A large body of ore is reported blocked out, most of the material being of commercial grade. Tyson Chrome also works the Mountain View mine in Del Norte County, California. Benjamin C. Mickle, 406 Montgomery Street, San Francisco, California, is operator and manager of the Tyson project and John A. Noce, formerly of Sutter Creek, California, is superintendent in charge of production.

The Pacific Smelting Company, Torrance, California, recently was purchased by Jack Schwartz, who for the last 33 years has been connected with the Federated Metals Corporation, a unit of the American Smelting and Refining Company. It is understood that more than \$100,000 was involved in the transaction. Schwartz recently resigned from the American Smelting and Refining Company and will maintain offices in San Francisco in the future. So far the Pacific Smelting plant has been the only operating zinc residue plant west of Chicago, and under the new management it is expected that the unit will produce copper and zinc sulphite, as well as enter the nonferrous residue field generally. Jack Schwartz' son, M. D. Schwartz, has been named manager of the Pacific Smelting plant.

The Tungsten City Milling Syndicate, Ltd., is treating tailings which were run at the old Standard mine near Bishop, Inyo County, California, during the last war. It is estimated that the tailings dump contains about 500,000 tons and the company expects to keep its two mills in operation for at least three years. The Tungsten City firm has been operating at the Tungsten City mine about one mile northeast of the Standard for the past three years. Operations are under the direction of A. L. Crowthers, Box 145, Bishop, California.

An access road is being constructed to the Lead King Mines, situated in the northwest corner of Death Valley in the Panamint Mountains of California. The owners and operators of the property, George Lippincott and two sons, George, Jr., and Dick, report that poor transportation facilities have compelled them to follow selective mining methods, with ore averaging from 40 to 63 per cent lead and 35 ounces of silver. Ore has been

hauled a distance of 100 miles to Goldfield, Nevada, the nearest shipping point. With the new road, however, it is planned to ship from Keeler, California, a distance of 50 miles from the Lead King, making it possible for the operators to start shipping from a claim which has approximately 50,000 tons of 30 per cent lead ore blocked out. All ore has been shipped to smelters in Utah. The Lippincotts have an established mining camp and have been working the Lead King property for the past year. Nine men are being employed. The mailing address for the company is Box 1811, Santa Ana, California.

According to announcement, the entire deposit of tungsten ore at the **Yosemite Tungsten Project** will be mined and shipped before the winter storms start. The deposit is not extensive, but the ore is said to be of a high grade. The Yosemite project is located near Dorothy Lake in Yosemite National Park, California, and mining is by open-cut methods. John A. Burgess, formerly general manager of the Carson Hill Gold Mining Corporation, Melones, California, is in charge of work for the Metals Reserve Company.

H. V. Underwood, Hollister, California, has been conducting leaching operations, recovering copper from sulphate ores, at the **Antelope** copper mine in San Benito County, California. Considerable development work has been completed at the mine, including the driving of two tunnels, one 70 feet and the other 40 feet in length. The ore body is believed to be from 16

ADVANCE AND BE BITTEN

The army has thrown a rather powerful guard around vital areas and installations at Basic Magnesium, Inc., and it ill behooves any one to loiter around those places, even with the most innocent intentions. Two Great Danes, four Dobermans, and three German Shepherds, trained as attackers and defenders, are on duty. The army gives one of the Great Danes a jaw-power rating of 900 pounds to the square inch. And that hurts!

to 18 feet wide, and at present it is said that there are from 25 to 40 tons of high-grade ore in the drifts. The Antelope is owned by Underwood, E. A. Mathews, both of Hollister, and A. S. Pearce, San Juan Bautista, California, and has been under lease to R. R. Stevenson, Box 1684, Richmond, California.

Announcement has been made by the **Rand Gold Dredging Associates** that the Yuba Manufacturing Company of San Francisco, California, has completed the righting of the Rand company's dredge at Randsburg, California, following two months' work. The dredge tipped over June 10 with five men aboard. The Yuba company has been engaged in replacing equipment which was removed to permit righting the dredge. M. E. Howard, Box D, Randsburg, is superintendent of operations for the Rand Gold Dredging Associates, and Newton Cleaveland, 351 California Street, San Francisco, California, is consulting engineer for the project.

Geologists of the United States Geological Survey have completed a study of the **Meek-Hogan** tin prospect located in Kern County, California. The work was directed by Lincoln H. Page of the USGS. Copies of the survey, including a topographic and geologic map and cross sections, have been filed in the survey's offices at Washington, D. C.

Cordull Durrell and T. P. Thayer of the United States Geological Survey recently completed a study of the quartz crystal mine of the **Calaveras Crystal Company**. The work was done as part of the USGS program of investigation of the domestic sources of quartz crystals. The mine, formerly known as the Green Mountain, is located in the Chili Gulch district of Calaveras County, California, and is reported to have produced 12 tons of crystals during the years 1897 and 1898. The property has been operated intermittently since 1900, and was leased recently by R. P. M. Davis, 2356 Hollyridge Drive, Hollywood, California, to the Calaveras concern, F. M. Zinck, Stockton, California, president. Mervin Porteus of Mokelumne Hill, California, is in charge of work. Davis made the first shipment of crystals to the Metals Reserve Company at Washington, D. C., in July of this year.

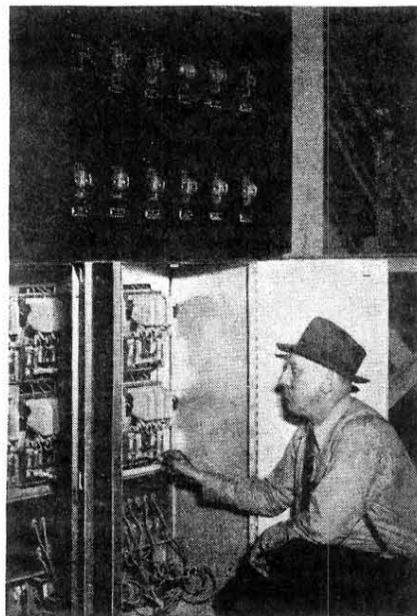
Another mine examined by the USGS geologists is the **Rough Diamond** crystal property near Mokelumne Hill, California. The Rough Diamond, originally worked for gold, now is being operated by E. C. Setzer, 1125 Marengo Avenue, South Pasadena, under lease from the owners, John

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J. and Thomas McSorley, Mokelumne Hill. The old workings were reconditioned, the shaft retimbered and enlarged, and preparations completed for development of virgin territory when the property was reopened last fall after a shutdown of 75 years.

Regular milling operations are being carried on at the **Gold Basin** 50-ton gravity concentration mill in the Randsburg district of Kern County, California. Custom tungsten ores from the district are being handled at the mill, as well as the production from the Gold Basin property. Three men are working in the mine and two are employed in the mill. The milling plant was rehabilitated recently by means of RFC funds. Clarence A. Barker, Red Mountain, California, is owner and operator of the Gold Basin and James B. Nosser is general superintendent.

The **Belmont Osborn Gold Mining Company** is reported to have started extensive development work at its **Hastings** mine on the east side of the Sulphur Springs Mountain in the Sulphur Springs mining district of Solano County, California. The quicksilver property recently was leased by the Belmont Osborn company and the new operating concern plans to install modern retorting equipment when development work is under way. Principal workings include a 1,100-foot tunnel, and there is reported to be a total of 2,200 feet of tunneling on the mining property. The Hastings first was operated in the 1870's and was a good producer during the last war.

Development work is said to be progressing satisfactorily at the **Aetna** quicksilver mine near Aetna Springs in Napa County, California. Ventilation has been improved by drilling holes from the surface to the No. 9 tunnel, which had been driven 4,000 feet by former operators. The new operating company is the **Basin Montana Tunnel Company**, which works the property under lease agreement with the Metal Mining Exploration Company. Allan A. Ryan, 1 East Fifty-seventh Street, New York, New York, is president of Basin Montana, and the Metal Mining group is headed by John A. McDonald, 912 Russ Building, San Francisco, California.

The **Cal Oro Dredging Company** is reported to have changed its headquarters to 826 Thirty-first Avenue, San Francisco, California. The company, which carried on dredging operations for many years in the Yreka, California, district, is headed by Lawrence Gardella, president and general manager.



The **Wolf Tongue Mining Company** is unwatering portions of the Tenderfoot mine which lies between the company's Cold Spring and Western Star mines near Nederland, Colorado. The latter property is still active but the Cold Spring mine, the company's original producer, has been

exhausted. Core drilling and bulldozing operations are being carried on in the Cold Spring area in an effort to develop new producers. The company's 25-ton mill is being operated one shift, but a second shift would be put on if the manpower were available. About one carload of concentrate is shipped each month. William Loach, Box 25, Boulder, is vice-president and general manager. Besides company operations, a number of lessees are engaged in production and development work on company ground.

A dividend of 25 cents a share on common stock has been declared by the **Vanadium Corporation of America**, 420 Lexington Avenue, New York. Like amounts were paid by the company in July and April of this year, though in 1942 only one dividend, also 25 cents, was paid in May. Western operations are in Colorado, Arizona, and Utah, and are under the management of Robert Sterling, Box 299, Boulder, Colorado.

Seven hundred feet of tunnel work is reported to have been completed at the **Highland** property on Griffith Mountain south of Georgetown, Colorado. The Laudermilk brothers of Idaho Springs are prospecting the ground, tunnel work having been done under contract by Reub Morris.

A. M. Poston of Canon City, Colorado, and associates are planning to sink a new shaft in the **Lady Franklin** mine near Silver Cliff, Colorado. Other development work also is planned. A crew of 16 men, working two shifts a day, is producing 40 tons of lead-zinc-copper ore.

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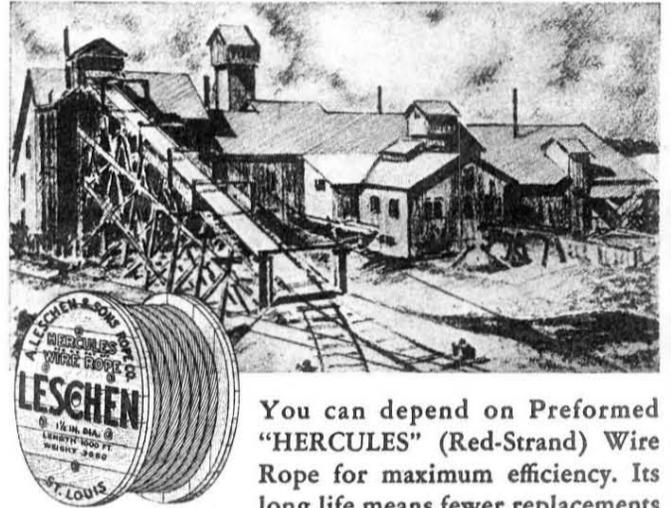
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HOUSING AUTHORITY COMPLETES CONSTRUCTION AT MINING CAMPS

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According to the Federal Housing Authority, the construction of these units "involved some of the most difficult problems encountered under the war housing program on account of the virtual inaccessibility of the mountainous sites, and the rigorous winter weather. At some of the sites, the temperature drops to 40 below zero and the ground is frozen to a depth of six feet."

ADJUSTMENT BOARD FORMED BY GOVERNMENT AGENCIES

FORMATION of a Joint Price Adjustment Board to exercise certain authority now exercised by the individual agencies renegotiating war contracts is announced by the War, Navy, and Treasury departments, the Maritime Commission, and the Reconstruction Finance Corporation for its subsidiaries subject to the renegotiation statute.

The establishment of the joint board provides a formal procedure in place of the informal procedure which has been followed by the individual price adjustment boards since their establishment and the relationship which has been maintained between them in such matters as the adoption and publication of joint statements of purposes, principles, policies, and interpretations.

The secretary or head of each of the departments or agencies engaged in renegotiating war contracts under the renegotiation statute has delegated authority and discretion to the joint board as follows:

(a) To formulate and adopt statements of purposes, principles, policies, and interpretations under the statute which shall be binding on the departments.

(b) To define, interpret, and apply by joint regulation the exemption specified by the statute relating to the product of a mine, oil or gas well, or other mineral or natural deposit, or timber.

(c) To exempt from some or all of the provisions of the statute general classes or types of contracts, and to formulate standards for the exemption of such contracts.

(d) To determine whether any contractor shall be required to renegotiate for any fiscal period the contract price under some or all of his contracts subject to renegotiation under the statute.

(e) To assign any contractor to any department for determination whether excessive profits have been or are likely to be realized from some or all of its con-

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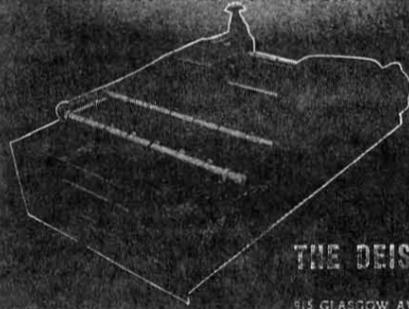
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**CUSTOMS ASBESTOS PLANT
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THE establishment of a customs asbestos purchasing station and processing plant near Globe, Arizona, is expected in the near future, following authorization by the Defense Plant Corporation and the Reconstruction Finance Corporation of the Pine Top Asbestos Company's project. The asbestos program calls for an expenditure of approximately \$150,000, part of which is being provided by the Pine Top concern, while the mine development funds will be obtained from the RFC and the plant construction costs will be financed by the DPC.

The importance of the high-grade, iron-free asbestos of Arizona to the war program has long been recognized, but the facilities for processing and marketing the output of many small mines in the Globe area were not sufficient so that purchasers could be assured of a regular supply of properly graded material. The U. S. Bureau of Mines recently expended \$200,000 in the Globe district in exploration of the area's asbestos possibilities. The solution of the problem is expected as the result of the final approval of the plant by the DPC on November 5 and the commencement of operations immediately.

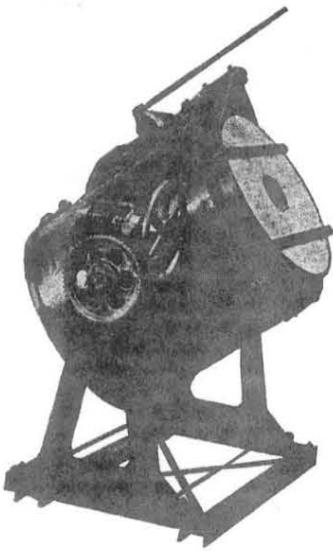
The Pine Top Asbestos Company has been induced to set up a project which provides for development of certain mines in the district, assistance to other mines which can be shippers to the custom plant, and the erection of a plant near Globe, where all asbestos mined in the area can be sold, then processed and graded for the market. Arrangements have been made with the Asbestos, Ltd., of New York to purchase the entire output of the plant.

The Pine Top company's asbestos property is located about 37 miles northeast of Globe in Gila County, Arizona. J. S. Michault, Forest Hills Inn, Forest Hills, Long Island, New York, is general manager of the Pine Top concern, and William Andrews, Box 48, Globe, Arizona, is local manager.

**NEW METAL MINES HANDBOOK
PUBLISHED BY OREGON STATE**

A NEW volume of the Metal Mines Handbook series has been published by the Oregon State Department of Geology and Mineral Industries, Earl K. Nixon, director. This is the sixth volume of the series and is called Bulletin 14-C, Vol II, Sec. 2. It describes metal mines in Jackson County, listing more than 400 properties. It contains 208 pages and an aerial map of southwestern Oregon, together with a separate colored overprint which may be used to outline the geologic formations of the county. The volume may be obtained from the Portland office of the department at 702 Woodlark Building, Portland 5, or at department offices at Baker and Grants Pass. The price is 75 cents postpaid.

Preceding volumes in the series have described mining properties in Baker, Grant, Union, and Wallowa counties of northeastern Oregon and Coos, Curry, Douglas, and Josephine counties of southwestern Oregon.



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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, refinery | 11.70c |
| 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., 99.8% in ingots, l.c.l. | 22.5c |
| in carloads | 20.5c |
| Manganese, per lb., 95-98% f.o.b. New York | 35.6c-39.6c |
| Molybdenum, per lb. | |
| in 10 to 49 lb. lots, 99% | \$2.60-3.00 |
| in ferromolybdenum | 95c |
| in calcium molybdate | 80c |
| Nickel, per lb. | |
| electrolytic cathodes | 35c |
| Platinum, per oz., refined | \$35 |
| Quicksilver, per 76-lb. flask, f.o.b. far western shipping points | \$195-197* |
| Silver, per oz., f. o. b. U.S. mints | 71.11c |
| World price, f.o.b. N. Y. | 44.75c |
| Tin, per lb. f.o.b. N. Y., 99% | 52c |
| Tungsten, per lb., in ton lots 99% plus, powdered | \$2.50-2.75 |
| 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. | \$2.10-2.20* |
| 60% to 65% Sb. | \$2.20-2.30* |
| Beryllium Ore, per ton, f.o.b. mines, minimum 10% BeO | \$100 |
| minimum 12% BeO | \$120 |
| Chrome Ore, per long ton, government stockpiles, 1 1/2 to 1 ratio | |
| 48% | \$52.80* |
| 44% | \$48.40* |
| 40% | \$44.00* |
| 35% | \$38.50* |
| Galena, per short ton, f.o.b. Joplin, Mo., average settling price 80% | \$76.54* |
| Manganese Ore, Domestic, per long ton at shipping points, carload lots. | |
| 48% | \$48* |
| 44% | \$42.24* |
| 40% | \$36* |
| 35% | \$28* |
| 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. Tucson | \$24* |
| 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 | \$8.50-9 |
| Borax, per ton, granular technical, in bulk | \$41.50 |
| Diatomite, per ton, f.o.b. mill, 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 | \$33 |
| Colorado, f.o.b. mines, minimum 82% CaF ₂ and maximum 6% SiO ₂ | \$21.50 |
| Mica, sheet, three-quarter trim, 1 1/2 by 2-in. and up, per pound | \$5 |
| Punch | 40c* |
| Potash, per unit K ₂ O, Domestic muriate, 80-85 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.

Those marked with an asterisk () have special government prices under certain conditions.

GENERAL CHEMICAL REQUESTS REVIEW OF RWLB DECISION

FOLLOWING a hearing before the Non-ferrous Metals Commission of the Regional War Labor Board at Denver on September 8, 1943, an order of the commission was issued, directing the General Chemical Company to institute a wage increase of 2 cents per hour to muckers, trammers, and surface men at the company's Jamestown mines. The increase is retroactive to July 8, 1943. The company and the International Union of Mine, Mill and Smelter Workers (C. I. O.) were ordered to incorporate a clause in the proposed contract between the parties providing for a vacation of one week with pay after two years of service and of two weeks with pay after five years of service.

Other sections of the commission's order provide for maintenance of membership, checkoff, and a seniority clause. Grievance and arbitration procedures also were set up. The company has filed a petition with the National War Labor Board at Washington requesting a review of the commission's order.

The General Chemical Company is engaged in the production of fluorspar from mines near Jamestown in Boulder County, Colorado, which were last worked during World War I. Wilbert J. Trepp of Boulder is the superintendent in charge.

NEW MATERIAL SUBSTITUTIONS AND SUPPLY LIST IS RELEASED

A MARKED easing of the supply situation in ferro-alloys and many non-ferrous metals is evidenced in the Material Substitutions and Supply List No. 10, issued recently by the War Production Board. The easier situation only indicates that these materials, in unfabricated form, are now sufficient to supply essential war and industrial needs, according to the official release, and there is no present indication that any of them will be available soon for general use or that restrictive orders regarding such use can be lifted.

The list, prepared by the WPB conservation division, groups the materials most essential to the war program in three categories on the basis of their current availability: Group I, materials in insufficient supply to satisfy essential war demands; Group II, materials in sufficient supply to meet war needs; Group III, materials in excess of essential needs and recommended as substitutes for scarcer materials. The revised list as follows:

Group I

Metals: Platinum, cadmium, tin, bismuth, beryllium, copper (controlled material), and steel (controlled material).

Ferro-Alloys: Tantalum, nickel, and columbium.

Group II

Metals: Zinc, aluminum (controlled material), silver, and magnesium.

Ferro-Alloys: Molybdenum, silicon metal, ferrochromium, ferrotungsten, ferrovanadium, and spiegeleisen.

Group III

Metals: Antimony, calcium, gold, lead, mercury, and palladium.

Ferro-Alloys: Cobalt, ferroboration, ferromanganese, ferrosilicon, ferrotitanium, silicomanganese, silvery iron, and zirconium ferro-alloys.

PACIFIC-ATLANTIC METALS DEVELOPMENT PROGRESSES

THE Pacific-Atlantic Metals Corporation of Los Angeles, California, is engaged in installing heavier equipment and erecting a permanent camp at its Copperola mining property, following a considerable amount of preliminary development work at the mine. The Copperola is located in the El Paso Mountains about 11 miles northwest of Randsburg, Kern County, California.

So far, three prospect shafts have been sunk on a triangle 300 feet apart, with more than 1,500 feet of open trenching having been completed at the Copperola group of claims. The development is reported to have uncovered a four-foot vein carrying from 0.5 per cent to 4 per cent tungsten, while copper values run from 3 to 18 per cent. Additional work planned includes a continuation of the No. 3 shaft to a depth of 350 feet. It is expected that the shaft will cut not only the four-foot vein, but also will encounter three or more parallel veins which outcrop to the east. Fred I. Phelps is in charge of Copperola operations.

The Pacific-Atlantic concern also has finished a substantial amount of development at its Run Around and Brown groups of claims in the same district. It is understood that the company is negotiating a sublease on the Brown mine to the Delamar Corporation. Work on the Brown to date is said to have opened up a six-foot vein of high-grade copper to a depth of about 200 feet. E. H. McMurray, old-time Nevada mine operator, will be in charge of development at the mine under the new operating company.

James Barrett of 1706 Bel-Aire Drive, Glendale, California, is vice-president of the Pacific-Atlantic Metals Corporation.

PROCEDURE REVISED FOR ACCESS ROAD APPLICATIONS

A NEW procedure has been inaugurated for the filing of access road applications and a new form, PR-DA-3, is available for applicants. Heretofore, applications for access road projects were submitted to the Forest, Grazing, or Indian Service, depending upon the location of the project; now the applications are sent first to the Public Roads Administration and are referred to one of the three services and to the U. S. Bureau of Mines or U. S. Geological Survey for investigation and processing.

Information which must be submitted in connection with road applications includes: type of mineral, extent of sampling and development, operating season, present daily production, estimated production with proposed road, number of men now employed and number to be employed upon completion of road, distance to mill or smelter, type of transportation, and daily capacity of mill or smelter.

corrected through stimulating silver production and lowering the ratio of silver to gold by international agreement.

6. The adoption of international bimetalism would not make the international stabilization fund plan unnecessary, but would rather help assure the success of any such plan by facilitating each nation's ability to replenish its credit on the books of the international fund through its power to deposit silver, as well as gold, for the purpose.

7. This is the only monetary plan that assures the world at large will possess an adequate stock of monetary metals, no matter how large domestic and external trade becomes, and no matter at what points world prices are stabilized.

8. A much larger number of nations would be themselves producers of standard money under international bimetalism, and thus would be aided in maintaining the stability of their currencies through the production of monetary metals within their borders. The Western Hemisphere, chiefly Latin America, produces about three-fourths of the world's silver, while the Eastern Hemisphere turns out about three-fourths of the gold.

The United States should support international bimetalism because, without lessening or impairing the use of gold or damaging the monetary situation in any country, such a system would serve best its economic interests and those of the Western Hemisphere.

International bimetalism will escape all of the disadvantages that arise when any one nation resorts to the use of two standard monetary metals, instead of gold alone.

International bimetalism retains every advantage of the gold standard, but possesses a number of additional advantages over gold.

The end of the war and the launching of a cooperative effort by all nations to restore monetary stability with the return of peace provides an unparalleled opportunity to bring this superior international monetary standard into effect, thus assuring a more effective and lasting monetary stability in the postwar world.

JEAN ZINC PROJECT ABANDONED ZINC STOCKPILING CONTINUES

ALTHOUGH the War Production Board has withdrawn its recommendation for the construction of a Waelz zinc plant at Jean, Nevada, the Metals Reserve Company is continuing the purchase of local ores for the present. It was over a year ago that \$341,000 was allocated by the Defense Plant Corporation for the construction of a carbonate zinc plant.

The proposed plant was to have employed the Waelz vaporizing process and to have been operated by the Western Metals Company, Percy B. Butler of Los Angeles, California, manager. Output would have been contracted to the Metals Reserve Company. No further announcements have been made, other than that the MRC will continue to stockpile zinc-lead ore at Jean, but that the recovery plant will not be built.



EAGLE-PICHER MILLING PLANT NOW OPERATING AT CAPACITY

CAPACITY operations are being conducted by the Eagle-Picher Lead Company at its new 150-ton lead-zinc milling plant at Sahuarita, Arizona. The mill, known as the San Xavier, was completed in October by the Southwestern Engineering Company, a Los Angeles firm.

The new unit includes facilities for crushing, sampling, and stockpiling custom ores, although no custom ores are being accepted, transformer substation, water supply system, and camp buildings. Ores being handled by the plant are from the Eagle-Picher company's San Xavier mine about 30 miles south of Tucson in Pima County, Arizona. The lead-zinc ores are trucked to the mill in special drop-bottom steel trailers, weighed, and dumped into an elevated concrete hopper discharging through special arc gates and apron feeder to the primary crusher.

From the primary crushing unit, the ore goes by belt conveyor over a rod deck screen to a secondary cone crusher, from where the material is conveyed to a sampling plant and then either to the crushed-ore mill bin or to the storage bin for truck loading to the stockpiles. The stockpiled ore will be reclaimed by power shovel and trucks which return the ore to the mill bin as required for treatment.

The crushed-ore bin is discharged by a variable speed belt feeder to the ball mill operating in closed circuit with a rake classifier. The classifier overflow goes to the lead flotation section, then to a conditioner and the zinc flotation section. Concentrates are thickened and filtered for delivery by conveyors to storage bins from which they are trucked to the railroad, a distance of a mile.

Arizona operations of Eagle-Picher are under the direction of E. D. Morton, Box 1268, Tucson, Arizona, and E. H. Crabtree, Jr., Sahuarita, is mill superintendent. The Eagle-Picher concern, which has both United States and Mexican operations, is headed by Joel Bowlby, American Building, Cincinnati, Ohio.

COPPER, LEAD, AND ZINC FIGURES FOR 1942 RELEASED BY BUREAU

STATISTICS released by the United States Bureau of Mines show that the smelter production of copper in the United States from domestic ores during 1942 amounted to 1,087,991 short tons. This was a new all-time high and compares with 966,072 tons produced in 1941 and with 1,001,432 tons produced in the previous peak year of 1929. The 1942 production of copper was valued at \$256,766,000 as compared with a value of \$227,993,000 in 1941. The 1942 valuation is exclusive of premiums paid for output in excess of quotas fixed under the premium payment plan. Mine production figures, released in May, showed 1942 copper production totaled 1,072,003 tons.

Refined lead output from domestic ores in the United States, amounted to 467,367 short tons, antimonial lead excluded. Production in 1941 totaled 470,517 short tons. Output of antimonial lead in 1942 amounted to 51,762 short tons, compared with 40,237 short tons in 1941. This tonnage represents antimonial lead produced at primary refineries from both domestic and foreign primary and secondary sources. Domestic lead production was valued at \$58,888,000 in 1942, compared with \$53,639,000 in 1941. This figure again is exclusive of premium payments.

Slab zinc production from domestic ores only was reported as 629,957 short tons, having a value, exclusive of premiums paid for over-quota output, of \$109,613,000. In 1941 production amounted to 652,599 tons valued at \$97,890,000, while in the preceding peak year of 1929 production totaled 612,136 tons. While no official statement has been made, estimates indicate that U. S. production of slab zinc from both domestic and foreign ores was in the neighborhood of 1,000,000 tons.

Total premiums paid in 1942 to domestic producers of copper, lead, and zinc were approximately \$22,500,000, which is only 5 per cent of the total value of the 1942 metal production.

LOW-GRADE MANGANESE ORE STILL ACCEPTED AT DEMING, N. M.

DESPITE the fact that the situation is easier and that three stockpiles for low-grade manganese ores in other parts of the country have been discontinued, the buying of manganese ores, ranging from 15 to 35 per cent manganese, will be continued at the Deming, New Mexico, stockpile. This depot serves both Arizona and New Mexico. The stockpile for high-grade manganese ore (above 35 per cent) has been moved to El Paso. No intimation can be given as to how long the low-grade stockpile at Deming will be continued, but it is believed that the Metals Reserve Company will give ample notice to shippers before any action is taken.

A change has been made in Metals Reserve manganese contracts in that contracts now will be given for a minimum of 500 tons, whereas previously a minimum of 1,000 tons was required. Contracts apply only to ores running 35 per cent or over.

LEUT. HARRY E. RIESEBERG* describes

A New Gold Locating Device

A MAGNETIC balance, originally devised to aid in the location of small shallow mineral deposits, has surprised its inventor, Dr. R. Krahmenn, a German geologist formerly of Berlin, in that it recently has actually located new gold deposits on a large scale in two separate hemispheres. Tests are to be made soon for its use in underwater salvage locations of sunken treasure lost in years past wherein the craft itself has deteriorated and the metals in gold and silver have been left buried beneath the sands, ooze, and muck of the sea bottom.

Krahmann's new device and invention has been used with success in South Africa, and through its operation new discoveries of a continuation in the Main Reef of the Rand goldfields was made. Recently, the invention was successful in locating new ore-bearing gold deposits in the Yellowknife area of the Great Slave Lake territory, in northern Canada. Here gold was found in such vast quantities that hundreds of prospectors have been searching the district for the wealth from those sub-arctic wastes.

Geologists know that, although gold itself does not attract the magnet of any metal-finder, it is found with certain magnetic rocks, and the magnetic balance quickly locates the magnetic mass which contains the precious metals.

This new invention of Dr. Krahmenn's genius, known as a magnetic balance, is an instrument of great delicacy that detects hidden magnetic bodies underground—and with already some little success underwater (fresh water experiments have so far been found to be successful)—without the labor of digging and boring by mere chance as is the usual procedure.

The operation of the balance is governed entirely by the movement of a magnet within the vertical instrument, which dips more and more as it approaches the area in which the gold-bearing ore rests, until it comes exactly over the center of the hidden magnetic mass. As the movement is infinitesimal, it is enlarged by a mirror fixed to the magnet, in order that it may be read on a scale.

Two operators are required in the use of this balance, both working with a fixed instrument, and noting on each site the variations in terrestrial magnetism; both having arranged before the operations to take readings at exactly the same time.

Likewise readings are necessary with the vertical balance for magnetic variation, and the resultant figures acquired are then made into a chart or graph. With these results shown on the graphs, the operators may then roughly approximate the shape of the hidden gold-bearing mass.

*United States Naval Reserve, Canoga Park, California. Marine engineer, deep-sea diver, and author of "I Dive for Treasure."

The author, an international authority on treasure ships and salvage, the world-record holder for depth salvage in an all-metal ultra-modern deep-sea diving robot, describes a new magnetic balance for gold-locating by magnetism. The invention already has proved itself on land and is believed to offer vast prospects for like operations on sea bottom.

And by intricate calculations they produce additional graphs to match those made from the instrument readings. After several consecutive experiments, each bringing the gold-bearing pocket closer and closer, one is found to correspond, from which it is then possible to mark the exact position of the hidden mass, its depth and size. It only remains then to bore and drill for the samples of its constituents and grade.

THE field procedure might be outlined as follows:

An area is marked out for survey by placing boulders representing a number of

stations, at each of which the surveyor has first to obtain by compass the magnetic meridian. A "vertical field balance" now replaces the compass on the tripod. The presence of metallic substances below the surface is indicated by a deflection of the magnet within the instrument. The deflection and the time at which the reading is taken are recorded by the surveyor. The same data are recorded at each station.

Having completed the readings from the VERTICAL field balance, the surveyor now works over the same area with a HORIZONTAL field balance in order to obtain records of the magnetic variation at each station. Being familiar with the geology of the ground, the surveyors are now able to guess roughly at the probable shape of the ore body. Another surveyor at the base station takes readings of terrestrial magnetism, his observations being synchronized with those of the surveyor in the field. A graph of the combined readings is made and, by subtracting the amount of terrestrial magnetism, a true reading of the deflection caused by the ore body is obtained.

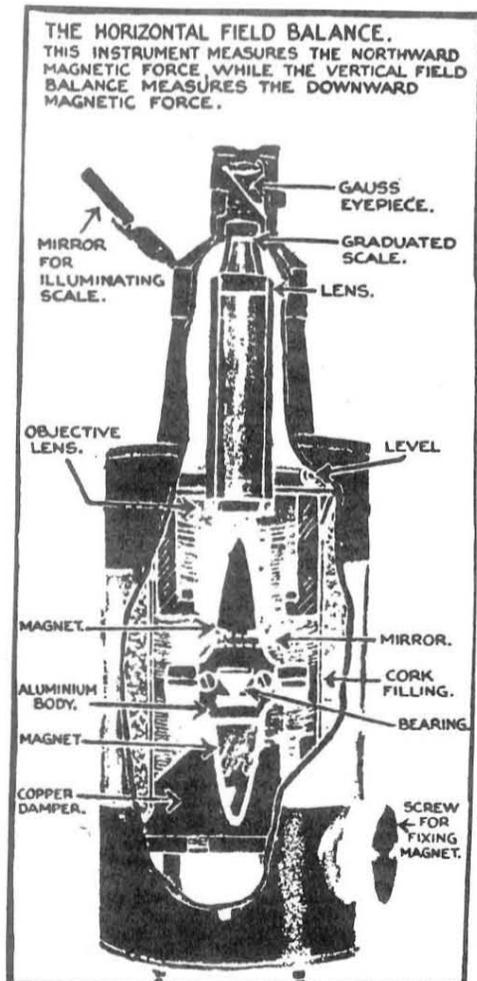
Though not at present knowing the composition of the magnetic deposit, the surveyors have determined its position and know its approximate shape and depth below the surface, as obtained from the combined field balance readings and mathematical calculations. All that now remains to be done is to bore and dig to obtain details of the constituents of the underground magnetic mass, and perhaps, within it, there may be found that precious but non-magnetic metal—GOLD.

The accompanying drawing gives some of the details of Dr. Krahmenn's invention.

MINERAL PRODUCTION RISES SHARPLY IN CALIFORNIA

ACCORDING to statistics compiled by the California Division of Mines, the value of California mineral production for the year 1942 amounted to \$408,738,434. The figure represents an increase of \$34,412,206 over the total value of mineral production for the state in the previous year. The report covered such groups of mineral substances as fuels, structural materials, metals, salines, and industrial materials.

The metals group is understood to have been the only one showing a decreased value for 1942. A record total value was recorded for the annual output of iron, molybdenum, quicksilver, and tungsten ores, while chromite and manganese ore values showed the greatest production since 1918. Lead production topped all records since 1923. However, the increased productions did not offset the decrease in gold and silver output, and the metal group as a whole showed a decline in value from \$61,595,912 in 1941 to \$46,185,885 in 1942.



a champion of mining and oil in Montana, DeSchon was the publisher of the Montana Oil and Mining Journal, pursuing his oil interests as a sideline. He was active in aeronautical affairs, having served in the army aviation corps in the last war and he had served a term as president of the Great Falls chapter of the National Aeronautical Association.

John J. Williams, well-known smelter man, died November 6, 1943, at Jerome, Arizona, at the age of 67 years. Williams was born in Sherman, Texas, and lived in Carlsbad, New Mexico, for many years. He formerly worked at the Cananea Consolidated Copper Company's plant at Cananea, Sonora, Mexico, and had been variously engaged in mining activities throughout Arizona before accepting, in 1919, the position of general foreman for the United Verde smelter at Clarkdale, Arizona.

William J. Rainger, representative of the du Pont Powder Company in Colorado for 28 years and later consultant for the company, died October 22, 1943, at his home in Colorado Springs. Prominent in Colorado mining circles, Rainger was one of the founders of the Colorado Metal Mining Association and the originator of that organization's annual Sowbelly Dinner. He had been a resident of the state for 50 years, living in Cripple Creek and Colorado Springs. He was one of the engineers on the Moffat tunnel construction job.

George W. Long, a pioneer in Arizona mining activities, died in Phoenix, Arizona, October 28, 1943. He was 72 years old. Long was born in Colorado City, Colorado, and for many years was active in mining developments in the Cripple Creek and Leadville districts of Colorado. Later he was a banking representative in the Alaska gold rush. He went to Arizona 43 years ago as superintendent of the Bisbee Extension mine at Bisbee, Arizona. In 1913, he was associated with J. L. McIver of Phoenix in opening up the United Eastern Company property at Oatman, Arizona, which started extensive development in the district. For the past 25 years, Long had been a resident of Phoenix, and was active until the time of his death in the organization of companies for development and promotion of mining ventures.

GEOLOGICAL SURVEY TESTS

CALIFORNIA TIN PROSPECT

GEOLOGISTS of the United States Geological Survey have completed a study of the Meek-Hogan tin property located in Kern County, California. The work was under the direction of Lincoln H. Page of the USGS, and a topographic and geologic map and cross sections have been prepared. A limited number of copies of the map and sections, with a brief descriptive text, are available to anyone directly interested upon application to the Director, Geological Survey, Washington, D. C.

The Meek-Hogan tin deposit was discovered over a year ago and considerable exploration work has been done since that time. The property is owned by Dana Hogan of the Hogan Petroleum Company of Los Angeles, California.



MINERS RENEGE ON CONTRACTS

NOT DELIVERING ORES TO MRC

STRATEGIC ores are not being delivered to the Metals Reserve Company's stockpile at Winnemucca in Humboldt County, Nevada, as mine operators had promised. Before the government established the stockpile about six months ago, a survey was made to determine the amount of strategic ores that could be produced from the vicinity. Contracts were made by the government with local operators, but the ore is not forthcoming. The depot is for the purchase of chrome and manganese, tungsten ores, domestic mercury, tin, antimony ores and concentrates, tantalite, columbite and beryl ores.

Glenn G. Gentry, RFC and MRC engineer, of Battle Mountain, Nevada, says:

"The tonnage that has been delivered is a very small percentage of the tonnage promised and it behooves all owners of mining properties to take advantage of the aid offered them in having a market supplied for their ores and to fulfill the promise made by them and make delivery of more strategic ores. All operators should take advantage of this opportunity while it exists."

The condition at Winnemucca is being duplicated in most of the other mining areas as small operators are not delivering the ore they contracted to deliver.

WLB METALS COMMISSION

HOLDS HEARINGS ON WAGES

HEARINGS were completed at Salt Lake City recently by the nonferrous metals commission of the War Labor Board on applications for wage increases made by the International Union of Mine, Mill and Smelter Workers (C. I. O.) The hearings involved 12,750 nonferrous metal miners employed by 21 companies in Utah, Nevada, Arizona, and Idaho. The wage demands of the union call for pay increases ranging from \$1.30 to \$2.30 per day, as follows: \$1.30 for common labor, \$1.60 for certain smelter classifications, \$1.80 for muckers, and \$2.30 for miners.

Charles A. Graham of Denver, chairman of the nonferrous metals commission and chairman of the Ninth Regional WLB, said wage demands already are before the commission from workers in Montana and Arizona. The commission has not yet decided, he said, whether it will consider all wage demands as a unit or deal with them separately.

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report issued in July by the engineering department of the company there were 20 different ore blocks in the mine with 35,568 tons of ore having a gross value of \$558,773 at B premium lead and zinc prices. Nye A. Wimer, 70 Pine Street, New York, New York, is president of Tennessee-Schuykill, while Frank C. Cassidy is general manager of operations for the company at Chloride.

The twenty-ninth carload of ore has been shipped by R. E. Lord, Chloride, Arizona, from the Manzanita mine in the Chloride district of Mohave County, Arizona. All ore so far has been taken from above the 150-foot level and carries values in lead, zinc, silver, gold, and some copper. Shipments go to Salt Lake City. The Manzanita is owned by the Minnesota-Connor Mines, Inc., T. M. Recchiuti, Security Building, Camden, New Jersey, president. Lord is vice-president and general manager.

Work is reported to be progressing steadily at the Columbus mine and the shaft is now down to the 100-foot level. Drifting both ways on the vein is expected to be started immediately. The mine is located in the Wallapai mining district of Mohave County near Chloride, Arizona, and is being operated by J. H. Hall, Box 276, Chloride. Nina Uncapher, Chloride, is owner of the Columbus.

It is announced that the raise from the tunnel level of the 97 mine has been completed and plans for further development are being made. The property is situated in the Cerbat Range 1½ miles south-east of Chloride, Arizona, and is being operated by Paul Warner and Chester Lauck of Chloride.



The Winston Copper Company is engaged in working the area above the 97-foot level of the Newton copper mine about seven miles from Jackson in Amador County, California, the operation being carried on under an RFC loan. The mine has been dewatered to the bottom of the 400-foot level and a preliminary examination of the lower workings has been made. The company recently increased its crew to 33 men. Wayne Loel, Subway Terminal Building, Los Angeles, California, is president of the operating company and work is under the direction of Hal M. Lewers, Box 196, Plymouth, California.

The Permanente Metals Corporation is reported to have purchased a dolomite property near Hollister, California, from Howard Harris. The sale price is understood to have been \$25,000. The company also is continuing operations at the Sterling and Salmos dolomite property in the Gabilan district, with approximately \$1,000 in royalties going to the owners monthly. Permanente is said to be engaged in testing two additional dolomite deposits in San Benito County, California. The company is headed by Henry J. Kaiser, Latham Square Building, Oakland, California.

Employees of the American Potash and Chemical Corporation and the Trona Board of Education will benefit as the result of the recent approval by the Federal Housing Agency of a 148-unit housing program for Trona and Argus, California. It is understood that 100 temporary dwelling units will be erected with federal funds in Trona and that the FHA also authorized a private priority quota which will allow the provision of 30 family dwelling units through rehabilitation of existing buildings by private enterprise. Also to be provided are nine dormitory rooms for 18 women workers. The latter project will be constructed by the American Potash firm. The American Potash and Chemical Corporation operates at Trona and is headed by F. Cecil Baker, 122 East Forty-second Street, New York, New York.

The Hecla Mining Company of Wallace, Idaho, is completing mill alterations at the Jenny Lind flotation plant near Hornitos, California, and expects to start milling ores from its Blue Moon mine early in December. The mill was leased from the Lind Mining Company by Hecla this spring and is being revamped to treat zinc ores. Substantial reserves are said to be exposed at the Blue Moon, the ledges containing some gold as well as good zinc values. The lack of experienced miners in the district is reported to have slowed down operations somewhat. L. E. Hanley, Wallace, Idaho, is president and general manager of the Hecla concern.

The Marsman Company of California, which recently took over the operation of the Altoona quicksilver mine, is maintaining production at the rate of 50 flasks of quicksilver per month. As soon as the necessary development and rehabilitation work has been completed it is expected that Marsman will double present capacity. A crew of 25 men is being employed at the Altoona, which is located about 24 miles west of Castella, Shasta County, California. E. E. Erich is manager of operations and is addressed at the mine office in Dunsmuir. Head offices for the Marsman Company of California are at 2504 Russ Building, San Francisco 4, California.

It is reported that the War Production Board has granted permission to the Pioneer Project Mines to continue hydraulic gold mining operations. The company's property is located in the Grass Flat region near La Porte, Plumas County, California. Andrew J. Modglin of La Porte is superintendent in charge of operations.

The United States Geological Survey and the United States Bureau of Mines are conducting a diamond drilling program at the tungsten properties of the Atolia Mining Company for the purpose of determining the extent of remaining ore bodies. C. W. Chesterman is in charge of the survey and F. J. Wiebelt is conducting the diamond drilling work. The tungsten mining property is situated near Atolia, California, and Hugh W. Coke, Atolia, is superintendent for the Atolia Mining Company.

One hundred fifty tons of copper concentrates are shipped daily from the Gray Eagle copper mine near Happy Camp, Cali-



The **Mirabel Quicksilver Company** is engaged in drifting and stoping operations at its Mirabel quicksilver property about four miles south of Middletown in Lake County, California. It is reported that from 20 to 25 tons of ore are mined and milled daily, mucking and tramping being done by hand and waste rock being trucked to the dumps. One shift is employed at the mine and three at the mill. Mining is by shrinkage, square-set, and open-cut and fill stoping methods and no development work is being carried on at present. The Great Eastern and Bradford shafts are being worked now, while operations have been suspended at a third shaft about a mile distant. The Mirabel company, which was organized in 1928 and started active operations in 1930, is headed by W. E. Best of Middletown. R. A. Parina is vice-president and Thomas L. O'Connor is superintendent and secretary-treasurer.

The **Belmont Osborn Gold Mining Corporation** is reported to have purchased the **North Star** and **Laura** gold mines in California from Tacoma, Washington, interests, and it is understood that plans are being made for extensive operations after the gold mining ban has been lifted. Mining engineers' reports are said to indicate that sufficient ore reserves already have been developed at the mines to warrant installation of a mill. The **North Star** and **Laura** are situated in the Cherokee mining district of Tuolumne County, California, on the famous **Deadhorse-Eureka Lode**. The Belmont Osborn concern at present is engaged in operating the **Hastings quicksilver mine** on the east side of the **Sulphur Springs Mountain** in the Sulphur Springs mining district of Solano County, California. **W. A. Hayes**, 1900 Leimert Boulevard, Oakland, California, is president of the Belmont Osborn Gold Mining Corporation.

A large crystal weighing 610 pounds was found recently at the **Calaveras crystal mine** two miles from **Mokelumne Hill** in the **Chili Gulch** district of **Calaveras County, California**. A crew of six men is employed in taking out crystals from an old gravel channel, which is worked through an 800-foot tunnel. Operations were started by the present operators over a year ago. The mine, which is under lease from **R. P. M. Davis**, 2356 Hollywood Drive, Hollywood, California, is worked by **F. R. Zinck**, **John Bevanda**, and **Nick Bullin** of **Stockton, California**. The group is shipping to the **Metals Reserve Company** at **Washington, D. C.** **Mervin Porteus**, **Mokelumne Hill, California**, is superintendent of operations.

Satisfactory operations are reported at the **Oxford mine** on the **North Fork of the Yuba River** one mile from **Downieville, California**, and considerable chromite has been stockpiled near the mill to insure winter operations in the event that inclement

weather makes the road impassable. Some high-grade ore is being shipped direct to the **Columbia Steel Mills** at **Pittsburg, California**, along with the concentrates. The open-pit operation has been in chrome production for over a year since it was acquired under lease and option to purchase by **C. L. Best** of the **Best Tractor Company**, **San Leandro, California**. One of the leading gold properties in **Sierra County, California**, the **Oxford** will resume gold production after the war. **L. L. Huelsdonk**, **Downieville**, is in charge of work at the **Oxford**.

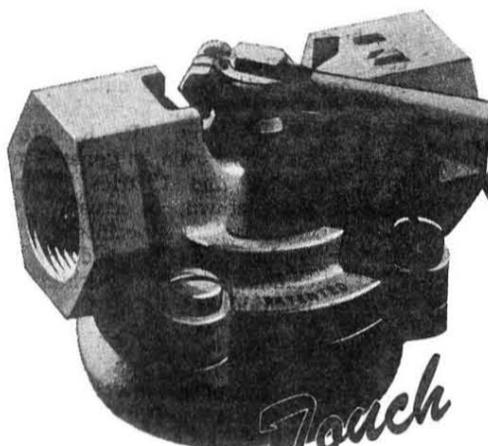
Core drilling operations by the **U. S. Bureau of Mines** are proceeding at the **Oat Hill quicksilver mine** near **Middletown** in **Napa County, California**. The mine is

being operated by **H. W. Gould** and **R. A. Hanan**, with **B. A. Gould**, **Mills Building, San Francisco, California**, as general manager. **M. J. O'Boyle** is superintendent of operations at the mine.

The **Holcomb Valley Company** is handling an average of 50 yards daily at its **Walker mine** in the **Rand mining district** near **Randsburg, California**, with production on an eight-hour daily basis. Water supply is assured by settling tanks which conserve water piped from the **Big Butte mine**. The company, a gold and tungsten producer, is headed by **George K. Knudsen**, 973 **North Main Street, Los Angeles, California**.

Recent tests of gravel at the **Walker placer claims** have been completed by

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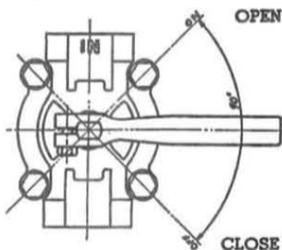


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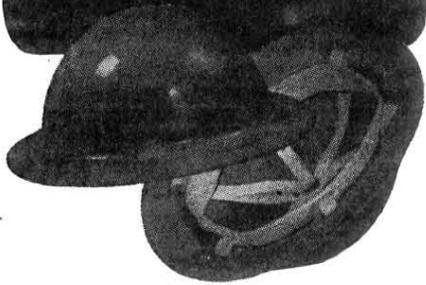
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Desert Tungsten, Inc., and the preliminary machinery is being replaced by standard equipment. It is expected that production will be started by the first of the year. Testing is said to have indicated sufficient scheelite content, together with alluvial gold, to make operations profitable. The property is in Kern County northeast of Randsburg, California, and operations are under the direction of L. C. Brittain of Randsburg. Desert Tungsten is headed by William A. Dewitt, Lyon Building, 106 East Second Street, Reno, Nevada. F. E. Turner of Muskogee, Oklahoma, is vice-president and Brittain is secretary-treasurer.

The Raysco Mines, Lake County, California, is reported to have opened, at one of its mines, a face of low-grade manganese ore about 100 feet in length and assaying from 28 to 34.8 per cent manganese, and an open-pit operation is said to be planned. At the company's main operation, the three to five-foot vein has been opened for a distance of about 50 feet, and assays show the ore to carry 48.6 per cent manganese, as well as values in silica, iron, and phosphate. Plans are being made to install a pilot plant for concentration of the low-grade manganese ores and practically the entire production will be used by a New York chemical manufacturing company. R. R. Stevenson, Middletown, California, is general manager of operations, and Charles Christenson, also of Middletown, is assistant general manager and mine superintendent. The company's home office address is Box 1684, Richmond, California, while the mine address is Middletown.

It is understood that mining operations are scheduled for the near future at the old Cerro Gordo mine which is located in Inyo County near Keeler, California. The mine was acquired over a year ago by Imperial Metals, Inc., under lease from the Silver Spear Mining Company of Los Angeles, California, but no active work has been done on the property as yet. Imperial Metals is headed by Sam B. Mosher, Box 5840, Metropolitan Station, Los Angeles, and H. E. Olund, 611 North Geneva Street, Glendale, California, is consulting engineer. It is said that interests formerly connected with the operation of the Silver Queen mine at Mojave, California, also are associated in the Cerro Gordo venture.

The Consolidated Gold and Metals Company is expected to start production in the near future at its copper property in Plumas County, California. The concern has been conducting an extensive development program at the mine for some time and has installed necessary machinery and equipment and has improved the roads. Joseph R. Walker is president of the Consolidated Gold and Metals Company and is addressed at 206 Boston Building, Salt Lake City, Utah. Company offices are located in the Newhouse Building, Salt Lake City.

It has been reported that the new milling plant of the Polar Star mine is in regular production at present and output is understood to have met the expectations of the operators. A crew of 13 men is being employed at the property, which is

situated near San Simeon in San Luis Obispo County, California. The six quick-silver claims were acquired under lease last fall by Lawrence K. Requa, 619 Roosevelt Avenue, Salt Lake City, Utah. Diamond drilling was carried on last winter, a tunnel has been driven, and at present some road construction work is being planned. James E. Collard is mine superintendent and Robert Durk is the plant superintendent, engineer, and assayer. Both men formerly were associated with Requa in his mining activities at Patterson, Idaho.

COLORADO

Workings of the Denver City mine are being unwatered by the Conejos Corporation of Cripple Creek, Colorado. The company has installed a gasoline hoist, pumps, and other equipment. The property is near the Saguache County line about 16 miles southeast of Gunnison in Gunnison County. Otis A. Roberts of Cripple Creek is manager of the Conejos Corporation and Alva Flesher, formerly of Victor, is foreman in charge at Gunnison.

The National Lead Company, 111 Broadway, New York, has declared an extra dividend of 25 cents and the regular quarterly of 12½ cents a common share, payable December 24 to stockholders of record December 10, 1943. The company's operations are carried on in California and Wyoming through its Baroid Sales Division and in Colorado by the St. Louis Smelting and Refining Works.

Gold mine operators of Clear Creek and Gilpin counties in Colorado are concerned about the condition of the Argo tunnel, a mining, drainage, and transportation adit which extends from below Idaho Springs to the Old Town mine shaft in Gilpin County. Since the closing of gold mines, the tunnel has fallen into disrepair and the many cave-ins are backing up the water into the laterals. Operators of the district believe that the government should undertake the cost of keeping the tunnel in shape, as the Argo Tunnel Company, owner, cannot afford to do so at this time, nor can the mine operators, since they are not allowed to work their properties. While principal values of the district are in gold, copper and silver also are present in the ores.

IDAHO

An ore body running about 35 per cent zinc-lead is reported to have been opened on the 2,300-foot level of the Page mine west of Kellogg, Idaho, by the Federal Mining and Smelting Company. The ore is believed to be a faulted extension of the Tony vein. A drift is being run to open the ore body further. The company's principal holdings in Idaho are the Morn-

fornia, to the Tacoma, Washington, smelter. The concentrates are transported by eight trucks from the end of the cable tram at Thompson Creek near Happy Camp to Yreka, then shipped by rail. The property recently underwent a \$1,000,000 rehabilitation, development, and equipment program, started early in 1942 when the mine was reopened after a long period of idleness. The mine is operated by the **Newmont Mining Corporation**, Charles F. Ayer, 14 Wall Street, New York, New York, president. Robert J. Hendricks of Happy Camp is general manager at the Gray Eagle.

It is reported that 6¼ tons of ore from the **Pyavin** group of tungsten claims in Indian Wells Canyon above Inyokern, California, were milled at the Gold Basin mill in the Randsburg district of California. It is understood that the milling netted 593 pounds of concentrates worth \$581. The mine is being leased by W. J. Petty, Inyokern, from the owners, Grant Merrill of Mojave, Al Crowther of Bishop, Dr. Herb Crowthers, and Jack Warner. W. J. Jones, Paul Littell, and Charles Spann are associated with Petty in operation of the Pyavin.

Increased land rentals and the growing return from the Folsom shops engaged in defense work are reported to have stepped up the net income of the **Natomas Company** to \$22,061 in the third quarter of 1943. This compares with a net income of \$8,499 in the second quarter of this year and a loss of \$54,315 in the first quarter, when all gold operations of the company were closed down. The Natomas concern is at present operating two dredges in the Folsom district of California by special permission of the War Production Board. Thomas McCormack, Forum Building, Sacramento, California, is president of the Natomas Company.

Renewal of the collective bargaining agreement between the **American Potash and Chemical Corporation** and Local Union 414 of the International Union of Mine, Mill and Smelter Workers for one year was announced recently. The action concluded negotiations which were begun August 18. The company operates at Trona, California, and is headed by F. Cecil Baker, 122 East Forty-second Street, New York, New York.

The **Rough Diamond** crystal property near Mokelumne Hill, California, is said to be producing, with a recent shipment of approximately 150 pounds of crystals having been made from the mine. A number of unusually large crystals have been taken out, including two weighing 200 and 112 pounds each. The Rough Diamond was one of the mines examined recently by U. S. Geological Survey engineers. The mine originally was worked for gold, and now is being operated under lease by E. C. Setzer, 1125 Marengo Avenue, South Pasadena, California, under lease from the owners. When the property was reopened last fall after a 75-year shutdown, the old workings were reconditioned, the shaft re-timbered and enlarged, and preparations made for development of virgin territory. S. Menchini of Mokelumne Hill, California, is general manager of operations.

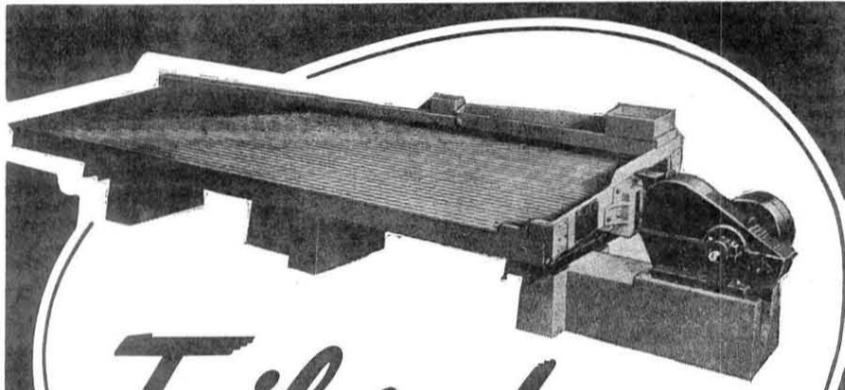
COLORADO

Regular shipments, averaging 10 carloads of zinc ore a month, are being made by the **Monarch Galena Company** from Cotopaxi in Fremont County, Colorado, to the Golden Cycle mill. The property, which the company acquired in June of 1942, is located about three miles from Cotopaxi. Eighteen men are employed with T. H. Sackett, Cotopaxi, as general superintendent.

Production is being resumed by Harry M. Williamson, U. S. National Bank Build-

ing, Denver, Colorado, at his **Boulder Fluorspar and Radium** property near Jamestown, Colorado, after a short shutdown for the installation of additional equipment. The mine is being worked two shifts with 25 men employed and the mill three shifts, with 20 men employed. The property includes the Brown Spar, Blue Jay, Emmett, Buckhorn, and Argo claims. About 40 tons of metallurgical fluorspar are produced daily. F. H. Sloan is mill foreman and Clyde Taylor is mine foreman, both at Jamestown. H. B. Williamson, Box 2, Jamestown, is general superintendent.

A quarterly dividend of 25 cents a share has been declared by the **Golden Cycle Corporation**, payable December 10, 1943, to stockholders of record November 30. Payment totals \$46,763. The company



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The Manufacturers Tell Us

Quenching—A new booklet on quenching has been prepared by the research staff of E. F. Houghton and Company in an effort to outline the principles of the heat-treating of steel. It deals with both the familiar and advanced techniques in the quenching media involved in the processes.

Volume production and the wider use of lean alloy and plain carbon steels have developed considerable improvement in quenching media and their application, the booklet states. Their success points to continued use of such materials and employment of exact quenching techniques, and suggests the value of a compilation of operation notes and data.

This 52-page booklet, "Houghton on Quenching," is available for general distribution upon request to E. F. Houghton and Company, 303 West Lehigh Avenue, Philadelphia.

Tube Mills—A description of tube mills in general, and Hardinge tube mills in particular, is provided by Bulletin No. 18-A, Tube Mills, published by Hardinge Company, York, Pennsylvania. The various uses and advantages of ball tube mills, pebble tube mills, conical tube mills, and compartment mills are discussed and cross-sectional drawings used to illustrate the various features. Construction and parts of the various mills are discussed and photographs of a number of units are reproduced. Ball and pebble tube mill data are given in tabular form, the data covering such items as diameter and length of the mills, their weight without linings and with standard linings, maximum ball loads, required horsepower, and normal speed.

Yuba History—The Yuba Manufacturing Company, 351 California Street, San Francisco 4, California, has published the story of the growth and development of its dredging business in an illustrated booklet titled "Yuba, World Leader Placer Mining Dredges." It consists largely of articles originally published in technical mining journals, and relating to placer dredging and dredges.

According to F. C. van Deirse, president of Yuba Manufacturing Company, the booklet is dedicated to those employees who are not acquainted with the history of their company and its place in the development of modern dredging practice. In a message to Yuba employees he states that the company and its immediate predecessors have been associated with gold dredging in California since 1898, when the first successful placer dredge was built and operated near Oroville. Its founder, W. H. Hammon, and his associates were among the early day California gold-dredge operators. Yuba dredges have been built for mining placer tin, gold, and metals of the platinum group, as well as for the recovery of sapphires, garnets, and scheelite. He closes with the statement that when the war is won, again there will be new Yuba dredges for the placer fields of the world.

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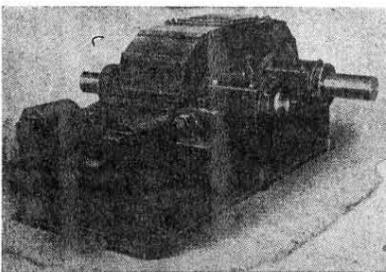
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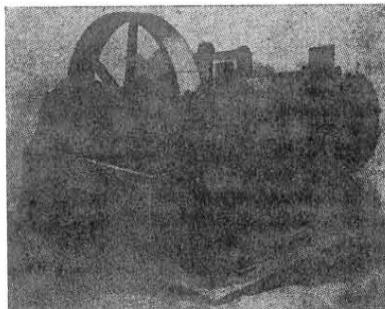
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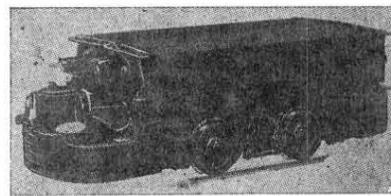
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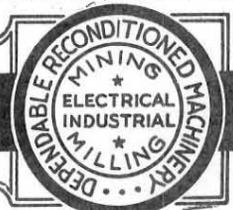
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F. W. LIBBEY* urges

Production of Aluminum from Clay

LIGHT metals in large quantities are essential to winning the war. They may be expected to occupy an increasingly important position in the postwar picture. We have ceased to marvel at rapid travel by air to nearly any point on the earth's surface, but we fail, generally, to credit light metals and their alloys for their part in air-travel development. Aluminum is by far the most important of the light metals, and in years to come bids fair to become second only to steel among the metals in industrial importance.

Bauxite, essentially aluminum oxide and combined water, has been the ore from which aluminum has been reduced, except in Germany. There, because of pre-war deficiency in bauxite, some aluminum (reported to be approximately 50,000 tons a year) was made from clay.

High-grade bauxite, formerly used exclusively for domestic production of aluminum, contains 55 per cent or more alumina (aluminum oxide) and 8 per cent or less of silica. Clay, on the other hand, is composed essentially of aluminum silicates which contain a much lower percentage of alumina and very much higher percentage of silica which is chemically combined and must be separated. Therefore, it is evident that bauxite is superior to clay as a source of metallic aluminum. Why then consider clays in competition with bauxite? The answer is that, measured by the present and potential demand for metallic aluminum, the United States is lacking in suitable bauxite reserves. It follows that the United States is dependent on foreign bauxite for its aluminum. This may be satisfactory in peace time, but it should not be necessary to emphasize the hazard of depending entirely on foreign sources of such a vital material. We have experienced the unpleasant results of our own negligence in establishing sufficient and safe supplies of such necessities as rubber, tin, and quinine.

GOVERNMENT agencies in 1941 estimated that domestic high-grade bauxite reserves amounted to 9,343,000 long tons, and that low-grade bauxite, having an average grade of 50 per cent alumina and 7 per cent silica, totaled approximately 7,337,000 tons. By far the largest part of domestic bauxite—about 85 per cent—occurs in Arkansas.

Since 1941 a considerable part of this reported reserve of high-grade bauxite probably has been used up. Pilot-plant work on utilization of low-grade bauxite has been done and some of this material now being used. Probably most of our bauxite, however, is presently coming from

Now that many millions of tons of high-alumina clays have been proved by the exploration of the refractory clay deposits of western Oregon, it seems only logical that we proceed with the development, on a commercial scale, of the metallurgy for the recovery of alumina. With domestic deposits of high-grade bauxite quite limited, the deposits of high-alumina clays may be the backbone of the U. S. aluminum industry.

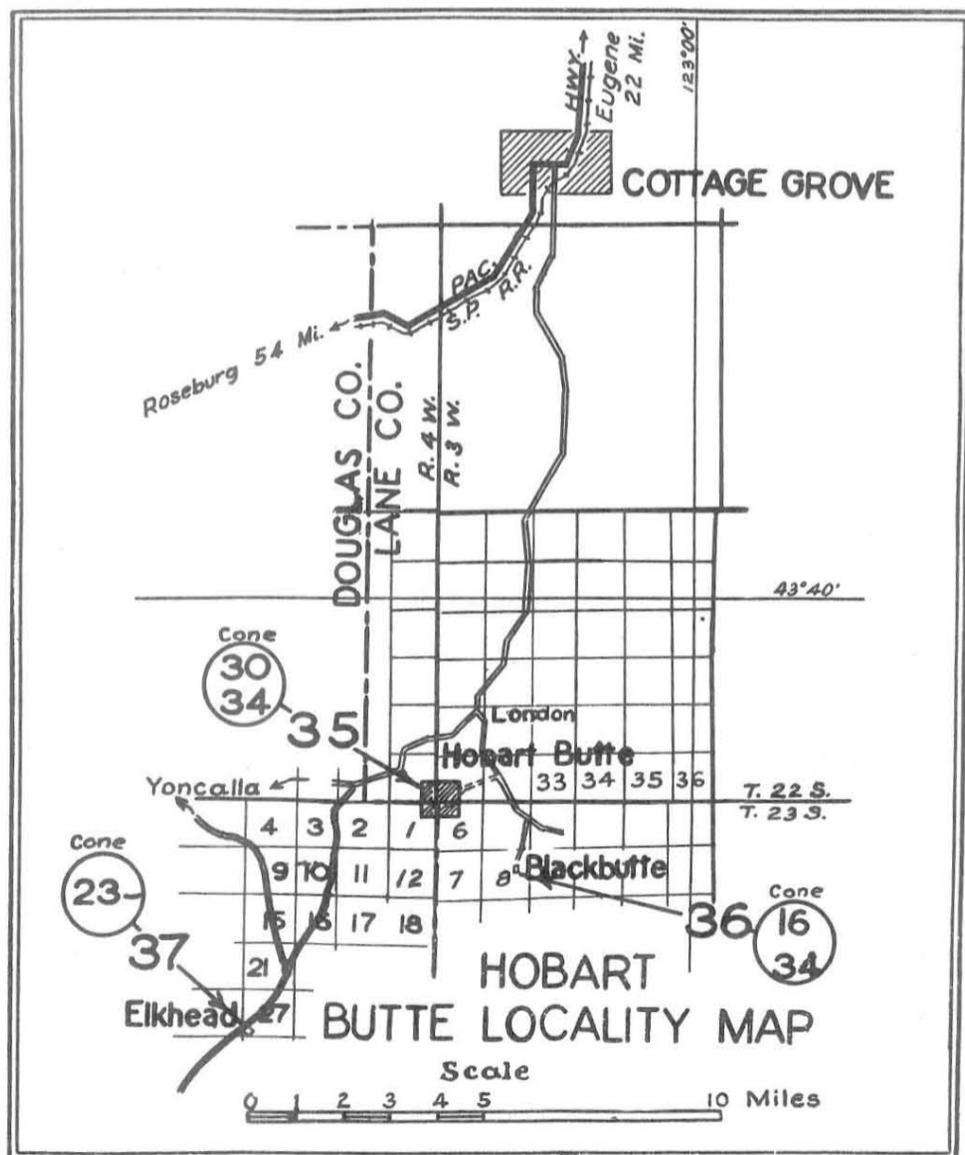
Surinam and British Guiana, as the submarine hazard has considerably lessened.

Foreign deposits of greatest importance to this country are those in British Guiana and Surinam (Netherlands Guiana). Large

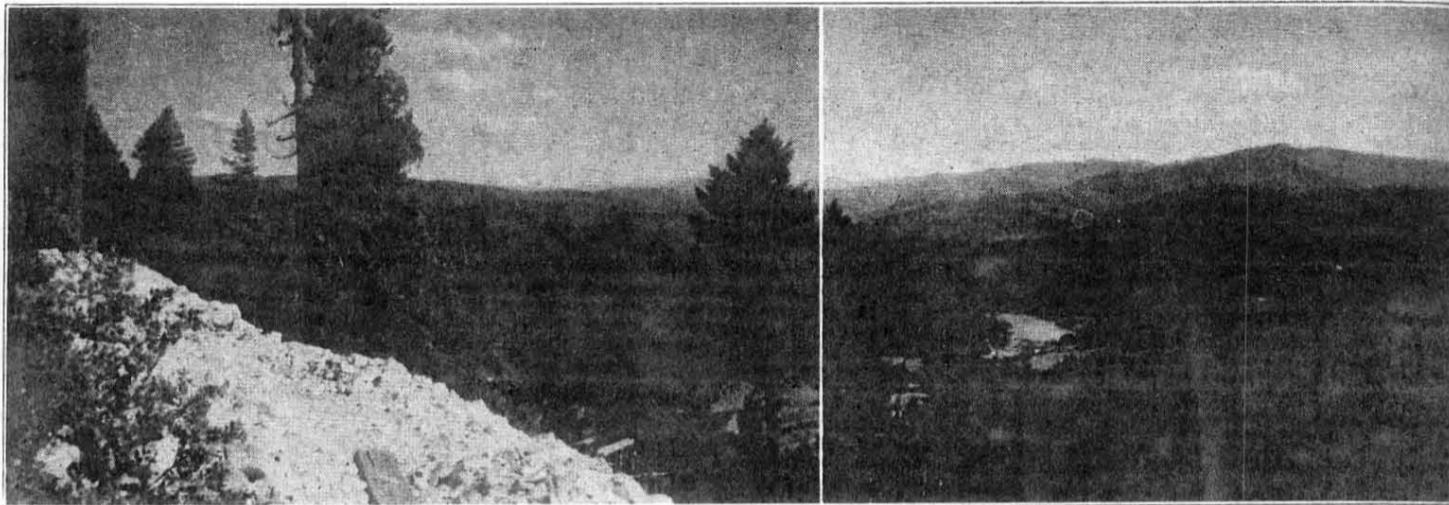
reserves are known and unprospected areas which are potentially important cover many square miles. Shipments of bauxite from both countries, mainly to Canada and the United States, have increased several times in volume during the past few years.

In Europe the best known bauxite deposits are in France, Hungary, Italy, and Yugoslavia, all of which production is controlled by Germany. Complete information on U.S.S.R. is not available, but a large aluminum industry has been built up.

Important deposits of bauxite occur in the Netherlands Indies, also in India, Northern China, and Indo-China. The Island of Bintan in the Netherlands East Indies has produced high-grade bauxite for many years. Most of the production went to Japan. At the present time Japan controls very large reserves in conquered



*Mining Engineer, State Department of Geology and Mineral Industries, Portland, Oregon. Article reprinted from The Ore-Bin, August 1943.



View from Hobart Butte quarry (lower left) showing Cascade Range, Coast Fork of Willamette River, and the Black Butte quick-silver mine (arrow).

areas and is reported to be exploiting the deposits as rapidly as possible.

Bauxite deposits have been developed in Southern Rhodesia, Brazil, and Australia, and occurrences also are known in Venezuela and Honduras.

TRUE clays are finely divided aluminum silicates which contain water of combination. Commonly, clays are plastic when wet, but the term is also applied to compacted earthy rocks which have little or no plasticity. The principal clay minerals are kaolinite, dickite, nacrite, montmorillonite, beidellite, halloysite, allophane, and nontronite. Clay deposits contain varying percentages of impurities, and it follows that there is a wide range in the composition of clay deposits.

Next to stones for weapons, probably clay is the most ancient of man-used rocks or minerals. Down through the ages use of clay has been intimately connected with man's daily life—in houses, in household utensils ranging in type from the Latin American olla to the finest Dresden china, for refractories, for tiles of wide variety, for foundry materials, oil-well drilling mud, for filtering and bleaching mediums, for a wide variety of "fillers," for sanitary wares, sewer pipe, electrical porcelain, terra cotta, and abrasives. Finally, we come to the latest use and possibly that of greatest future importance—a source of metallic aluminum.

Clays may be classified according to use, mineral characteristics, geological occurrence, or burning qualities. If classified according to burning characteristics, in general, high alumina clays are the best refractories.

IN 1938 refractory clay deposits of western Oregon were described by Wilson and Treasher¹, and this report was the basis of the clay exploration program in Oregon conducted by the U. S. Bureau of Mines and the U. S. Geological Survey. Two primary factors influenced the federal bureaus in their selection of deposits

¹Bulletin No. 6, Preliminary Report of Some of the Refractory Clays of Western Oregon by Hewitt Wilson and Ray C. Treasher, Oregon Dept. of Geology and Mineral Industries.

to be explored. These factors were high alumina content and favorable indications for developing a large reserve in millions of tons. Deposits near Molalla in Clackamas County and at Hobart Butte in Lane County were selected for investigation. Extensive drilling and sampling has been done at both deposits with encouraging results, so that these deposits, together with a third at Castle Rock, Washington, are known to be satisfactory in quantity and quality for an "alumina from clay" project.

Such a project has been set up by the Columbia Metals Company, Seattle, based on the ammonium-sulphate process as developed by the Chemical Construction Corporation, a subsidiary of the American Cyanamid Company. The process has been

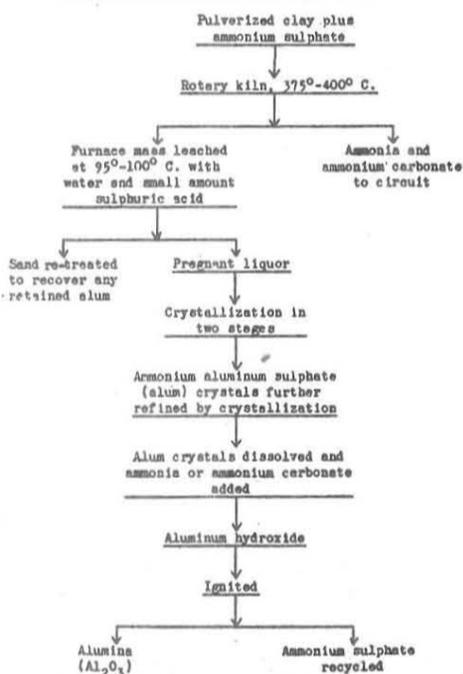
examined and approved by the alumina committee of the National Academy of Sciences, and the War Production Board has authorized a semi-commercial plant, reportedly with a capacity of 50 tons of alumina a day. The crude clay requirement would be of the order of 200 tons a day. Possible sites for the plant have been investigated by a representative of the War Production Board and by engineers of the Chemical Construction Corporation, but no decision has been announced. The latest report is that the matter is in abeyance, the reason given being manpower shortage in northwestern Oregon and Washington.

Aside from clay, the main raw materials required for the process are ammonium sulphate, sulphuric acid, oil or coal or both, and limestone. Ammonium acid sulphate is added to the calcined clay and the mixture digested. Aluminum goes into solution as ammonium aluminum sulphate, and may be separated from the solids—mainly silica, metallic oxides, and insoluble sulphates. The soluble sulphates are then subjected to a series of crystallizations and precipitations until pure aluminum hydroxide results. Alumina (Al_2O_3) is obtained from aluminum hydroxide ($Al(OH)_3$) by calcining.

It may be pointed out that the end product in the first step to obtain metallic aluminum is alumina, the oxide, whether the original material be bauxite, clay, alunite, or any other aluminous material. After the alumina is obtained the reduction to metallic aluminum by electrolysis in a cryolite bath is a standard process.

SUPPLIES of clay for the production of alumina are limited only by the "cut-off" point of percentage of available alumina contained. Naturally, physical characteristics of the deposit, location and transportation facilities, water supply, and availability of electric power and fuels have a direct bearing on the feasibility of any project. But generally speaking, domestic reserves of high alumina clays are very large. However, they are of no value whatever as a source of alumina unless a workable process for treatment is developed in detail in a large pilot plant. Only

GENERALIZED FLOW SHEET



Steps in United States Bureau of Mines ammonium sulphate process for production of alumina as outlined by R. S. Dean in Mining and Metallurgy for August 1943.

a plant operating under actual working conditions on a scale large enough to simulate a commercial operation would provide the information required for design of a large commercial plant or plants. This is a matter for the government as it is of direct interest to all the people. The outcome of a future war might depend upon our ability to produce aluminum from domestic deposits. The large aluminum companies have sources of supply of bauxite in the Guianas, and do not have the necessary incentive now to build an "alumina from clay" plant which, so far as we now know, would be "high cost" compared to a plant using bauxite.

According to present practice alumina is made in plants located at East St. Louis and Mobile. The required amount is then transported across the continent to reduction plants in the Northwest where ingot aluminum is produced. This is indeed an excessive amount of transportation. An alumina plant located in the Northwest, preferably on tidewater, would appear to be the logical answer.

Oregon high-alumina clays are relatively high-grade and occur in large quantities—of the order of many millions of tons in the two deposits partially explored. Other unexplored deposits in western Oregon are known. Particularly favorable conditions for an alumina plant prevail in northwestern Oregon due to the availability of Bonneville power, coal, nearness to ocean transportation, excellent working conditions, and proximity to established aluminum reduction plants at Vancouver, Troutdale, and Longview.

ALUMINUM was first isolated in 1825. It remained more or less of a laboratory curiosity for many years. In 1855 the price was \$113 a pound. In 1886 Hall in this country and Heroult in France simultaneously discovered that metallic aluminum could be produced electrolytically from a cryolite bath. This discovery gave birth to the aluminum industry. In 1890 the price was \$2.38 a pound. By 1900 the price had been reduced to 23 cents a pound, and now the nominal quotation for ingot aluminum is 15 cents a pound. These successive reductions in price reflect the striking growth of the industry. As the scale of operations increased, unit costs were reduced. But reduction in costs was not due entirely to increased scale of operations. In no other industry has the skill and ingenuity of American metallurgists been more clearly evident.

Domestic crude bauxite (not dried), 50-52 per cent alumina, is quoted by the Engineering and Mining Journal as \$5.00 per long ton (2240 pounds). Of course, no comparison of the value of crude clay on the basis of alumina content may be made from this quotation because there is no present market for clay for production of aluminum. The only means available of arriving at a gross, potential value of clay suitable for production of aluminum is to multiply the aluminum content of the clay by the market price of aluminum. This gives a distorted figure, as the "alumina from clay" plant must sell its alumina to an established reduction

plant at a price set by the reduction plant. This price has been reported to be \$50 per ton plus freight.

It is of interest to compare this price for alumina with the gross value of metal contained. Alumina contains over 50 per cent aluminum—say 1,000 pounds to the ton. This means a gross value of \$150 per ton for material costing \$50 a ton. The difference is of course used up to a considerable extent in labor and cost of power and supplies required to produce aluminum from alumina, plus amortization of plant. Nevertheless, the industry has been very profitable, and, as is quite well known, it is largely controlled by a single corporation.

OF all the nonferrous metals, aluminum is in the most favorable position for postwar business because of its increasing use as a structural material. The industries which are likely to expand most in the postwar world—those connected with transportation—will require large quantities of the metal. Compared to the copper industry, which is taking a beating in this war in depletion of ore reserves and in rigid price restrictions according to various quotas, the aluminum industry should go into the postwar period stronger than ever. There has been no price restriction on metallic aluminum except that established as economic by the industry itself. There has been depletion of domestic reserves of high-grade bauxite, but the known reserves of this grade have never been large. In recent years the industry has depended largely on the reserves in the Guianas. In point of contained metal these foreign deposits are very large, with additional large potential reserves in unexplored areas.

From a long range viewpoint the aluminum industry is youthful; it is still growing. On the other hand the domestic copper industry shows signs of age—premature age. Its output will shrink because of excessive depletion of reserves and burdensome taxes—conditions largely due to short-sighted policies of Washington bureaus. In normal times aluminum and copper are competitive in certain lines

Undoubtedly aluminum will be in a relatively favorable competitive position in seeking postwar business. Expansion in application of light metals and their alloys will continue, and domestic high-alumina clay deposits may, in the future, easily prove to be the backbone of the aluminum industry. It will be necessary to turn to them in time, and it would be the part of wisdom to work out the metallurgy on a commercial scale before another emergency strikes.

FIVE SENATORS INTRODUCE STOCKPILE BILL IN NEW FORM

After careful consideration and revision of Senator James G. Scrugham's stockpiling bill, S. 1160, by a subcommittee of the Senate Committee on Mines and Mining, it was decided to reintroduce the bill in its new form because of the extensive changes involved.

The new bill is S. 1582, and was introduced by Senator Scrugham for himself and Senators Carl Hayden, James E. Murray (Chairman of the Senate Small Business Committee), Edwin Johnson of Colorado, and Burnett R. Maybank. Senator Scrugham is chairman of the Subcommittee on Mining and Minerals Industry of the Senate Small Business Committee.

Under the terms of the bill, mineral production from domestic sources will receive preferential treatment; and only if the purposes specified cannot be fulfilled from domestic sources may new foreign purchases be made.

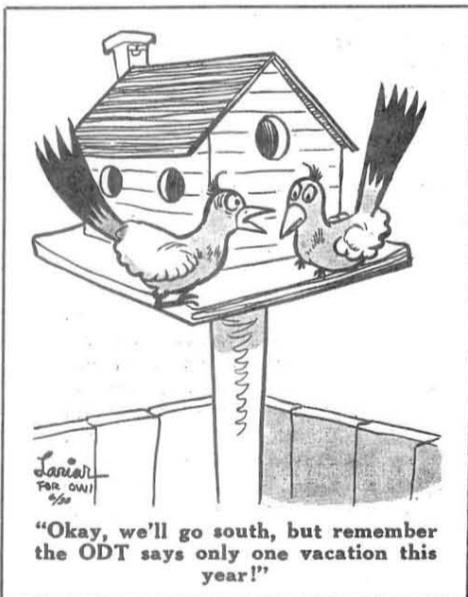
For the period of a year following the termination of hostilities it is proposed to continue paying premium prices to those mines "in which the governmental assistance or investment or private investment is shown to have been made with the intent and purpose of augmenting war or essential civilian production." Although the total output of such mines is generally small compared with overall domestic production, the number of such producers is large, with many important critical minerals involved, some of which are not produced by the big mining companies.

Senator Scrugham emphasized the fact that the declared purpose of the new bill, in its own wording, is: "To avoid a repetition in any future emergency of the shortage of strategic and critical minerals which has impeded the prosecution of the present war and to stabilize and protect the domestic minerals and metals market against post-war dumping of present accumulations."

All stock piles are frozen until Congress deems the utilization of them necessary for a future national emergency.

He pointed out further that: "The Metals Reserve Company, an agency experienced in this field, is chosen to do the stockpiling, but policies will be established by a Mineral Stock Pile Control Board, composed of five outstanding members of the mining industry appointed by the President with the advice and consent of the Senate."

The mining industry, he said, has indicated a generally favorable attitude towards post-war stockpiling.



FIRST DPC MILL UNITS

IN OPERATION AT MORENCI

INITIAL production was started on December 1 by the Defense Plant Corporation facilities at the Phelps Dodge Corporation's Morenci Branch, Morenci, Arizona, when the first units of the DPC plant were placed in operation. It is further reported that, although necessary machinery and equipment are difficult to obtain, construction of the remainder of the plant is being pushed as rapidly as possible.

The Phelps Dodge Corporation first signed contracts with the Defense Plant Corporation for a \$28,000,000 expansion program at Morenci and the refinery at El Paso, Texas, in the spring of 1942, with plans calling for an 80 per cent increase in the copper company's open-pit and reduction works.

Recently, the Phelps Dodge Corporation, the DPC, and the Salt River Valley Water Users Association completed negotiations for construction of a dam at the old Horseshoe damsite on the Verde River about 14 miles above the Bartlett reservoir, and work already has been started on this project. The new dam is expected to develop an average of 29,000 acre feet of water annually for the Salt River project lands, and in return the copper company will be allowed to divert up to 14,000 acre feet of water yearly from the Black River, thus solving the problem of the additional water supply needed for the enlarged Morenci operations.

Head offices for the Phelps Dodge Corporation are at 40 Wall Street, New York, New York, and H. M. Lavender, Douglas, Arizona, is general manager of operations. Gilbert C. Davis, Box 1598, Clifton, Arizona, is general manager of the Morenci Branch.

CALIFORNIA GOLD FIRM

DEVELOPING TUNGSTEN MINE

OPERATIONS are said to be progressing satisfactorily at the Quartzsite tungsten mine in Arizona, under the management of the Gold Hill Dredging Corporation, which previously has carried on gold-dredging operations in Calaveras County, California. The company recently was awarded a \$25,000 development loan from the Reconstruction Finance Corporation and is understood to have expended some \$30,000 prior to that time in developing the property.

The Quartzsite mine, which was purchased by Gold Hill Dredging last year, is located 12 miles north of Quartzsite, Arizona. The prevailing rocks are quartz-mica schist, limestone, and quartzite, traversed by two zones impregnated by scheelite. These zones have been separated by limey schist. Two main ore shoots, from 4 to 12 feet wide, have been opened by the company.

The main shaft is down 87 feet, with 30 feet of lateral work and a 50-ton ore pocket at the bottom of the shaft having been completed. A second shaft is 35 feet deep and has 160 feet of drifting, mainly on a vein of scheelite ore.

A crushing, screening, and lamping plant is being erected in connection with the main shaft. It is planned that the mine



run of ore will pass over a five-inch grizzly on which ore will be lamped and waste material discarded. Undersize will go to a one-inch impact screen, while the minus one-inch material will pass to a bin below and oversize will be lamped and hand-sorted on the screen, with the ore going to the crusher and waste material rejected. All fines in the ore bin will be shipped to the Parker stockpile, for sampling, assaying, and marketing.

Operation of the plant is expected to determine the advisability of erecting a mill later on to treat the ore on the ground. The final operation probably will consist of shipping high-grade to the Parker stockpile and milling the low-grade ore at the property.

A crew of 12 men is being employed at the Quartzsite under the direction of J. M. Elmer, Quartzsite, superintendent of operations. Head offices for the Gold Hill Dredging Company are at 311 California Street, San Francisco 4, California, and E. B. DeGolia, 904 Robert Dollar Building, San Francisco, is president.

ANACONDA DEVELOPS SYSTEM FOR TRAINING NEW MINERS

A PRACTICAL and tested system of training underground miners has been developed by the Anaconda Copper Mining Company at its mines at Butte, Montana, and a booklet describing the system in minute detail has been prepared for the Bureau of Training of the War Manpower Commission. The facts that the labor supply is critical and that the present-day miner is doing specialized work, rather than the all-round jobs of the old Cousin Jack, force the mining companies to tackle the problem of green labor in a new way. The Anaconda plan trains new men, quickly and safely, without interrupting mine routine. It has been followed successfully in the Butte mines for over nine months.

The training system is divided into four parts: preproduction training, on-the-job training, supplemental or related training, and follow-up. Obviously, alterations to the Anaconda system will be necessary, but the basic form is believed to be workable at any underground mine.

**LEASE AND OPTION TAKEN
ON ST. JOHNS PROPERTY**

A LEASE with option to purchase has been taken on the old St. Johns quicksilver mine by Walter J. Robertson, 208 Del Mar Avenue, Vallejo, California, and it is expected that operations will be commenced shortly. The mine comprises about 712 acres six miles from Vallejo in Solano County, California.

Preliminary prospecting of an old open cut on the ridge of St. Johns Mountain is reported to have yielded some promising ore, consisting of impregnations and fracture coatings in sandstone and shale. Tests also have been made of the old dumps, of which there is a large tonnage available, and it is indicated that this material is amenable to treatment by the wet sodium sulphide-sodium hydroxide process. Imperfectly burnt ore from the original bank of 24-pipe retorts also has been found to contain good values in unburnt cinnabar and liquid mercury. Recovery of these values by a combination of concentration and the wet chemical process, according to Robertson, appears to be commercially practicable. Equipment on the property includes an oil-fired retort of four inclined pipes.

The St. Johns has a production record of some 17,000 flasks of quicksilver. The mine was discovered in the 1850's and was first operated in 1873. In 1880, the low price for quicksilver made a shutdown necessary and the property remained idle for the next 19 years. In 1899, the St. Johns Consolidated Quicksilver Mining Company started work and continued operations until 1908. From 1914 to 1919, the mine was operated by the St. Johns Mines Company, Clifford Dennis, president, but when the quicksilver price fell operations were suspended. Since the last war, various lessees have operated intermittently on a small scale.

**EFFECTS OF SAND STEMMING
IN BLASTING IN METAL MINES**

THE seventh in a series of investigations on the use of stemming in metal mine blasting has been conducted by the Bureau of Mines at its Mount Weather Testing Adit near Berryville, Virginia. This investigation indicated that rounds of shots fired without stemming broke down only 72 per cent as much rock as shots fired with two cartridges of sand stemming.

Thirty standard four-foot test rounds were fired—10 with 80 sticks of dynamite and no stemming, 10 with 80 sticks of dynamite and sand stemming, and 10 with 64 sticks of dynamite and sand stemming. Two cartridges of stemming were used in each hole since that quantity is most frequently employed by metal mines in this method of blasting. The third group of test rounds, identical to the first except for the 20 per cent reduction in the amount of dynamite, served as a check on the accuracy of the observations. With the charge cut to 80 per cent, the rounds produced 79 per cent as much rock and 99 per cent as much rock per pound of dynamite as the full-charged rounds. The explosive used in all tests was 40 per cent ammonia gelatin dynamite.

AR-POLENE

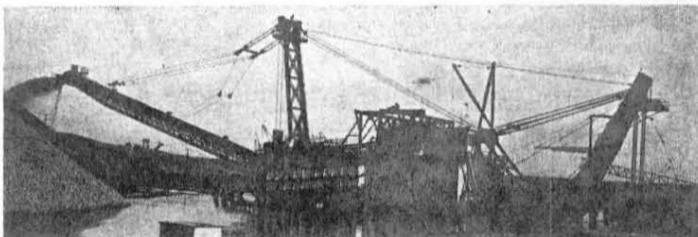
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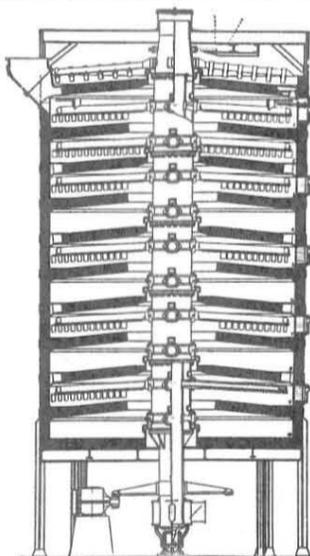
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Further investigations will be conducted to determine the effect of the quantity of sand stemming upon blasting efficiency. Rounds of the same size will be fired without stemming; and with one, two, three, and four cartridges of sand stemming per hole. Four cartridges will fill the hole to the collar.

A copy of Report of Investigation 3725, "Stemming in Metal Mines, Progress Report 7," by Wing G. Agnew, superintendent of the Mount Weather Field Station, may be obtained by request to the Bureau of Mines, Department of the Interior, Washington 25, D. C.

BIGGAR PROPOSES SPECIAL SESSION STATE LEGISLATURE

GOVERNOR EARL WARREN of California has been requested by State Senator George M. Biggar of Mendocino County to call a special session of the California legislature so that steps may be taken to restore the state's gold mining industry at the earliest possible moment. Senator Biggar took this action after completing a trip over a considerable portion of the state, during which he observed the condition of the gold mines caused by lack of operation.

"I was amazed to find popular concern so widespread and so strong over the destruction of this industry," said Senator Biggar. "Mining men pointed out to me the rapid deterioration that is taking place in the timbering of shafts and tunnels and explained how fast the equipment and re-

INDIA AS METAL PRODUCER

The war may force India into becoming a major industrial nation, but the change will be tremendously difficult, say observers. The American economic mission has recommended the expansion of the basic industries, steel, water power, aluminum, and sulphur.

India's three billion tons of extremely high-grade iron ore reserves average 64 per cent iron, and there may be as much as 17 billion tons of lower grade ore. India, likewise, is the world's second largest producer of manganese; limestone and magnesite are found near the iron mines; chrome is available; and India's reserves of high-grade bauxite are large. India also is the world's largest producer of mica. The major metal deficiencies are lead, zinc, tin, and tungsten, but there is a small amount of copper.

duction plants are depreciating from lack of use. If the mines are left idle much longer, it will take immense sums of money and months of time to get them on a production basis again."

Biggar then explained that the mines, their owners and employes, are not the only interests that are seriously affected by the closing order. He showed how the famed California ghost towns are no longer merely a misty memory of a past era, but that a new generation of ghost communities has been created by the WPB policy,

and that these depopulated areas have a very definite connection with the welfare and happiness of people now living.

He does not share the belief of some that nothing can be done about the situation, and advocated that the state demand that the order closing gold mines in California be rescinded. "There is a strong feeling," he said, "that we have not voiced an adequate protest against the closing order. In fact, had we protested vigorously enough the order would not have been put into effect."

"Shortage of manpower was the reason given for the closing of our mines," stated the senator. "This argument does not seem to me to be adequate. Surely there is just as acute a manpower shortage in the British Empire as there is here in the United States. If other countries at war can double and treble their output of gold, surely we should resume our normal mining activities. We also should remember that the gold reserve of this country is the greatest power we will have in post-war readjustment of monetary and trade problems. Why should we curtail our gold production while other nations increase theirs? I cannot believe that Great Britain has greater need for gold than we have. We are spending far more on the war effort than any other nation in the world and we shall have the greatest war debt when it is over. Why, then, have we stopped mining gold when we shall need gold so badly when the day of reckoning comes after the war?"

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**SPOKANE MEETING OF
NORTHWEST MINING ASS'N**

(Continued from Page 9)

no provision for the development of new reserves. As a consequence the industry is believed "to face a situation in the post-war world which demands most serious consideration of national and state governments if we are to prevent a collapse which will result in unemployment and actual bankruptcy for many industries which have taken risks in response to the demand for metals to fight the war. To prevent this, definite governmental action is called for. The mining industry believes its record in this critical period gives it the right to request the government to cooperate in enabling it to bridge the period of readjustment following the war."

It was recommended that the dumping of frozen stocks of metals and ores be prevented by limiting imports of foreign metals to amounts necessary to make up deficiencies of domestic production; that civilian stocks be adjusted periodically to this end. Enactment of the pending Scrugham stockpile bill was favored. Disapproval of the Hatch bill was voiced, and also of the federal tax provisions relating to excess profits tax.

The association recommended that metal prices be maintained at levels now prevailing, either by increase of base prices or by continuance of premium prices, and that the government maintain this price level by purchasing and stockpiling for emergencies. It also contended that the mining industry should be permitted to set aside, tax free, a fund to enable it to prospect for and develop ore bodies to replace those depleted by concentrated effort to produce metals for war needs. A readjustment of quotas to compensate for increased costs was advocated.

Convention plans were arranged by C. O. Dunlop, chairman, assisted by J. B. Haffner, R. O. Oscarson, Irving T. Atwater, Walter J. Nicholls, R. D. Leisk, and Phil Shenon. Selectment for the 'town meeting' were Donald A. Callahan, chairman, assisted by J. B. Haffner, John J. Curzon, Jens Jensen, Carl Trauerman, and Harry Marsh.

**KERN COUNTY, CALIFORNIA, TIN
DEPOSITS ARE BEING STUDIED**

THE district and regional directors of the United States Bureau of Mines are reported to have recommended an appropriation for continued work at the Meek-Hogan tin prospect in Kern County, California. Geologists of the United States Geological Survey, under the direction of Lincoln H. Page, recently completed a study of the Meek, and a topographic and geologic map and cross sections have been prepared.

A second deposit, known as the Butler and located one mile east of the Meek, also has been plane-tabled and geologically mapped by Page. This is a contact deposit between limestone and granite, extending 1,600 feet. Two miles to the west of the Meek is the Crowbar Gulch deposit which has been plane-tabled and mapped by Thomas Thayer of the Geological Sur-

vey, and further west is a fourth, the Dunton, which it is understood the Geological Survey proposes to examine shortly.

The Meek-Hogan was discovered over a year ago and is owned by Dana Hogan of the Hogan Petroleum Company, Petroleum Building, Los Angeles 15, California. To date the exploration work has consisted of bulldozing, trenches, ten 10-foot shafts, two 50-foot shafts, and an 86-foot cross-cut from the 23-foot level in one of the 50-foot shafts. In all four deposits the tin bearing ore is magnetite, hematite, and limonite, said to carry from 0.18 per cent to 53.1 per cent SnO₂ and to be free from arsenic, antimony, sulphur, and other deleterious materials. According to Hogan, the government smelter at Texas City, Texas, has run one batch of the ore with satisfactory results. He estimates the visible ore in the Meek, Butler, Crowbar, and Dunton deposits at 100,000 ton.

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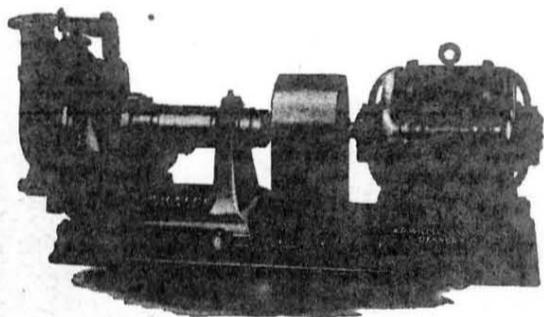
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was formed to take over the holdings of the Pine Top Asbestos Company of Globe. Southwestern Asbestos will operate a custom asbestos purchasing station and processing plant at Globe under an asbestos program involving the expenditure of approximately \$150,000 which recently was authorized by the Defense Plant Corporation and the Reconstruction Finance Corporation. The new concern also will operate the Pine Top asbestos mine about 37 miles northeast of Globe in Gila County, Arizona, and has set up a project providing for development of certain mines in the district and assistance to other mines which can be shippers to the proposed custom plant. Asbestos, Ltd., of New York will purchase the company's entire output. Michault has been general manager of the Pine Top company and William Andrews, Box 48, Globe, Arizona, has been the local agent.

Ernest R. Dickie, Wickenburg, Arizona, recently acquired the Belmont-McNeil mine under sub-lease from Pierre Perry, Box 182, Mayer, Arizona. The property, which lately had been operated by George F. Reed, Box 427, Willcox, Arizona, is located at Palo Verde in western Maricopa County, Arizona. The Belmont-McNeil is owned by the Economy Mining Company and has principal values in lead and copper. Dickie, who is president and general manager of the East Vulture Mining Company, also is operating the East Vulture mill near Wickenburg.



Prospecting and development work are being continued by the A. J. Rupley interests of Placerville, California, in the New River district of Trinity County, California. An access road recently was completed to the district, thus facilitating the transportation of needed machinery and supplies. The property carries values in gold and manganese. E. W. Haschke of Placerville is in charge of operations for the Rupley group.

The Golden Feather Dredging Company is reported to have completed dredging operations along the Feather River above Oroville, California, and to have started work in the Thermalito section. The dredging firm is reported to have paid out \$11,326 to the City of Oroville in royalties from the Feather River operations. The company had been employing an average of 25 men and worked three shifts daily. The Golden Feather concern had been allowed to continue dredging because, in widening the Feather River channel, the company combined flood-control work with its mining operations. F. A. Wiltsee, Room 1003, Wells Fargo Building, San Francisco, California, is general manager.

Substantial ore bodies recently were discovered by the Lava Cap Gold Mining Corporation at the Keystone copper property near Copperopolis, California, and the concentrating plant is operating at capacity. A crew of 150 men is being em-

ployed by the company, many of the workers having been with Lava Cap gold operations at Grass Valley before the shutdown order for gold properties. The Keystone is said to be producing about 500,000 pounds of copper monthly and it is planned to increase output to double that amount by next year. The company recently moved considerable machinery and equipment from its Lava Cap properties for use at the Keystone. Otto E. Schiffler, Nevada City, California, is general manager.

Negotiations for the construction of a plant to extract magnesium from serpentine by the Brandenburg process are being completed by the Idaho Maryland Mines Corporation, and it is understood that the company already has been granted priorities for equipment. Numerous tests of serpentine deposits on Idaho Maryland property have been made and it is indicated that the material will yield 300 pounds of magnesium oxide per ton. H. R. Brandenburg, Box 815, Grass Valley, California, who invented the magnesium-from-serpentine process, has been on the technical staff of the Idaho Maryland company since October of 1942, and the Idaho Maryland properties, which formerly were worked for gold, are located in the Grass Valley region. Albert Crasé, Grass Valley, is general manager of operations.

It is expected that operations will be resumed at the Relief Hill gold placers as soon as sufficient water is available. The War Production Board is permitting restricted operation by the hydraulic mining group. The Relief Hill property is owned and operated by Western Gold, Inc., W. H. Taylor, president, 943 Russ Building, San Francisco, California. The mine is located at Bloomfield, California, and C. E. Clark of Bloomfield is superintendent. The company had been employing 35 men at its Nevada County property and operated two seven-inch monitors until the mine was closed down early in the fall of 1942.

Tunneling is being continued at a satisfactory rate by the C and R Mining Company at its Trinity County, California, property. The company hopes to develop additional reserves and in the meantime is shipping steadily from the manganese property. Mining is by open-cut methods, using bulldozers and trucks. High-grade manganese, averaging 54 per cent, is hauled 12 miles to Alderpoint, Humboldt County, California, for shipment via rail to the government stockpile at Sacramento, California. The company is a new organization, having been formed early this year by a group of San Francisco men, including Anson S. Bilger, Russ Building; G. E. Reed; P. H. McCarthy, Jr.; Joseph Marshall; and H. O'Neil.

Recent operations at the Buzzard mine nine miles east of Folsom, California, include the installation of a hoist and power units and dewatering to the 250-foot level. Assays have shown satisfactory sulphide ore on the 70, 130, and 170-foot levels, with vein widths of three to seven feet, carrying values in gold, silver, copper, lead, and zinc. The operator plans to treat the ore in a 40-ton selective flotation

plant and ship the concentrates to the International Smelting and Refining Company, Tooele, Utah. It is planned that erection of the milling plant and dewatering of the 300-foot level will be under way in the near future. The mine is being leased and operated by Paul F. Taylor, 211 Canal Street, Placerville, California.

John Martin and J. H. Dempsey, Havilah, via Caliente, California, are developing the **Marsey** tungsten mine 3½ miles south of Havilah adjoining the old Tungsten Chief mine. The mining partners formerly worked a tungsten property 37½ miles northwest of Barstow, California.

A third car of concentrates was shipped recently from the **Strawberry** tungsten mine on Granite Creek, tributary of the San Joaquin River, in the eastern part of Madera County, California. The concentrates were produced at the company's new 50-ton gravity concentration plant, which was put into operation last September. Delivery is expected sometime this month on a large tractor-driven rotary snow plow and arrangements are being made to keep the property accessible during the winter months. A crew of 40 men is employed. J. C. Perkins, 3122 Washington Avenue, Fresno 2, California, is manager and Walter B. Lenhart is general mine superintendent.

The **Weldon Tungsten Mining and Milling Company** has reported a loss of over \$5,000 to its machinery and part of a building when fire swept through the company's plant at Weldon, Kern County, California. It is said that other property valued at \$20,000 was saved from damage. Cause of the fire has not yet been determined.

It is reported that the three-mile tramway at the **Gray Eagle** copper mine has been put back into operation. The new tramway had been under repair for several weeks following breakage of the main cable. The tram was constructed recently as part of the \$1,000,000 rehabilitation, development, and equipping program started early in 1942 at the Gray Eagle. The mine, located near Happy Camp, California, is a copper property and about 150 tons of copper concentrates are being shipped daily. The **Newmont Mining Corporation**, Charles F. Ayer, 14 Wall Street, New York, New York, president, is the operating company. Robert J. Hendricks, Happy Camp, is general manager.

Chrome ore averaging better than \$80 per ton is being produced at the **White Pine** mine of the **Sundown Mining Company** in the Rock Creek district about 15 miles southeast of Quincy in Plumas County, California. Overburden has been removed from the ore body by bulldozers and the wall rock is said to run high in chromic oxide. The size of the ore body has been determined by means of considerable drilling and mine development work. The White Pine is under lease to the Sundown Mining Company from Ellis R. Patterson and E. V. Spivey, both of Quincy, California, and Frank Maurizzio, Quincy, is operating the ground under agreement with James Melone, Quincy, of the Sundown concern.

C. D. Williams, Yreka, California, has reported the discovery of high-grade graphite at his mining property located about 16 miles from Yreka. Considerable commercial material is said to be exposed in outcroppings, while preliminary development work so far indicates a large deposit. Williams also is said to have discovered outcroppings of oil-bearing shale near the graphite.

Stephan Riess, Route 1, Simi, California, recently was in Randsburg, California, where he checked mine equipment at the **Windy** mine, which he and Carl Dodge, Jr., purchased over a year ago from Terrence O. Welch, Torrance, California. It is understood that the owners plan to conduct an open-cut operation at the low-

grade gold property after the war. He is connected with the Dodge Construction, Inc., of Fallon, Nevada.

In line with the curtailment of government projects for the production of strategic metals, the Metals Reserve Company's work on the **Cajalco** tin property, located in the Temescal district of Riverside County, California, was closed down in October. It is stated that \$125,000 had been expended for the 100-ton pilot plant, but that it never was sufficiently equipped so that the concentration of tin was possible. The work was done by the **Dodge Construction, Inc.**, of Fallon, Nevada, as agent for Metals Reserve. It is stated further that the operating force has been disbanded.

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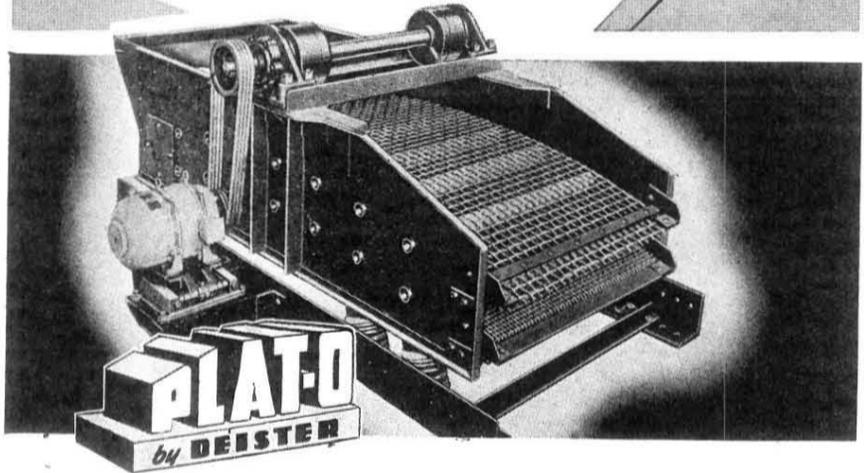
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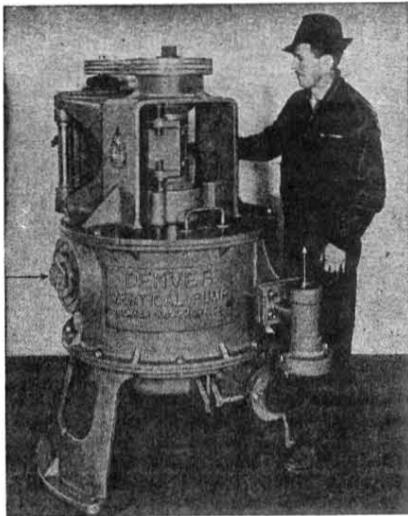
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A limited number of copies of geological and topographical maps, with a mimeographed explanatory text, on the Sulphur Bank mine and the surrounding area are on file in the head offices of the United States Geological Survey and may be obtained by those directly interested from the Director, Geological Survey, Washington 25, D. C. The Sulphur Bank, which is in Lake County near Clearlake Park, California, was examined in the spring and summer of 1943 by D. L. Everhart of the USGS. The property has been under operation by the Bradley Mining Company, which is headed by Worthen Bradley, 425 Crocker Building, San Francisco, California. F. A. Hammersmith, 920 Crocker Building, San Francisco, is purchasing agent for the Bradley interests.

O. H. Griggs, Western Manganese Mines, Crescent Mills, California, and associates, are reported to be starting actual production at their recently acquired properties in California. The group has secured leases on the Lilyama and Pioneer mines in the Pilot Hill district of Eldorado County, California, and the Cosumnes copper property east of Plymouth, Amador County, California. The deal also included the Volo Mining Company's Shaw mill at Placerville, California. The milling plant is being reconditioned at present. Associated with Griggs in the venture are Forrest V. Phillips, former general manager of the Volo Mining Company, and E. L. Reeves. Reeves is mill superintendent and Herb Rosborough is mine manager. Rosborough also continues as superintendent of Western Manganese Mines, which is being operated by Griggs and associates.

Equipment includes a 550-ton flotation plant and a 3,000-foot tramway. Officials include C. F. Parker, Jr., mine superintendent; John Ferguson, Jr., mill superintendent; C. V. Telk, superintendent of power; Clyde Nettleton, purchasing agent and office manager; and T. E. McCandless, chief engineer.

Rehabilitation of the Old Town shaft is being continued, the skip having been lowered to the 1,500-foot level for the first time since the cave-in between the No. 9 and No. 10 levels 27 years ago. The timbers below the 1,500-foot level are reported to be in good condition, but the rails in the workings below that point have been destroyed by mine water. The entire shaft is 2,205 feet deep. The present operators, George K. Kimball, Box 53, Idaho Springs, and associates, are cleaning out the lower levels of the mine for new production and also are shipping stope-fill material to the Huntington mill at the rate of 20 tons a day. This will be increased soon.

Three dividends have been declared by the Climax Molybdenum Company, 500 Fifth Avenue, New York 18, New York, all payable December 14 to stockholders of record December 3, 1943. A regular payment of 30 cents a share, an extra dividend of 20 cents, and a year-end dividend of \$1.20 a share have been announced. Dividends for the year total \$3.20, the same amount paid by the company in 1942.

The Barstow tunnel, parallel to the Treasury tunnel and about 3,000 feet north of it, is being cleaned out for use as a drainage and ventilation tunnel for the main bore. The old 250-ton Treasury tunnel mill also is being prepared to receive Black Bear ore. The property is a consolidation of old mines made in 1939 by the Idarado Mining Company, which was controlled by the Newmont Mining Corporation and the Sunshine Mining Company. Development was carried on through 1940, but was suspended in 1941. Early in 1943 the Metals Reserve Company leased the property and made an operating agreement with the Sunshine Mining Company. A federal loan of \$1,300,000 was granted to extend the Treasury tunnel 3,000 feet to intersect the Black Bear vein and to drift 3,300 feet from that point. A 1,100-foot raise at the end of the drift will connect the tunnel with the Black Bear mine. John R. Austin is in charge of driving the tunnel for the contractors, Stiers Bros. Construction Company. The extension is over half-way completed and is reported to be progressing at the rate of several hundred feet a month. John Edgar, Ouray, is chief engineer for the Sunshine company.

Lead concentrates are being shipped to the Midvale smelter in Utah from the Ben Harrison-Croesus property in the Trail Creek district near Georgetown, Colorado. The ore is treated in the Clear Creek-Gilpin custom plant at Idaho Springs. George Calloway, R. M. Calvert, and John and Jack Mollard, all of Idaho Springs, are the mine operators.

Active mining operations are said to have been started at the Gold Belt mine

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Operations at the Lark mine on Cement Creek near Silverton, Colorado, will be carried on throughout the winter, according to present plans. A new tractor has been ordered and the operators will keep the road to the property open. Ross D. McCausland, Silverton, is in charge of the mine, which was reopened this year after being shut down for about 10 years. Principal values are in lead.

Efforts are being made by the Hayden Comal Corporation to reopen its mine, which is the Sutton property two miles south of Ouray, Colorado. J. E. Jarratt, 110 Geneseo Road, Terrell Hills, San Antonio, Texas, is president of the company.

Although the Telluride Mines, Inc., at Telluride, Colorado, is operating at present because of the high zinc content of its ores, the property was opened originally for gold and silver. When the war is over, production will revert to ores proportionately higher in gold and silver values. The company, Harold S. Worcester of Telluride, president and general manager, holds the Smuggler-Union, Cimarron, Humboldt, and Tomboy mines in Ouray and San Miguel counties and works the ground through the Bullion and Pennsylvania tun-